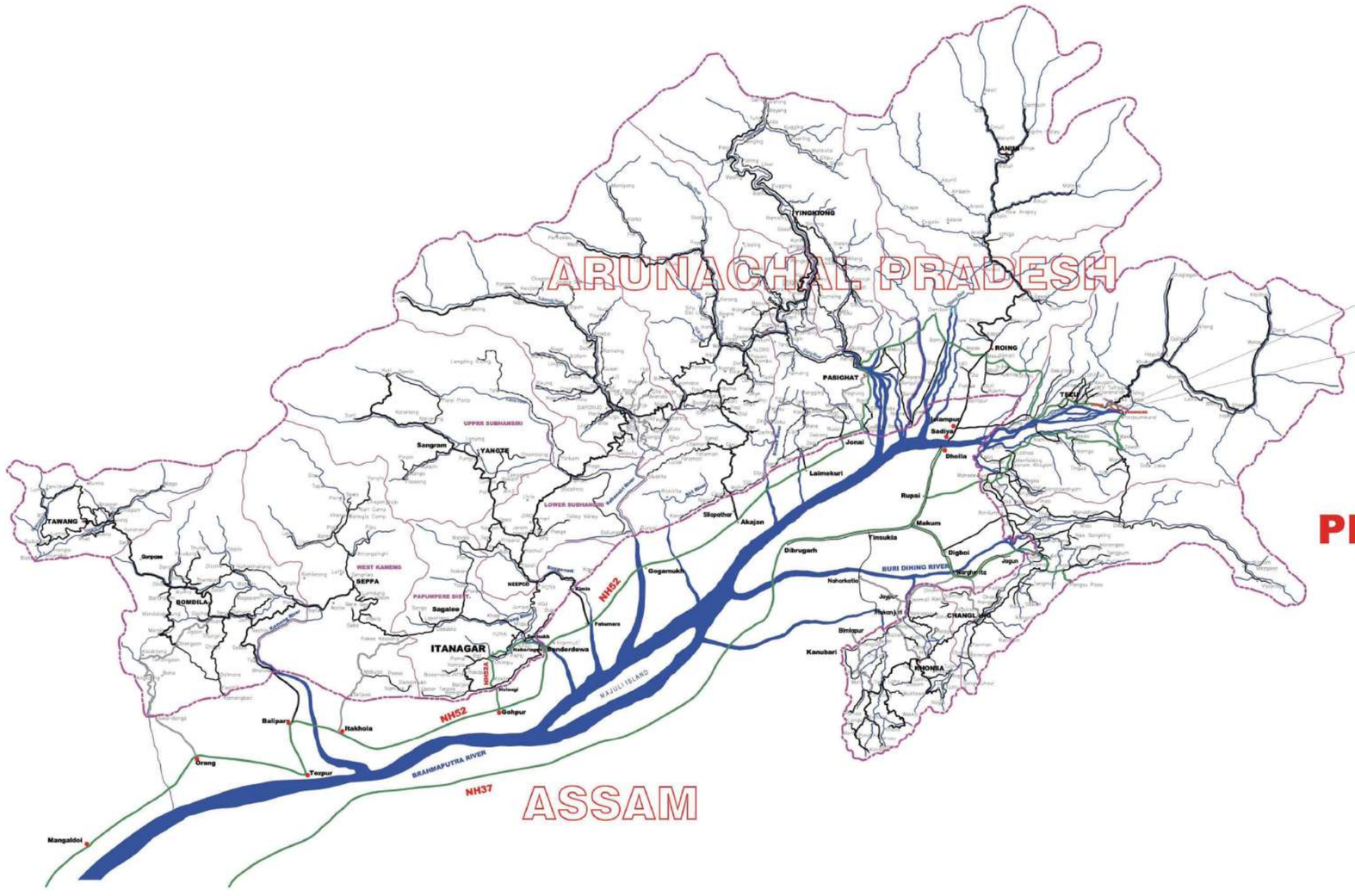
राष्ट्रीय राजमार्ग एवं अवसंरचना विकास निगम लिमिटेड
National Highways & Infrastructure Development Corporation Limited

BUILDING INFRASTRUCTURE - BUILDING THE NATION

CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.960 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE



PLAN & LONGITUDINAL PROFILE

(Km. 0+000 to Km. 18+960)

FEBRUARY - 2024

Client :	Authority Engineer :	EPC Contractor :	Safety Consultant :	Proof Consultant :	Design Consultant :
NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED 3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001	**Global Infra Solutions** E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039) Tel.-0755-4045216		SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) Approved By Govt. of Orissa Regd. No. 11 of 2004-05 PP-97, Tankapani Road, BBSR-18, Odisha	SHAMBHAVI TECHNO SOLUTIONS PVT.LTD. E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001	**SPS Technocrats Pvt. Ltd.** # 638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018 Website : www.spstpl.com Email : info@spstpl.com

LIST OF DRAWINGS

SR. NO.	DRAWING NAME	DRAWING NO.	NO. OF SHEETS
01	LIST OF DRAWINGS	VLE/DE-BR/HW/GEN/LOD/01	01
02	LEGENDS & ABBREVIATIONS	VLE/DE-BR/HW/GEN/LEGEND/01	01
03	LIST OF REFRENCE PILLAR	VLE/DE-BR/HW/GEN/PILLAR/01	01
04	HORIZONTAL ALIGNMENT REPORT	VLE/DE-BR/HW/GEN/HOR/01 TO 05	05
05	VERTICAL ALIGNMENT REPORT	VLE/DE-BR/HW/GEN/VER/01	01
06	TYPICAL CROSS SECTIONS	VLE/DE-BR/HW/GEN/TCS/01 TO 04	04
07	PLAN & LONGITUDINAL PROFILE (From Km 0+000 to Km 19+540)	VLE/DE-BR/HW/PNP/01 TO 38	77

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS Regd. No-111/2004-05 BHUBANESWAR

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client :
NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer :
Glabal Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor :
Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant :
SUVADRA CONSULTANTS
(An ISO 9001 : 2008 Certified)
Soil Testing Laboratory & Engineering Consultancy approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant :
SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Purl, Boring Road, Patna-800001

Design Consultant :
SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018.
Website : www.spstpl.com
Email : info@spstpl.com

Project:
DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP. -2022

Title: **LIST OF DRAWINGS**
Scale: **AS SHOWN**
Rev: **R4**
Drg. No: **VLE/DE-BR/HW/GEN/LOD/01**

LEGEND & ABBREVIATION

LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
LEGEND FOR PLAN			
	BUILDING (P, SP, K, UC)		COVERED DRAIN
	CULVERT, BRIDGE	11KV	11KV ELECTRIC LINE
	GATE	33KV	33KV ELECTRIC LINE
TP	TELEPHONE POLE		TOILET
EP	ELECTRIC POLE		EXISTING CARRIAGEWAY
	TEMPORARY BENCH MARK	P	REFFRENCE PILLAR
	SIDE ROAD	GPS	GPS PILLAR
	NALA & RIVER		PIPE CULVERT
	TRANSFORMER		PROPOSED CARRIAGEWAY EDGE
KM	KILOMETER POST		PROPOSED SERVICE ROAD
	TREE		PROPOSED CENTER LINE
NIGMOI	VILLAGE NAME		PROPOSED SHOULDER EDGE
	BOUNDARY WALL	P ROW	PROPOSED RIGHT - OF - WAY
S41	SURVEY STATION	213	CONTOUR LINE
	FENCING		PROPOSED TOE LINE
	AGRICULTRAL FIELD		HOR. TANGENT POINT
LP	LAMP POST		VER. TANGENT POINT
	RETANING WALL		PROP. CULVERT
	GARDEN		FOOTPATH CUM DRAIN
	WALL		
	TEMPLE		

ABBREVIATION

SYMBOL	DESCRIPTION
△	TOTAL DEVIATION ANGLE OF CURVE
R	RADIUS OF CIRCULAR CURVE
Ts	TANGENT LENGTH
Es	APEX DISTANCE
Lc	LENGTH OF CIRCULAR CURVE
e	SUPER ELEVATION
Ls	LENGTH OF TRANSITION CURVE
$\triangle_s$	DEVIATION ANGLE OF TRANSITION CURVE
$\triangle_c$	DEVIATION OR CENTRAL ANGLE OF CIRCULAR CURVE
L	TOTAL LENGTH OF CURVE
S	SHIFT
PC	POINT OF CURVATURE
PT	POINT OF TANGENCY
TS	POINT OF CHANGE FROM TANGENT TO SPIRAL
SC	POINT OF CHANGE FROM SPIRAL TO CIRCULAR CURVE
CS	POINT OF CHANGE FROM CIRCULAR CURVE TO SPIRAL
ST	POINT OF CHANGE FROM SPIRAL TO TANGENT
IL	INVERT LEVEL OF CULVERT
PVI	POINT OF VERTICAL INTERSECTION
Lvs	LENGTH OF VALLEY CURVE
Lsc	LENGTH OF SUMMIT CURVE
HIP	HORIZONTAL INTERSECTION POINT

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd
Managing Director

SUVADRA CONSULTANTS Regd. No- 11/2004-05 BHUBANESWAR

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : Glabal Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultants) approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018.
Website : www.spstpl.com
Email : Info@spstpl.com

Project: DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP. -2022

Title: LEGEND & ABBREVIATIONS
Scale: AS SHOWN
Rev: R4
Drg. No: VLE/DE-BR/HW/GEN/ LEGEND/01

HORIZONTAL ALIGNMENT REPORT

HORIZONTAL ALIGNMENT REPORT

HIP / Curve No.	HIP		Deflection Angle			Element	Start			End			Length (m)	Bearing (dd mm ss)	Hand of Arc	Design Speed (KM/H)	Radius (m)	Superelevation (%)
	Easting (m)	Northing (m)	Deg	Min	Sec		Chainage (m)	Easting (m)	Northing (m)	Chainage (m)	Easting (m)	Northing (m)						
						Start	0.000	233013.879	3089378.220	5.805	233019.672	3089378.597	5.805					
						Transition	5.805	233019.672	3089378.597	20.805	233034.603	3089379.986	15.000					
1	233069.455	3089381.836	309	36	35.7	Arc	20.805	233034.603	3089379.986	84.958	233089.575	3089410.355	64.153		Left	30	-90	4.44%
						Transition	84.958	233089.575	3089410.355	99.958	233098.699	3089422.255	15.000					
						Straight	99.958	233098.699	3089422.255	132.035	233117.502	3089448.243	32.077	35 53 12				
						Transition	132.035	233117.502	3089448.243	152.035	233130.256	3089463.603	20.000					
2	233135.076	3089472.532	43	19	38.4	Arc	152.035	233130.256	3089463.603	169.845	233145.206	3089473.108	17.810		Right	30	50	7.00%
						Transition	169.845	233145.206	3089473.108	189.845	233164.526	3089478.142	20.000					
						Straight	189.845	233164.526	3089478.142	206.037	233180.431	3089481.173	16.192	79 12 50.3				
						Transition	206.037	233180.431	3089481.173	221.037	233195.116	3089484.224	15.000					
3	233198.691	3089484.651	351	32	53.7	Arc	221.037	233195.116	3089484.224	228.163	233201.999	3089486.070	7.126		Left	30	-150	2.67%
						Transition	228.163	233201.999	3089486.070	243.163	233216.240	3089490.775	15.000					
						Straight	243.163	233216.240	3089490.775	248.023	233220.828	3089492.376	4.860	70 45 44.1				
						Transition	248.023	233220.828	3089492.376	278.023	233250.071	3089497.380	30.000					
4	233259.927	3089506.021	80	41	35.4	Arc	278.023	233250.071	3089497.380	290.273	233261.420	3089492.998	12.250		Right	30	30	7.00%
						Transition	290.273	233261.420	3089492.998	320.273	233279.716	3089469.643	30.000					
						Straight	320.273	233279.716	3089469.643	320.470	233279.810	3089469.470	0.197	151 27 19.5				
						Transition	320.470	233279.810	3089469.470	350.470	233289.476	3089441.421	30.000					
5	233298.225	3089435.616	74	17	9	Arc	350.470	233289.476	3089441.421	359.366	233288.151	3089432.657	8.896		Right	30	30	7.00%
						Transition	359.366	233288.151	3089432.657	389.366	233270.624	3089408.720	30.000					
						Straight	389.366	233270.624	3089408.720	401.486	233261.944	3089400.262	12.120	225 44 28.5				
						Transition	401.486	233261.944	3089400.262	431.486	233244.417	3089376.325	30.000					
6	233213.349	3089352.909	241	3	17.3	Arc	431.486	233244.417	3089376.325	463.766	233251.715	3089346.459	32.280		Left	30	-30	7.00%
						Transition	463.766	233251.715	3089346.459	493.766	233278.306	3089333.302	30.000					
						Straight	493.766	233278.306	3089333.302	554.098	233336.065	3089315.868	60.332	106 47 45.8				
						Transition	554.098	233336.065	3089315.868	569.098	233350.563	3089312.051	15.000					
7	233374.634	3089304.226	309	53	0.9	Arc	569.098	233350.563	3089312.051	615.327	233395.485	3089318.574	46.229		Left	30	-70	5.71%
						Transition	615.327	233395.485	3089318.574	630.327	233408.299	3089326.357	15.000					
						Straight	630.327	233408.299	3089326.357	632.702	233410.284	3089327.662	2.375	56 40 46.7				
						Transition	632.702	233410.284	3089327.662	662.702	233437.431	3089339.630	30.000					
8	233449.918	3089353.717	92	21	52.3	Arc	662.702	233437.431	3089339.630	681.064	233455.054	3089335.606	18.362		Right	30	30	7.00%
						Transition	681.064	233455.054	3089335.606	711.064	233474.315	3089313.041	30.000					
						Straight	711.064	233474.315	3089313.041	714.166	233475.911	3089310.381	3.102	149 2 38.9				
						Transition	714.166	233475.911	3089310.381	744.166	233495.173	3089287.816	30.000					
9	233500.027	3089270.176	268	36	25.4	Arc	744.166	233495.173	3089287.816	762.020	233512.289	3089283.755	17.854		Left	30	-30	7.00%
						Transition	762.020	233512.289	3089283.755	792.020	233539.635	3089295.262	30.000					
						Straight	792.020	233539.635	3089295.262	821.903	233564.880	3089311.252	29.883	57 39 4.3				
						Transition	821.903	233564.880	3089311.252	841.903	233582.421	3089320.787	20.000					
10	233590.74	3089327.63	44	33	43.3	Arc	841.903	233582.421	3089320.787	860.791	233600.907	3089324.069	18.888		Right	30	50	7.00%
						Transition	860.791	233600.907	3089324.069	880.791	233620.658	3089321.155	20.000					
						Straight	880.791	233620.658	3089321.155	965.586	233703.534	3089303.216	84.795	102 12 47.6				
						Transition	965.586	233703.534	3089303.216	990.586	233728.276	3089300.443	25.000					
11	233739.079	3089295.522	300	16	8.3	Arc	990.586	233728.276	3089300.443	1008.329	233745.051	3089305.781	17.743		Left	30	-41	7.00%
						Transition	1008.329	233745.051	3089305.781	1033.329	233763.640	3089322.343	25.000					
						Straight	1033.329	233763.640	3089322.343	1087.239	233800.049	3089362.102	53.910	42 28 55.9				
						Transition	1087.239	233800.049	3089362.102	1102.239	233810.100	3089373.236	15.000					
12	233813.453	3089376.739	355	57	34.1	Arc	1102.239	233810.100	3089373.236	1111.922	233816.383	3089380.602	9.683		Left	50	-350	3.17%
						Transition	1111.922	233816.383	3089380.602	1126.922	233825.793	3089392.284	15.000					
						Straight	1126.922	233825.793	3089392.284	1271.712	233915.812	3089505.690	144.790	38 26 30				
						Transition	1271.712	233915.812	3089505.690	1286.712	233925.546	3089517.092	15.000					
13	233928.448	3089521.61	20	43	54.3	Arc	1286.712	233925.546	3089517.092	1297.041	233933.311	3089523.888	10.329		Right	30	70	5.71%
						Transition	1297.041	233933.311	3089523.888	1312.041	233945.903	3089532.026	15.000					
						Straight	1312.041	233945.903	3089532.026	1383.937	234007.642	3089568.869	71.896	59 10 24.3				
						Transition	1383.937	234007.642	3089568.869	1403.937	234024.507	3089579.607	20.000					
14	234032.696	3089583.82	341	5	12.8	Arc	1403.937	234024.507	3089579.607	1421.898	234038.194	3089591.208	17.961		Left	40	-115	6.18%
						Transition	1421.898	234038.194	3089591.208	1441.898	234051.552	3089606.085	20.000					
						Straight	1441.898	234051.552	3089606.085	1472.956	234071.623	3089629.785	31.058	40 15 37.1				
						Transition	1472.956	234071.623	3089629.785	1492.956	234085.021	3089644.624	20.000					
15	234096.36	3089658.995	30	6	14.5	Arc	1492.956	234085.021	3089644.624	1528.124	234113.804	3089664.545	35.168		Right	40	105	6.77%
						Transition	1528.124	234113.804	3089664.545	1548.124	234132.410	3089671.857	20.000					
						Straight	1548.124	234132.410	3089671.857	1571.487	234154.415	3089679.708	23.363	70 21 51.6				
						Transition	1571.487	234154.415	3089679.708	1586.487	234168.455	3089684.982	15.000					
16	234207.567	3089698.672	323	52	40.8	Arc	1586.487	234168.455	3089684.982	1666.054	234230.678	3089733.068	79.567		Left	40	-150	4.74%
						Transition	1666.054	234230.678	3089733.068	1681.054	234239.322	3089745.324	15.000					
						Straight	1681.054	234239.322	3089745.324	1779.393	234294.657	3089826.617	98.339	34 14 32.4				
						Transition	1779.393	234294.657	3089826.617	1794.393	234302.645	3089839.304	15.000					
17	234303.783	3089840.024	345	49	24	Arc	1794.393	234302.645	3089839.304	1796.713	234303.704	3089841.368	2.320		Left	30	-70	5.71%
						Transition	1796.713	234303.704	3089841.368	1811.713	234309.347	3089855.258	15.000					
						Straight	1811.713	234309.347	3089855.258	1812.089	234309.477	3089855.612	0.376	20 3 56.4				
						Transition	1812.089	234309.477	3089855.612	1832.089	234319.244	3089872.810	20.000					
18	234320.752	3089886.48	95	32	50.1	Arc	1832.089	234319.244	3089872.810	1845.442	234331.382	3089877.753	13.353		Right	20	20	7.00%
						Transition	1845.442	234331.382	3089877.753	1865.442	234350.386	3089872.274	20.000					
						Straight	1865.442	234350.386	3089872.274	2185.264	234638.782	3089734.018	319.822	115 36 46.5				
						Transition	2185.264	234638.782	3089734.018	2205.264	234654.955	3089722.633	20.000					
19	234666.061	3089720.94	88	38	1.1	Arc	2205.264	234654.955	3089722.633	2216.203	234658.663	3089712.486	10.939		Right	20	20	7.00%
						Transition	2216.203	234658.663	3089712.486	2236.203	234653.638	3089693.357	20.000					
						Straight	2236.203	234653.638	3089693.357	2374.782	234596.728	3089567.002	138.579	204 14 47.7				
20	234589.384	3089550.695	4	5	50	Arc	2374.782	234596.728	3089567.002	2410.537	234580.892	3089534.954	35.755		Right	50	500	2.50%

HIP / Curve No.	HIP		Deflection Angle			Element	Start			End			Length (m)	Bearing (dd mm ss)	Hand of Arc	Design Speed (KM/H)	Radius (m)	Superelevation (%)
	Easting (m)	Northing (m)	Deg	Min	Sec		Chainage (m)	Easting (m)	Northing (m)	Chainage (m)	Easting (m)	Northing (m)						
						Straight	2410.537	234580.892	3089534.954	2432.340	234570.541	3089515.764	21.803	208 20 37.7				
						Transition	2432.340	234570.541	3089515.764	2447.340	234563.528	3089502.505	15.000					
21	234558.728	3089493.866	353	28	38.7	Arc	2447.340	234563.528	3089502.505	2467.062	234555.169	3089484.647	19.722		Left	50	-305	3.64%
						Transition	2467.062	234555.169	3089484.647	2482.062	234549.480	3089470.768	15.000					
						Straight	2482.062	234549.480	3089470.768	2483.819	234548.827	3089469.137	1.757	201 49 16.4				
						Transition	2483.819	234548.827	3089469.137	2513.819	234541.688	3089440.236	30.000					
22	234498.124	3089342.508	213	54	26.1	Arc	2513.819	234541.688	3089440.236	2575.612	234584.162	3089406.116	61.793		Left	30	-36	7.00%
						Transition	2575.612	234584.162	3089406.116	2605.612	234610.844	3089419.318	30.000					
						Straight	2605.612	234610.844	3089419.318	2699.444	234688.385	3089472.157	93.832	55 43 42.4				
						Transition	2699.444	234688.385	3089472.157	2719.444	234705.255	3089482.884	20.000					
23	234746.42	3089511.703	59	36	17.4	Arc	2719.444	234705.255	3089482.884	2808.676	234791.562	3089489.630	89.232		Right	40	105	6.77%
						Transition	2808.676	234791.562	3089489.630	2828.676	234809.894	3089481.654	20.000					
						Straight	2828.676	234809.894	3089481.654	2830.334	234811.393	3089480.944	1.658	115 19 59.9				
						Transition	2830.334	234811.393	3089480.944	2845.334	234825.164	3089475.017	15.000					
24	234852.532	3089461.468	303	4	30.9	Arc	2845.334	234825.164	3089475.017	2899.880	234878.261	3089477.920	54.546		Left	30	-70	5.71%
						Transition	2899.880	234878.261	3089477.920	2914.880	234891.304	3089485.313	15.000					
						Straight	2914.880	234891.304	3089485.313	2959.406	234929.232	3089508.638	44.526	58 24 30.7				
						Transition	2959.406	234929.232	3089508.638	2974.406	234941.853	3089516.739	15.000					
25	234956.218	3089525.235	338	56	11.2	Arc	2974.406	234941.853	3089516.739	3007.198	234966.111	3089538.675	32.792		Left	40	-130	5.47%
						Transition	3007.198	234966.111	3089538.675	3022.198	234975.436	3089550.421	15.000					
						Straight	3022.198	234975.436	3089550.421	3082.222	235011.847	3089598.140	60.024	37 20 42				
						Transition	3082.222	235011.847	3089598.140	3102.222	235025.598	3089612.527	20.000					
26	235095.38	3089707.614	153	5	49.7	Arc	3102.222	235025.598	3089612.527	3162.383	235071.839	3089592.042	60.161		Right	25	30	7.00%
						Transition	3162.383	235071.839	3089592.042	3182.383	235070.423	3089572.191	20.000					
						Straight	3182.383	235070.423	3089572.191	3186.820	235069.618	3089567.828	4.437	190 26 31.7				
						Transition	3186.820	235069.618	3089567.828	3211.820	235066.233	3089543.080	25.000					
27	235059.676	3089513.879	309	43	34.1	Arc	3211.820	235066.233	3089543.080	3265.790	235079.719	3089491.654	53.970		Left	40	-90	7.00%
						Transition	3265.790	235079.719	3089491.654	3290.790	235094.814	3089471.752	25.000					
						Straight	3290.790	235094.814	3089471.752	3292.437	235095.869	3089470.487	1.647	140 10 5.8				
						Transition	3292.437	235095.869	3089470.487	3312.437	235108.245	3089454.783	20.000					
28	235111.312	3089451.973	13	23	54.7	Arc	3312.437	235108.245	3089454.783	3320.499	235112.650	3089448.034	8.062		Right	40	120	5.93%
						Transition	3320.499	235112.650	3089448.034	3340.499	235122.044	3089430.384	20.000					
						Straight	3340.499	235122.044	3089430.384	3359.788	235130.631	3089413.112	19.289	153 34 0.4				
						Transition	3359.788	235130.631	3089413.112	3374.788	235137.139	3089399.599	15.000					
29	235137.838	3089398.614	4	58	31.3	Arc	3374.788	235137.139	3089399.599	3377.155	235138.100	3089397.435	2.367		Right	40	200	3.56%
						Transition	3377.155	235138.100	3089397.435	3392.155	235143.761	3089383.545	15.000					
						Straight	3392.155	235143.761	3089383.545	3434.771	235159.351	3089343.883	42.616	158 32 31.7				
						Transition	3434.771	235159.351	3089343.883	3449.771	235165.330	3089330.134	15.000					
30	235165.973	3089327.035	342	48	7.9	Arc	3449.771	235165.330	3089330.134	3455.783	235168.340	3089324.933	6.012		Left	30	-70	5.71%
						Transition	3455.783	235168.340	3089324.933	3470.783	235177.280	3089312.899	15.000					
						Straight	3470.783	235177.280	3089312.899	3472.953	235178.636	3089311.204	2.170	141 20 39.6				
						Transition	3472.953	235178.636	3089311.204	3487.953	235187.631	3089299.208	15.000					
31	235188.997	3089298.251	12	56	40	Arc	3487.953	235187.631	3089299.208	3491.026	235189.269	3089296.607	3.073		Right	30	80	5.00%
						Transition	3491.026	235189.269	3089296.607	3506.026	235196.192	3089283.307	15.000					
						Straight	3506.026	235196.192	3089283.307	3524.030	235204.003	3089267.086	18.004	154 17 19.6				
						Transition	3524.030	235204.003	3089267.086	3554.030	235220.787	3089242.552	30.000					
32	235222.536	3089228.597	281	37	33.1	Arc	3554.030	235220.787	3089242.552	3569.170	235234.377	3089236.186	15.140		Left	30	-33	7.00%
						Transition	3569.170	235234.377	3089236.186	3599.170	235263.970	3089238.993	30.000					
						Straight	3599.170	235263.970	3089238.993	3644.473	235307.911	3089250.019	45.303	75 54 52.7				
						Transition	3644.473	235307.911	3089250.019	3669.473	235331.784	3089257.349	25.000					
33	235340.775	3089258.264	330	10	28	Arc	3669.473	235331.784	3089257.349	3686.118	235346.316	3089265.403	16.645		Left	40	-80	7.00%
						Transition	3686.118	235346.316	3089265.403	3711.118	235365.184	3089281.763	25.000					
						Straight	3711.118	235365.184	3089281.763	3728.988	235378.058	3089294.156	17.870	46 5 20.7				
						Transition	3728.988	235378.058	3089294.156	3753.988	235398.256	3089308.510	25.000					
34	235417.55	3089332.175	111	24	4.9	Arc	3753.988	235398.256	3089308.510	3783.429	235425.767	3089302.768	29.441		Right	25	28	7.00%
						Transition	3783.429	235425.767	3089302.768	3808.429	235438.537	3089281.533	25.000					
						Straight	3808.429	235438.537	3089281.533	3811.137	235439.574	3089279.030	2.708	157 29 25.6				
						Transition	3811.137	235439.574	3089279.030	3836.137	235451.388	3089257.115	25.000					
35	235452.766	3089247.196	304	17	46.5	Arc	3836.137	235451.388	3089257.115	3850.998	235462.769	3089247.687	14.861		Left	30	-41	7.00%
						Transition	3850.998	235462.769	3089247.687	3875.998	235486.500	3089240.156	25.000					
						Straight	3875.998	235486.500	3089240.156	3917.825	235527.445	3089231.613	41.827	101 47 12.1				
						Transition	3917.825	235527.445	3089231.613	3947.825	235557.141	3089229.737	30.000					
36	235570.142	3089222.703	282	57	27.2	Arc	3947.825	235557.141	3089229.737	3964.887	235572.229	3089237.337	17.062		Left	30	-35	7.00%
						Transition	3964.887	235572.229	3089237.337	3994.887	235588.399	3089262.316	30.000					
						Straight	3994.887	235588.399	3089262.316	4036.298	235605.732	3089299.924	41.411	24 44 39.3				
						Transition	4036.298	235605.732	3089299.924	4056.298	235615.156	3089317.533	20.000					
37	235666.986	3089432.828	135	7	47.9	Arc	4056.298	235615.156	3089317.533	4168.372	235709.364	3089313.734	112.074		Right	30	56	7.00%
						Transition	4168.372	235709.364	3089313.734	4188.372	235717.339	3089295.423	20.000					
						Straight	4188.372	235717.339	3089295.423	4234.328	235733.151	3089252.273	45.956	159 52 27.2				
						Transition	4234.328	235733.151	3089252.273	4254.328	235741.254	3089234.027	20.000					
38	235746.275	3089216.463	301	33	38.4	Arc	4254.328	235741.254	3089234.027	4285.326	235764.396	3089214.154	30.998		Left	30	-50	7.00%
						Transition	4285.326	235764.396	3089214.154	4305.326	235783.657	3089208.901	20.000					
						Straight	4305.326	235783.657	3089208.901	4379.795	235856.648	3089194.138	74.469	101 26 5.6				
						Transition	4379.795	235856.648	3089194.138	4394.795	235871.227	3089190.642	15.000					
39	235877.467	3089189.927	22	10	28.1	Arc	4394.795	235871.227	3089190.642	4406.886	235882.383	3089186.017	12.091		Right	30	70	5.71%
						Transition	4406.886	235882.383	3089186.017	4421.886	235895.157	3089178.169	15.000					
						Straight	4421.886	235895.157	3089178.169	4433.390	235904.738	3089171.802	11.504	123 36 33.7				
						Transition	4433.390	235904.738	3089171.802	4448.390	235917.452	3089163.851	15.000					

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Dir.
Managing Director

SUVADRA CONSULTANTS Regd. No- 117/2004-05

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : Glabal Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Purl, Boring Road, Patna-800001

Design Consultant : SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018.
Website : www.spstpl.com
Email : info@spstpl.com

Project: DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE – BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP. -2022

Title: HORIZONTAL ALIGNMENT REPORT
Scale: AS SHOWN
Rev: R4
Drg. No: VLE/DE-BR/HW/GEN/HOR/01

HORIZONTAL ALIGNMENT REPORT

HIP / Curve No.	HIP		Deflection Angle			Element	Start			End			Length (m)	Bearing (dd mm ss)	Hand of Arc	Design Speed (KM/H)	Radius (m)	Superelevation (%)
	Easting (m)	Northing (m)	Deg	Min	Sec		Chainage (m)	Easting (m)	Northing (m)	Chainage (m)	Easting (m)	Northing (m)						
40	235921.428	3089160.709	344	9	5.6	Arc	4448.390	235917.452	3089163.851	4458.285	235926.365	3089159.596	9.895		Left	30	-90	4.44%
						Transition	4458.285	235926.365	3089159.565	4473.285	235940.513	3089154.596	15.000					
						Straight	4473.285	235940.513	3089154.596	4508.864	235974.396	3089143.742	35.579	107 45 39.3				
						Transition	4508.864	235974.396	3089143.742	4528.864	235993.724	3089138.697	20.000					
41	236004.743	3089134.022	320	42	23.9	Arc	4528.864	235993.724	3089138.697	4550.697	236015.430	3089139.411	21.833		Left	30	-61	6.56%
						Transition	4550.697	236015.430	3089139.411	4570.697	236034.384	3089145.718	20.000					
						Straight	4570.697	236034.384	3089145.718	4689.983	236145.345	3089189.499	119.286	68 28 3.2				
						Transition	4689.983	236145.345	3089189.499	4704.983	236159.479	3089194.500	15.000					
42	236168.691	3089198.71	28	10	34.2	Arc	4704.983	236159.479	3089194.500	4724.407	236178.677	3089197.008	19.424		Right	30	70	5.71%
						Transition	4724.407	236178.677	3089197.008	4739.407	236193.621	3089195.807	15.000					
						Straight	4739.407	236193.621	3089195.807	4833.917	236287.496	3089184.872	94.510	96 38 37.4				
						Transition	4833.917	236287.496	3089184.872	4848.917	236302.440	3089183.671	15.000					
43	236313.227	3089181.875	330	35	15.2	Arc	4848.917	236302.440	3089183.671	4869.851	236323.090	3089186.596	20.934		Left	30	-70	5.71%
						Transition	4869.851	236323.090	3089186.596	4884.851	236337.113	3089191.901	15.000					
						Straight	4884.851	236337.113	3089191.901	4924.275	236373.465	3089207.158	39.424	67 13 52.6				
						Transition	4924.275	236373.465	3089207.158	4954.275	236402.345	3089213.953	30.000					
44	236405.258	3089220.502	64	13	11.9	Arc	4954.275	236402.345	3089213.953	4957.901	236405.920	3089213.365	3.626		Right	30	30	7.00%
						Transition	4957.901	236405.920	3089213.365	4987.901	236431.101	3089197.678	30.000					
						Straight	4987.901	236431.101	3089197.678	4994.872	236436.326	3089193.063	6.971	131 27 4.5				
						Transition	4994.872	236436.326	3089193.063	5009.872	236447.869	3089183.493	15.000					
45	236483.848	3089151.091	290	11	8.1	Arc	5009.872	236447.869	3089183.493	5092.351	236526.230	3089174.504	82.479		Left	30	-80	5.00%
						Transition	5092.351	236526.230	3089174.504	5107.351	236539.640	3089181.211	15.000					
						Straight	5107.351	236539.640	3089181.211	5139.962	236568.336	3089196.703	32.611	61 38 12.6				
						Transition	5139.962	236568.336	3089196.703	5154.962	236581.925	3089203.002	15.000					
46	236585.569	3089206.007	32	41	34.5	Arc	5154.962	236581.925	3089203.002	5163.357	236590.121	3089204.747	8.395		Right	20	41	4.34%
						Transition	5163.357	236590.121	3089204.747	5178.357	236605.097	3089204.528	15.000					
						Straight	5178.357	236605.097	3089204.528	5212.609	236639.252	3089201.942	34.252	94 19 47.1				
						Transition	5212.609	236639.252	3089201.942	5227.609	236654.104	3089199.984	15.000					
47	236654.682	3089200.774	20	1	26.2	Arc	5227.609	236654.104	3089199.984	5228.336	236654.809	3089199.804	0.727		Right	30	45	7.00%
						Transition	5228.336	236654.809	3089199.804	5243.336	236668.779	3089194.393	15.000					
						Straight	5243.336	236668.779	3089194.393	5266.325	236689.722	3089184.913	22.989	114 21 13.3				
						Transition	5266.325	236689.722	3089184.913	5286.325	236708.344	3089177.681	20.000					
48	236714.744	3089173.587	328	9	51.8	Arc	5286.325	236708.344	3089177.681	5300.219	236722.058	3089175.648	13.894		Left	40	-61	7.00%
						Transition	5300.219	236722.058	3089175.648	5320.219	236741.976	3089177.163	20.000					
						Straight	5320.219	236741.976	3089177.163	5455.052	236875.661	3089194.720	134.833	82 31 5.1				
						Transition	5455.052	236875.661	3089194.720	5581.995	236998.828	3089172.534	15.000					
49	237004.913	3089167.338	308	54	18.9	Arc	5581.995	236998.828	3089172.534	5593.557	237010.331	3089173.225	11.562		Left	30	-41	7.00%
						Transition	5593.557	237010.331	3089173.225	5618.557	237033.220	3089183.021	25.000					
						Straight	5618.557	237033.220	3089183.021	5628.857	237042.229	3089188.012	10.300	112 6 25.5				
						Transition	5628.857	237042.229	3089188.012	5643.857	237055.872	3089194.148	15.000					
50	237063.135	3089199.595	56	52	33.5	Arc	5643.857	237055.872	3089194.148	5658.637	237070.502	3089194.288	14.780		Right	20	30	5.93%
						Transition	5658.637	237070.502	3089194.288	5673.637	237084.260	3089188.416	15.000					
						Straight	5673.637	237084.260	3089188.416	5675.858	237086.223	3089187.377	2.221	61 0 44.4				
						Transition	5675.858	237086.223	3089187.377	5690.858	237099.716	3089180.842	15.000					
51	237106.988	3089176.387	334	18	6.9	Arc	5690.858	237099.716	3089180.842	5707.254	237115.514	3089176.597	16.396		Left	30	-70	5.71%
						Transition	5707.254	237115.514	3089176.597	5722.254	237130.465	3089175.489	15.000					
						Straight	5722.254	237130.465	3089175.489	5813.206	237221.350	3089172.013	90.952	117 53 17.9				
						Transition	5813.206	237221.350	3089172.013	5833.206	237241.155	3089169.636	20.000					
52	237261.991	3089170.459	73	5	31.7	Arc	5833.206	237241.155	3089169.636	5865.509	237265.706	3089149.941	32.303		Right	30	41	7.00%
						Transition	5865.509	237265.706	3089149.941	5885.509	237272.323	3089131.123	20.000					
						Straight	5885.509	237272.323	3089131.123	5959.562	237291.137	3089059.501	74.053	92 11 24.8				
						Transition	5959.562	237291.137	3089059.501	5974.562	237294.667	3089044.924	15.000					
53	237295.473	3089042.993	8	24	51.6	Arc	5974.562	237294.667	3089044.924	5978.653	237295.414	3089040.902	4.091		Right	40	130	5.47%
						Transition	5978.653	237295.414	3089040.902	5993.653	237297.347	3089026.029	15.000					
						Straight	5993.653	237297.347	3089026.029	6017.972	237300.017	3089001.857	24.319	165 16 56.5				
						Transition	6017.972	237300.017	3089001.857	6032.972	237302.565	3088987.098	15.000					
54	237303.793	3088967.669	293	44	46.7	Arc	6032.972	237302.565	3088987.098	6065.382	237322.618	3088962.711	32.410		Left	20	-41	4.34%
						Transition	6065.382	237322.618	3088962.711	6080.382	237336.607	3088957.359	15.000					
						Straight	6080.382	237336.607	3088957.359	6106.286	237361.320	3088949.594	25.904	173 41 48.1				
						Transition	6106.286	237361.320	3088949.594	6131.286	237385.808	3088946.190	25.000					
55	237392.529	3088939.788	284	3	35.3	Arc	6131.286	237385.808	3088946.190	6139.421	237393.393	3088949.030	8.135		Left	25	-25	7.00%
						Transition	6139.421	237393.393	3088949.030	6164.421	237409.623	3088967.680	25.000					
						Straight	6164.421	237409.623	3088967.680	6174.314	237414.792	3088976.115	9.893	107 26 34.9				
						Transition	6174.314	237414.792	3088976.115	6199.314	237431.023	3088994.765	25.000					
56	237432.643	3089005.241	79	47	36.4	Arc	6199.314	237431.023	3088994.765	6209.131	237440.267	3088997.876	9.817		Right	25	25	7.00%
						Transition	6209.131	237440.267	3088997.876	6234.131	237464.471	3088992.834	25.000					
						Straight	6234.131	237464.471	3088992.834	6266.439	237494.573	3088981.100	32.308	31 30 10.2				
						Transition	6266.439	237494.573	3088981.100	6281.439	237508.338	3088975.159	15.000					
57	237512.501	3088974.111	19	0	46.8	Arc	6281.439	237508.338	3088975.159	6289.668	237515.402	3088970.948	8.229		Right	30	70	5.71%
						Transition	6289.668	237515.402	3088970.948	6304.668	237527.174	3088961.664	15.000					
						Straight	6304.668	237527.174	3088961.664	6326.995	237544.200	3088947.220	22.327	111 17 46.6				
						Transition	6326.995	237544.200	3088947.220	6341.995	237555.279	3088937.119	15.000					
58	237560.329	3088933.537	22	2	0.8	Arc	6341.995	237555.279	3088937.119	6353.914	237562.718	3088927.825	11.919		Right	30	70	5.71%
						Transition	6353.914	237562.718	3088927.825	6368.914	237570.147	3088914.802	15.000					
						Straight	6368.914	237570.147	3088914.802	6503.302	237632.527	3088795.770	134.388	130 18 33.4				
						Transition	6503.302	237632.527	3088795.770	6518.302	237639.709	3088782.603	15.000					
59	237647.113	3088767.936	341	52	57.5	Arc	6518.302	237639.709	3088782.603	6550.733	237659.060	3088756.656	32.431		Left	40	-150	4.74%
						Transition	6550.733	237659.060	3088756.656	6565.733	237669.632	3088746.018	15.000					

HIP / Curve No.	HIP		Deflection Angle			Element	Start			End			Length (m)	Bearing (dd mm ss)	Hand of Arc	Design Speed (KM/H)	Radius (m)	Superelevation (%)
	Easting (m)	Northing (m)	Deg	Min	Sec		Chainage (m)	Easting (m)	Northing (m)	Chainage (m)	Easting (m)	Northing (m)						
						Straight	6565.733	237669.632	3088746.018	6692.783	237760.676	3088657.402	127.050	152 20 34.2				
						Transition	6692.783	237760.676	3088657.402	6707.783	237771.248	3088646.763	15.000					
60	237776.305	3088642.19	10	53	41.2	Arc	6707.783	237771.248	3088646.763	6721.306	237779.996	3088636.458	13.523		Right	40	150	4.74%
						Transition	6721.306	237779.996	3088636.458	6736.306	237788.777	3088624.299	15.000					
						Straight	6736.306	237788.777	3088624.299	6740.261	237791.039	3088621.054	3.955	134 13 31.7				
						Transition	6740.261	237791.039	3088621.054	6775.261	237818.622	3088603.070	35.000					
61	237753.713	3088674.6	154	55	5.9	Arc	6775.261	237818.622	3088603.070	6793.951	237830.466	3088615.959	18.690		Left	20	-15	7.00%
						Transition	6793.951	237830.466	3088615.959	6828.951	237810.218	3088641.926	35.000					
						Straight	6828.951	237810.218	3088641.926	6840.262	237800.427	3088647.588	11.311	145 7 12.9				
						Transition	6840.262	237800.427	3088647.588	6855.262	237787.724	3088655.552	15.000					
62	237780.98	3088658.833	24	5	36.6	Arc	6855.262	237787.724	3088655.552	6869.698	237777.030	3088665.210	14.436		Right	30	70	5.71%
						Transition	6869.698	237777.030	3088665.210	6884.698	237767.817	3088677.038	15.000					
						Straight	6884.698	237767.817	3088677.038	7059.742	237665.255	3088818.889	175.044	300 2 18.8				
						Transition	7059.742	237665.255	3088818.889	7074.742	237656.911	3088831.344	15.000					
63	237650.829	3088838.841	27	26	30.9	Arc	7074.742	237656.911	3088831.344	7093.269	237649.947	3088848.454	18.527		Right	30	70	5.71%
						Transition	7093.269	237649.947	3088848.454	7108.269	237647.222	3088863.196	15.000					
						Straight	7108.269	237647.222	3088863.196	7212.693	237631.920	3088966.493	104.424	324 7 55.5				
						Transition	7212.693	237631.920	3088966.493	7227.693	237629.195	3088981.236	15.000					
64	237625.983	3089006.572	309	34	38.7	Arc	7227.693	237629.195	3088981.236	7274.296	237603.855	3089019.323	46.603		Left	30	-70	5.71%
						Transition	7274.296	237603.855	3089019.323	7289.296	237591.309	3089027.531	15.000					
						Straight	7289.296	237591.309	3089027.531	7454.211	237450.174	3089112.843	164.915	351 34 26.4				
						Transition	7454.211	237450.174	3089112.843	7469.211	237437.106	3089120.194	15.000					
65	237436.428	3089121.151	347	47	52.5	Arc	7469.211	237437.106	3089120.194	7471.249	237435.260	3089121.057	2.038		Left	30	-80	5.00%
						Transition	7471.249	237435.260	3089121.057	7486.249	237421.237	3089126.367	15.000					
						Straight	7486.249	237421.237	3089126.367	7496.776	237411.281	3089129.785	10.527	301 9 5.1				
						Transition	7496.776	237411.281	3089129.785	7531.776	237386.417	3089151.373	35.000					
66	237499.151	3089099.616	198	53	34.3	Arc	7531.776	237386.417	3089151.373	7548.846	237394.103	3089165.592	17.070		Right	20	15	7.00%
						Transition	7548.846	237394.103	3089165.592	7583.846	237425.784	3089156.612	35.000					
						Straight	7583.846	237425.784	3089156.612	7631.258	237463.225	3089127.525	47.412	288 56 57.5				
67	237482.634	3089112.448	351	12	58.8	Arc	7631.258	237463.225	3089127.525	7680.315	237504.117	3089100.510	49.057		Left	40	-320	2.50%
						Straight	7680.315	237504.117	3089100.510	7704.477	237525.237	3089088.775	24.162					
						Transition	7704.477	237525.237	3089088.775	7719.477	237538.594	3089081.966	15.000					
68	237548.451	3089075.876	329	35	34.6	Arc	7719.477	237538.594	3089081.966	7741.627	237560.009	3089076.684	22.150	127 50 31.8	Left	30	-70	5.71%
						Transition	7741.627	237560.009	3089076.684	7756.627	237575.001	3089076.501	15.000					
						Straight	7756.627	237575.001	3089076.501	7770.362	237588.733	3089076.825	13.735	119 3 30.6				
						Transition	7770.362	237588.733	3089076.825	7785.362	237603.731	3089076.928	15.000					
69	237615.139	3089077.446	14	22	3.3	Arc	7785.362	237603.731	3089076.928	7807.977	237626.206	3089074.631	22.615		Right	40	150	4.74%
						Transition	7807.977	237626.206	3089074.631	7822.977	237640.873	3089071.496	15.000					
						Straight	7822.977	237640.873	3089071.496	7831.669	237649.343	3089069.538	8.692	88 39 5.2				
						Transition	7831.669	237649.343	3089069.538	7851.669	237668.451	3089063.755	20.000					
70	237690.689	3089059.978	65	37	16.3	Arc	7851.669	237668.451	3089063.755	7888.935	237693.821	3089037.640	37.266		Right	30	50	7.00%
						Transition	7888.935	237693.821	3089037.640	7908.935	237699.048	3089018.372	20.000					
						Straight	7908.935	237699.048	3089018.372	8003.830	237717.739	3088925.335	94.895	103 1 8.5				
						Transition	8003.830	237717.739	3088925.335	8033.830	237728.318	3088897.617	30.000					
71	237728.365	3088872.445	257	17	13.6	Arc	8033.830	237728.318	3088897.617	8057.610	237748.903	3088887.000	23.780		Left	30	-30	7.00%
						Transition	8057.610	237748.903	3088887.000	8087.610	237777.621	3088894.450	30.000					
						Straight	8087.610	237777.621	3088894.450	8094.142	237783.584	3088897.114	6.532	168 38 24.8				
						Transition	8094.142	237783.584	3088897.114	8114.142	237802.314	3088904.025	20.000					
72	237810.711	3088909.233	42	47	49	Arc	8114.142	237802.314	3088904.025	8131.489	237819.556	3088904.831	17.347		Right	30	50	7.00%
						Transition	8131.489	237819.556	3088904.831	8151.489	237838.848	3088899.695	20.000					
						Straight	8151.489	237838.848	3088899.695	8237.153	237919.978	3088872.196	85.664	65 55 38.4				
						Transition	8237.153	237919.978	3088872.196	8267.153	237946.112	3088858.152	30.000					
73	237951.472	3088861.521	60	56	12.2	Arc	8267.153	237946.112	3088858.152	8269.059	237947.357	3088856.709	1.906		Right	20	30	5.93%
						Transition	8269.059	237947.357	3088856.709	8299.059	237957.440	3088828.807	30.000					
						Straight	8299.059	237957.440	3088828.807	8499.826	237993.472	3088631.300	200.767	108 43 27.4				
						Transition	8499.826	237993.472	3088631.300	8534.826	238011.094	3088603.484	35.000					
74	237970.247	3088758.606	165	46	11.5	Arc	8534.826	238011.094	3088603.484	8550.675	238025.520	3088608.020	15.849		Left	20	-15	7.00%
						Transition	8550.675	238025.520	3088608.020	8585.675	238024.053	3088640.916	35.000					
						Straight	8585.675	238024.053	3088640.916	8600.271	238017.985	3088654.190	14.596	169 39 39.6				
						Transition	8600.271	238017.985	3088654.190	8615.271	238012.242	3088668.038	15.000					
75	238010.175	3088671.272	18	16	57.8	Arc	8615.271	238012.242	3088668.038	8622.607	238010.291	3088675.107	7.336		Right	30	70	5.71%
						Transition	8622.607	238010.291	3088675.107	8637.607	238008.118	3088689.941	15.000					
						Straight	8637.607	238008.118	3088689.941	8778.005	237992.745	3088829.495	140.398	335 25 51.1				
						Transition	8778.005	237992.745	3088829.495	8793.005	237990.690	3088844.349	15.000					
76	237990.916	3088846.094	348	20	18.1	Arc	8793.005	237990.690	3088844.349	8796.323	237989.993	3088847.593	3.318		Left	30	-90	4.44%
						Transition	8796.323	237989.993	3088847.593	8811.323	237985.770	3088861.981	15.000					
						Straight	8811.323	237985.770	3088861.981	8856.380	237971.886	3088904.845	45.057	353 42 48.9				
						Transition	8856.380	237971.886	3088904.845	8871.380	237966.760	3088918.934	15.000					
77	237963.348	3088931.204	327	50	58	Arc	8871.380	237966.760	3088918.934	8895.659	237953.243	3088938.956	24.279		Left	30	-70	5.71%
						Transition	8895.659	237953.243	3088938.956	8910.659	237942.092	3088948.978	15.000					
						Straight	8910.659	237942.092	3088948.978	8968.069	237898.050	3088985.804	57.410	342 3 7				
						Transition	8968.069	237898.050	3088985.804	8983.069	237886.347	3088995.183	15.000					
78	237881.853	3088999.348	347	3	47	Arc	8983.069	237886.347	3088995.183	8995.164	237876.257	3089001.844	12.095		Left	30	-120	3.33%
						Transition	8995.164	237876.257	3089001.844	9010.164	237863.035	3089008.921	15.000					
						Straight	9010.164	237863.035	3089008.921	9063.760	237815.266	3089033.224	53.596	309 54 5				
						Transition	9063.760	237815.266	3089033.224	9078.760	237802.154	3089040.495	15.000					
79	237779.116	3089051.615	50	28	43.5	Arc	9078.760	237802.154	3089040.495	9125.431	237774.078	3089076.695	46.671		Right	30	70	5.71%
						Transition	9125.431	237774.078	3089076.695	9140.431	237770.298	3089091.203	15.000					

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS Regd. No-111/2004-05 BHUBANESWAR

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : Global Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS
(An ISO 9001 : 2008 Certified)
(Govt. Testing Laboratory & Engineering Consultancy approved by Govt. of Orissa Regd. No. 11 of 2004-05)
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Purl, Boring Road, Patna-800001

Design Consultant : SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018.
Website : www.spstpl.com
Email : info@spstpl.com

Project: DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE – BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP. -2022

Title: HORIZONTAL ALIGNMENT REPORT
Scale: AS SHOWN
Rev: R4
Drg. No: VLE/DE-BR/HW/GEN/HOR/02

HORIZONTAL ALIGNMENT REPORT

HIP / Curve No.	HIP		Deflection Angle			Element	Start			End			Length (m)	Bearing (dd mm ss)	Hand of Arc	Design Speed (KM/H)	Radius (m)	Superelevation (%)
	Easting (m)	Northing (m)	Deg	Min	Sec		Chainage (m)	Easting (m)	Northing (m)	Chainage (m)	Easting (m)	Northing (m)						
						Straight	9140.431	237770.298	3089091.203	9166.607	237764.608	3089116.752	26.176	296 57 52				
						Transition	9166.607	237764.608	3089116.752	9186.607	237758.979	3089135.907	20.000					
80	237751.516	3089175.528	270	7	4.5	Arc	9186.607	237758.979	3089135.907	9245.043	237712.453	3089165.550	58.436		Left	30	-50	7.00%
						Transition	9245.043	237712.453	3089165.550	9265.043	237692.714	3089162.557	20.000					
						Straight	9265.043	237692.714	3089162.557	9269.288	237688.569	3089161.643	4.245	347 26 35.6				
						Transition	9269.288	237688.569	3089161.643	9289.288	237668.830	3089158.651	20.000					
81	237660.89	3089155.538	40	4	29	Arc	9289.288	237668.830	3089158.651	9304.260	237654.045	3089160.623	14.972		Right	30	50	7.00%
						Transition	9304.260	237654.045	3089160.623	9324.260	237635.780	3089168.685	20.000					
						Straight	9324.260	237635.780	3089168.685	9368.812	237596.312	3089189.350	44.552	257 33 40				
						Transition	9368.812	237596.312	3089189.350	9403.812	237574.993	3089214.446	35.000					
82	237714.103	3089127.677	193	53	44.7	Arc	9403.812	237574.993	3089214.446	9419.574	237583.534	3089226.834	15.762		Right	20	15	7.00%
						Transition	9419.574	237583.534	3089226.834	9454.574	237614.570	3089215.834	35.000					
						Straight	9454.574	237614.570	3089215.834	9477.506	237631.737	3089200.629	22.932	297 38 9.1				
						Transition	9477.506	237631.737	3089200.629	9497.506	237647.392	3089188.220	20.000					
83	237662.573	3089173.318	306	1	46.1	Arc	9497.506	237647.392	3089188.220	9534.966	237683.084	3089178.959	37.460		Left	30	-61	6.56%
						Transition	9534.966	237683.084	3089178.959	9554.966	237702.797	3089182.190	20.000					
						Straight	9554.966	237702.797	3089182.190	9558.177	237705.932	3089182.882	3.211	131 31 53.8				
						Transition	9558.177	237705.932	3089182.882	9578.177	237725.645	3089186.113	20.000					
84	237777.046	3089198.568	91	26	22.7	Arc	9578.177	237725.645	3089186.113	9655.528	237786.064	3089146.454	77.351		Right	30	61	6.56%
						Transition	9655.528	237786.064	3089146.454	9675.528	237790.941	3089127.082	20.000					
						Straight	9675.528	237790.941	3089127.082	9686.327	237793.001	3089116.481	10.799	77 33 39.9				
						Transition	9686.327	237793.001	3089116.481	9706.327	237798.384	3089097.274	20.000					
85	237800.455	3089078.129	289	49	14	Arc	9706.327	237798.384	3089097.274	9736.547	237819.665	3089076.787	30.220		Left	30	-41	7.00%
						Transition	9736.547	237819.665	3089076.787	9756.547	237839.063	3089072.138	20.000					
						Straight	9756.547	237839.063	3089072.138	9849.993	237931.403	3089057.808	93.446	169 0 2.6				
						Transition	9849.993	237931.403	3089057.808	9864.993	237946.127	3089054.981	15.000					
86	237964.164	3089052.724	40	11	11.1	Arc	9864.993	237946.127	3089054.981	9899.089	237975.679	3089038.658	34.096		Right	30	70	5.71%
						Transition	9899.089	237975.679	3089038.658	9914.089	237985.911	3089027.700	15.000					
						Straight	9914.089	237985.911	3089027.700	10008.070	238047.559	3088956.763	93.981	98 49 16.6				
						Transition	10008.070	238047.559	3088956.763	10023.070	238057.036	3088945.144	15.000					
87	238064.395	3088937.39	25	33	16.1	Arc	10023.070	238057.036	3088945.144	10043.751	238066.786	3088926.971	20.681		Right	30	80	5.00%
						Transition	10043.751	238066.786	3088926.971	10058.751	238071.227	3088912.650	15.000					
						Straight	10058.751	238071.227	3088912.650	10077.627	238076.252	3088894.455	18.876	139 0 27.7				
						Transition	10077.627	238076.252	3088894.455	10097.627	238082.613	3088875.519	20.000					
88	238083.947	3088866.588	325	40	52.2	Arc	10097.627	238082.613	3088875.519	10114.164	238091.495	3088861.629	16.537		Left	30	-61	6.56%
						Transition	10114.164	238091.495	3088861.629	10134.164	238106.015	3088847.911	20.000					
						Straight	10134.164	238106.015	3088847.911	10150.406	238118.412	3088837.418	16.242	164 33 43.8				
						Transition	10150.406	238118.412	3088837.418	10185.406	238149.688	3088827.119	35.000					
89	238048.973	3088896.189	160	46	28	Arc	10185.406	238149.688	3088827.119	10202.563	238157.961	3088841.090	17.157		Left	20	-15	7.00%
						Transition	10202.563	238157.961	3088841.090	10237.563	238133.892	3088863.561	35.000					
						Straight	10237.563	238133.892	3088863.561	10241.060	238130.627	3088864.816	3.497	130 14 36.1				
						Transition	10241.060	238130.627	3088864.816	10261.060	238112.649	3088873.458	20.000					
90	238098.894	3088877.008	60	13	34	Arc	10261.060	238112.649	3088873.458	10284.157	238098.346	3088891.204	23.097		Right	30	41	7.00%
						Transition	10284.157	238098.346	3088891.204	10304.157	238093.719	3088910.607	20.000					
						Straight	10304.157	238093.719	3088910.607	10345.083	238087.489	3088951.056	40.926	291 1 4				
						Transition	10345.083	238087.489	3088951.056	10360.083	238084.679	3088965.783	15.000					
91	238083.629	3088976.118	331	25	31.5	Arc	10360.083	238084.679	3088965.783	10379.994	238076.912	3088984.043	19.911		Left	30	-70	5.71%
						Transition	10379.994	238076.912	3088984.043	10394.994	238068.252	3088996.281	15.000					
						Straight	10394.994	238068.252	3088996.281	10491.891	238009.492	3089073.329	96.897	351 14 38.1				
						Transition	10491.891	238009.492	3089073.329	10506.891	237999.980	3089084.918	15.000					
92	237992.424	3089095.709	327	11	24.6	Arc	10506.891	237999.980	3089084.918	10531.976	237979.863	3089099.677	25.085		Left	30	-70	5.71%
						Transition	10531.976	237979.863	3089099.677	10546.976	237965.953	3089105.270	15.000					
						Straight	10546.976	237965.953	3089105.270	10655.914	237863.494	3089142.278	108.938	322 40 9.6				
						Transition	10655.914	237863.494	3089142.278	10675.914	237845.345	3089150.554	20.000					
93	237833.33	3089153.173	56	9	45.7	Arc	10675.914	237845.345	3089150.554	10696.103	237831.957	3089165.393	20.189		Right	30	41	7.00%
						Transition	10696.103	237831.957	3089165.393	10716.103	237825.583	3089184.295	20.000					
						Straight	10716.103	237825.583	3089184.295	10718.311	237825.050	3089186.438	2.208	289 51 34.2				
						Transition	10718.311	237825.050	3089186.438	10733.311	237820.911	3089200.848	15.000					
94	237814.543	3089228.649	305	39	13.1	Arc	10733.311	237820.911	3089200.848	10784.708	237787.844	3089238.685	51.397		Left	30	-70	5.71%
						Transition	10784.708	237787.844	3089238.685	10799.708	237774.119	3089244.716	15.000					
						Straight	10799.708	237774.119	3089244.716	10800.355	237773.517	3089244.955	0.647	346 1 20				
						Transition	10800.355	237773.517	3089244.955	10820.355	237756.600	3089255.202	20.000					
95	237697.094	3089275.331	147	52	16.5	Arc	10820.355	237756.600	3089255.202	10851.972	237759.380	3089283.492	31.617		Right	20	20	7.00%
						Transition	10851.972	237759.380	3089283.492	10871.972	237777.968	3089290.251	20.000					
						Straight	10871.972	237777.968	3089290.251	11018.028	237921.600	3089316.750	146.056	291 40 33.1				
						Transition	11018.028	237921.600	3089316.750	11033.028	237936.302	3089319.716	15.000					
96	237940.707	3089320.275	350	54	31.8	Arc	11033.028	237936.302	3089319.716	11041.829	237944.802	3089321.993	8.801		Left	30	-150	2.67%
						Transition	11041.829	237944.802	3089321.993	11056.829	237959.018	3089326.774	15.000					
						Straight	11056.829	237959.018	3089326.774	11157.748	238054.122	3089360.535	100.919	79 32 49.5				
						Transition	11157.748	238054.122	3089360.535	11172.748	238068.338	3089365.316	15.000					
97	238084.001	3089371.141	18	19	35.4	Arc	11172.748	238068.338	3089365.316	11205.726	238100.711	3089371.247	32.978		Right	30	150	2.67%
						Transition	11205.726	238100.711	3089371.247	11220.726	238115.699	3089371.815	15.000					
						Straight	11220.726	238115.699	3089371.815	11527.032	238421.935	3089378.324	306.306	70 27 21.4				
						Transition	11527.032	238421.935	3089378.324	11542.032	238436.922	3089378.028	15.000					
98	238477.233	3089379.499	76	2	28.7	Arc	11542.032	238436.922	3089378.028	11607.989	238487.199	3089340.412	65.957		Right	30	61	6.56%
						Transition	11607.989	238487.199	3089340.412	11622.989	238491.712	3089326.118	15.000					
						Straight	11622.989	238491.712	3089326.118	11734.248	238520.839	3089218.739	111.259	88 46 56.8				
						Transition	11734.248	238520.839	3089218.739	11749.248	238525.006	3089204.331	15.000					

HIP / Curve No.	HIP		Deflection Angle			Element	Start			End			Length (m)	Bearing (dd mm ss)	Hand of Arc	Design Speed (KM/H)	Radius (m)	Superelevation (%)
	Easting (m)	Northing (m)	Deg	Min	Sec		Chainage (m)	Easting (m)	Northing (m)	Chainage (m)	Easting (m)	Northing (m)						
99	238527.258	3089195.071	347	3	21.1	Arc	11749.248	238525.006	3089204.331	11768.136	238531.969	3089186.787	18.888		Left	30	-150	2.67%
						Transition	11768.136	238531.969	3089186.787	11783.136	238538.817	3089173.443	15.000					
						Straight	11783.136	238538.817	3089173.443	11821.275	238556.793	3089139.806	38.139	164 49 25.4				
						Transition	11821.275	238556.793	3089139.806	11836.275	238564.221	3089126.780	15.000					
100	238566.341	3089121.939	344	3	12.2	Arc	11836.275	238564.221	3089126.780	11846.602	238570.301	3089118.439	10.327		Left	30	-91	4.40%
						Transition	11846.602	238570.301	3089118.439	11861.602	238580.431	3089107.382	15.000					
						Straight	11861.602	238580.431	3089107.382	11881.748	238594.442	3089092.907	20.146	151 52 46.5				
						Transition	11881.748	238594.442	3089092.907	11896.748	238604.572	3089081.850	15.000					
101	238616.194	3089070.435	29	15	18.1	Arc	11896.748	238604.572	3089081.850	11928.212	238619.960	3089054.585	31.464		Right	30	91	4.40%
						Transition	11928.212	238619.960	3089054.585	11943.212	238624.190	3089040.198	15.000					
						Straight	11943.212	238624.190	3089040.198	11970.890	238631.266	3089013.440	27.678	135 55 58.7				
						Transition	11970.890	238631.266	3089013.440	11985.890	238635.688	3088999.117	15.000					
102	238640.188	3088979.701	311	43	33.3	Arc	11985.890	238635.688	3088999.117	12022.285	238658.230	3088971.231	36.395		Left	30	-61	6.56%
						Transition	12022.285	238658.230	3088971.231	12037.285	238671.307	3088963.904	15.000					
						Straight	12037.285	238671.307	3088963.904	12050.671	238683.243	3088957.844	13.386	165 11 16.8				
						Transition	12050.671	238683.243	3088957.844	12065.671	238696.320	3088950.517	15.000					
103	238714.308	3088942.075	48	10	45.4	Arc	12065.671	238696.320	3088950.517	12101.965	238718.823	3088922.724	36.294		Right	30	61	6.56%
						Transition	12101.965	238718.823	3088922.724	12116.965	238723.270	3088908.409	15.000					
						Straight	12116.965	238723.270	3088908.409	12231.290	238752.679	3088797.932	114.325	116 54 50.1				
						Transition	12231.290	238752.679	3088797.932	12251.290	238759.608	3088779.247	20.000					
104	238705.128	3088976.557	159	18	24.3	Arc	12251.290	238759.608	3088779.247	12354.219	238822.744	3088809.029	102.929		Left	25	-35.095	7.00%
						Transition	12354.219	238822.744	3088809.029	12374.219	238812.732	3088826.259	20.000					
						Straight	12374.219	238812.732	3088826.259	12428.114	238781.358	3088870.080	53.895	165 5 35.5				
						Transition	12428.114	238781.358	3088870.080	12443.114	238773.072	3088882.574	15.000					
105	238765.154	3088892.715	32	20	46.3	Arc	12443.114	238773.072	3088882.574	12467.632	238764.958	3088905.579	24.518		Right	30	70	5.71%
						Transition	12467.632	238764.958	3088905.579	12482.632	238763.574	3088920.507	15.000					
						Straight	12482.632	238763.574	3088920.507	12500.619	238762.553	3088938.465	17.987	324 23 59.8				
						Transition	12500.619	238762.553	3088938.465	12515.619	238761.168	3088953.393	15.000					
106	238760.489	3088974.765	315	15	48.3	Arc	12515.619	238761.168	3088953.393	12555.275	238744.248	3088988.673	39.656		Left	30	-70	5.71%
						Transition	12555.275	238744.248	3088988.673	12570.275	238733.473	3088999.098	15.000					
						Straight	12570.275	238733.473	3088999.098	12589.890	238718.899	3089012.226	19.615	356 44 46.1				
107	238707.394	3089022.588	3	32	50.4	Arc	12589.890	238718.899	3089012.226	12620.846	238696.553	3089033.642	30.956		Right	50	500	2.50%
						Straight	12620.846	238696.553	3089033.642	12709.309	238634.611	3089096.800	88.463					
						Transition	12709.309	238634.611	3089096.800	12729.309	238623.291	3089113.018	20.000					
108	238793.636	3088934.653	190	2	32.8	Arc	12729.309	238623.291	3089113.018	12775.647	238651.600	3089136.290	46.338	312 0 34.4	Right	20	20	7.00%
						Transition	12775.647	238651.600	3089136.290	12795.647	238665.322	3089122.046	20.000					
						Straight	12795.647	238665.322	3089122.046	12868.010	238706.206	3089062.338	72.363	315 33 24.8				
						Transition	12868.010	238706.206	3089062.338	12883.010	238715.112	3089050.278	15.000					
109	238718.237	3089044.768	337	44	24.9	Arc	12883.010	238715.112	3089050.278	12895.205	238723.804	3089041.746	12.195		Left	30	-70	5.71%
						Transition	12895.205	238723.804	3089041.746	12910.205	238736.027	3089033.064	15.000					
						Straight	12910.205	238736.027	3089033.064	12943.939	238764.209	3089014.524	33.734	145 35 57.6				
						Transition	12943.939	238764.209	3089014.524	12958.939	238776.432	3089005.843	15.000					
110	238785.968	3089000.209	29	37	42.1	Arc	12958.939	238776.432	3089005.843	12980.137	238790.520	3088990.112	21.198		Right	30	70	5.71%
						Transition	12980.137	238790.520	3088990.112	12995.137	238797.806	3088977.009	15.000					
						Straight	12995.137	238797.806	3088977.009	13032.847	238814.945	3088943.418	37.710	123 20 22.5				
						Transition	13032.847	238814.945	3088943.418	13047.847	238822.077	3088930.226	15.000					
111	238828.901	3088916.066	335	5	35.8	Arc	13047.847	238822.077	3088930.226	13078.491	238841.494	3088906.659	30.644		Left	30	-105	3.81%
						Transition	13078.491	238841.494	3088906.659	13093.491	238853.078	3088897.135	15.000					
						Straight	13093.491	238853.078	3088897.135	13139.927	238889.639	3088868.507	46.436	152 58 4.6				
						Transition	13139.927	238889.639	3088868.507	13159.927	238904.504	3088855.180	20.000					
112	238912.212	3088850.833	40	43	41	Arc	13159.927	238904.504	3088855.180	13175.469	238912.609	3088841.992	15.542		Right	30	50	7.00%
						Transition	13175.469	238912.609	3088841.992	13195.469	238917.786	3088822.710	20.000					
						Straight	13195.469	238917.786	3088822.710	13267.578	238931.805	3088751.977	72.109	128 3 40.4				
						Transition	13267.578	238931.805	3088751.977	13287.578	238938.809	3088733.480	20.000					
113	238876.502	3089031.007	171	54	23.6	Arc	13287.578	238938.809	3088733.480	13333.235	238973.897	3088743.051	45.657		Left	20	-20	7.00%
						Transition	13333.235	238973.897	3088743.051	13353.235	238970.539	3088762.542	20.000					
						Straight	13353.235	238970.539	3088762.542	13456.932	238936.258	3088860.408	103.697	168 47 21.5				
						Transition	13456.932	238936.258	3088860.408	13476.932	238928.418	3088878.769	20.000					
114	238926.471	3088888.352	317	24	19	Arc	13476.932	238928.418	3088878.769	13494.102	238917.299	3088891.742	17.170		Left	30	-50	7.00%
						Transition	13494.102	238917.299	3088891.742	13514.102	238900.353	3088902.298	20.000					
						Straight	13514.102	238900.353	3088902.298	13517.778	238897.111	3088904.029	3.676	340 41 45.1				
						Transition	13517.778	238897.111	3088904.029	13537.778	238880.336	3088914.822	20.000					
115	238873.627	3088916.569	43	47	34.7	Arc	13537.778	238880.336	3088914.822	13549.115	238873.071	3088923.479	11.337		Right	30	41	7.00%
						Transition	13549.115	238873.071	3088923.479	13569.115	238865.354	3088941.873	20.000					
						Straight	13569.115	238865.354	3088941.873	13616.881	238850.509	3088987.274	47.766	298 6 4.1				
						Transition	13616.881	238850.509	3088987.274	13631.881	238845.344	3089001.348	15.000					
116	238843.067	3089010.036	333	35	53.7	Arc	13631.881	238845.344	3089001.348	13649.137	238836.400	3089016.054	17.256		Left	30	-70	5.71%
						Transition	13649.137	238836.400	3089016.054	13664.137	238826.279	3089027.115	15.000					
						Straight	13664.137	238826.279	3089027.115	13728.916	238780.869	3089073.312	64.779	341 53 38.8				
						Transition	13728.916	238780.869	3089073.312	13748.916	238769.530	3089089.518	20.000					
117	238758.099	3089096.477	94	35	22.8	Arc	13748.916	238769.530	3089089.518	13761.934	238770.152	3089102.292	13.018		Right	20	20	7.00%
						Transition	13761.934	238770.152	3089102.292	13781.934	238783.011	3089117.320	20.000					
						Straight	13781.934	238783.011	3089117.320	13890.459	238866.246	3089186.960	108.525	315 29 32.5				
						Transition	13890.459	238866.246	3089186.960	13920.459	238891.838	3089201.968	30.000					
118	238898.604	3089214.033	82	19	51.6	Arc	13920.459	238891.838	3089201.968	13933.567	238904.839	3089201.684	13.108		Right	30	30	7.00%
						Transition	13933.567	238904.839	3089201.684	13963.567	238929.753	3089185.577	30.000					
						Straight	13963.567	238929.753	3089185.577	14074.125	239011.379	3089111.008	110.558	50 4 55.2				
						Transition	14074.125	239011.379	3089111.008	14094.125	239026.983	3089098.554	20.000					

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS Regd. No-111/2004-05 BHUBANESWAR

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : Global Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS
(An ISO 9001 : 2008 Certified)
Civil Engineering Laboratory & Engineering Consultancy approved by Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Purl, Boring Road, Patna-800001

Design Consultant : SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018.
Website : www.spstpl.com
Email : info@spstpl.com

Project: DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE – BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP. -2022

Title: HORIZONTAL ALIGNMENT REPORT
Scale: AS SHOWN
Rev: R4
Drg. No: VLE/DE-BR/HW/GEN/HOR/03

HORIZONTAL ALIGNMENT REPORT

HIP / Curve No.	HIP		Deflection Angle			Element	Start			End			Length (m)	Bearing (dd mm ss)	Hand of Arc	Design Speed (KM/H)	Radius (m)	Superelevation (%)
	Easting (m)	Northing (m)	Deg	Min	Sec		Chainage (m)	Easting (m)	Northing (m)	Chainage (m)	Easting (m)	Northing (m)						
119	239032.98	3089091.275	318	5	56.1	Arc	14094.125	239026.983	3089098.554	14110.691	239042.329	3089092.521	16.566		Left	30	-50	7.00%
						Transition	14110.691	239042.329	3089092.521	14130.691	239062.237	3089091.013	20.000					
						Straight	14130.691	239062.237	3089091.013	14143.087	239074.632	3089090.903	12.396	132 24 46.9				
						Transition	14143.087	239074.632	3089090.903	14168.087	239099.377	3089088.158	25.000					
120	239116.492	3089090.529	70	27	26.3	Arc	14168.087	239099.377	3089088.158	14193.505	239119.680	3089073.547	25.418		Right	30	41	7.00%
						Transition	14193.505	239119.680	3089073.547	14218.505	239130.142	3089050.955	25.000					
						Straight	14218.505	239130.142	3089050.955	14218.718	239130.211	3089050.754	0.213	90 30 43				
						Transition	14218.718	239130.211	3089050.754	14243.718	239140.674	3089028.162	25.000					
121	239141.708	3089017.424	302	35	38.4	Arc	14243.718	239140.674	3089028.162	14259.797	239152.496	3089017.417	16.079		Left	30	-41	7.00%
						Transition	14259.797	239152.496	3089017.417	14284.797	239175.982	3089009.155	25.000					
						Straight	14284.797	239175.982	3089009.155	14296.956	239187.803	3089006.303	12.159	160 58 9.3				
						Transition	14296.956	239187.803	3089006.303	14311.956	239202.242	3089002.269	15.000					
122	239222.712	3088997.882	44	6	33.5	Arc	14311.956	239202.242	3089002.269	14350.846	239233.451	3088979.911	38.890		Right	30	70	5.71%
						Transition	14350.846	239233.451	3088979.911	14365.846	239241.916	3088967.537	15.000					
						Straight	14365.846	239241.916	3088967.537	14433.808	239278.259	3088910.109	67.962	103 33 47.7				
						Transition	14433.808	239278.259	3088910.109	14463.808	239297.758	3088887.672	30.000					
123	239297.488	3088879.723	296	38	20.6	Arc	14463.808	239297.758	3088887.672	14470.301	239303.585	3088884.831	6.493		Left	30	-33	7.00%
						Transition	14470.301	239303.585	3088884.831	14500.301	239333.270	3088883.287	30.000					
						Straight	14500.301	239333.270	3088883.287	14552.135	239384.849	3088888.425	51.834	147 40 21.2				
						Transition	14552.135	239384.849	3088888.425	14577.135	239409.245	3088893.391	25.000					
124	239415.946	3088891.522	311	25	10.9	Arc	14577.135	239409.245	3088893.391	14586.898	239417.683	3088898.258	9.763		Left	30	-41	7.00%
						Transition	14586.898	239417.683	3088898.258	14611.898	239434.196	3088916.891	25.000					
						Straight	14611.898	239434.196	3088916.891	14653.439	239458.455	3088950.612	41.541	84 18 41.8				
						Transition	14653.439	239458.455	3088950.612	14673.439	239469.009	3088967.559	20.000					
125	239473.223	3088971.14	326	10	57.5	Arc	14673.439	239469.009	3088967.559	14682.950	239472.073	3088976.548	9.511		Left	30	-50	7.00%
						Transition	14682.950	239472.073	3088976.548	14702.950	239474.067	3088996.413	20.000					
						Straight	14702.950	239474.067	3088996.413	14722.889	239474.733	3089016.340	19.939	35 43 52.7				
						Transition	14722.889	239474.733	3089016.340	14737.889	239475.605	3089031.311	15.000					
126	239475.269	3089032.366	9	39	8.9	Arc	14737.889	239475.605	3089031.311	14739.904	239475.841	3089033.313	2.015		Right	30	101	3.96%
						Transition	14739.904	239475.841	3089033.313	14754.904	239478.483	3089048.074	15.000					
						Straight	14754.904	239478.483	3089048.074	14773.576	239482.227	3089066.367	18.672	1 54 50.2				
						Transition	14773.576	239482.227	3089066.367	14793.576	239484.919	3089086.149	20.000					
127	239486.843	3089088.921	330	57	40.5	Arc	14793.576	239484.919	3089086.149	14798.917	239484.644	3089091.481	5.341		Left	30	-50	7.00%
						Transition	14798.917	239484.644	3089091.481	14818.917	239479.931	3089110.881	20.000					
						Straight	14818.917	239479.931	3089110.881	14819.182	239479.851	3089111.134	0.265	11 33 59.1				
						Transition	14819.182	239479.851	3089111.134	14834.182	239474.842	3089125.265	15.000					
128	239474.476	3089128.211	343	7	12.9	Arc	14834.182	239474.842	3089125.265	14839.805	239472.386	3089130.321	5.623		Left	30	-70	5.71%
						Transition	14839.805	239472.386	3089130.321	14854.805	239464.373	3089142.992	15.000					
						Straight	14854.805	239464.373	3089142.992	14906.817	239435.024	3089185.933	52.012	342 31 39.6				
						Transition	14906.817	239435.024	3089185.933	14926.817	239426.721	3089203.884	20.000					
129	239410.729	3089221.478	115	42	11.5	Arc	14926.817	239426.721	3089203.884	14947.205	239434.503	3089221.782	20.388		Right	20	20	7.00%
						Transition	14947.205	239434.503	3089221.782	14967.205	239453.294	3089227.952	20.000					
						Straight	14967.205	239453.294	3089227.952	14993.152	239478.946	3089231.854	25.947	325 38 52.6				
						Transition	14993.152	239478.946	3089231.854	15008.152	239493.815	3089233.813	15.000					
130	239507.638	3089236.219	19	31	41	Arc	15008.152	239493.815	3089233.813	15035.755	239521.357	3089233.276	27.603		Right	40	125	5.69%
						Transition	15035.755	239521.357	3089233.276	15050.755	239536.139	3089230.741	15.000					
						Straight	15050.755	239536.139	3089230.741	15153.980	239637.509	3089211.258	103.225	81 21 4.1				
						Transition	15153.980	239637.509	3089211.258	15168.980	239652.283	3089208.673	15.000					
131	239661.756	3089206.598	346	55	44.2	Arc	15168.980	239652.283	3089208.673	15188.200	239671.434	3089207.219	19.220		Left	40	-150	4.74%
						Transition	15188.200	239671.434	3089207.219	15203.200	239686.429	3089207.543	15.000					
						Straight	15203.200	239686.429	3089207.543	15211.210	239694.433	3089207.849	8.010	100 52 45.1				
						Transition	15211.210	239694.433	3089207.849	15231.210	239714.389	3089207.282	20.000					
132	239748.374	3089209.913	82	18	38.5	Arc	15231.210	239714.389	3089207.282	15283.040	239752.909	3089176.130	51.830		Right	30	50	7.00%
						Transition	15283.040	239752.909	3089176.130	15303.040	239757.637	3089156.734	20.000					
						Straight	15303.040	239757.637	3089156.734	15327.375	239761.813	3089132.759	24.335	87 48 29.3				
						Transition	15327.375	239761.813	3089132.759	15347.375	239763.922	3089112.906	20.000					
133	239766.6	3089105.28	39	9	56.8	Arc	15347.375	239763.922	3089112.906	15361.554	239761.541	3089098.977	14.179		Right	30	50	7.00%
						Transition	15361.554	239761.541	3089098.977	15381.554	239752.956	3089080.952	20.000					
						Straight	15381.554	239752.956	3089080.952	15383.558	239751.976	3089079.204	2.004	170 7 7.8				
						Transition	15383.558	239751.976	3089079.204	15413.558	239741.948	3089051.282	30.000					
134	239726.988	3089034.648	261	34	15.4	Arc	15413.558	239741.948	3089051.282	15435.096	239749.133	3089031.467	21.538		Left	30	-30	7.00%
						Transition	15435.096	239749.133	3089031.467	15465.096	239774.726	3089016.461	30.000					
						Straight	15465.096	239774.726	3089016.461	15529.352	239834.772	3088993.584	64.256	209 17 4.5				
						Transition	15529.352	239834.772	3088993.584	15559.352	239860.365	3088978.578	30.000					
135	239873.329	3088978.895	80	22	6.1	Arc	15559.352	239860.365	3088978.578	15571.433	239866.176	3088968.080	12.081		Right	30	30	7.00%
						Transition	15571.433	239866.176	3088968.080	15601.433	239865.298	3088938.425	30.000					
						Straight	15601.433	239865.298	3088938.425	15604.499	239864.701	3088935.417	3.066	110 51 19.9				
						Transition	15604.499	239864.701	3088935.417	15624.499	239859.520	3088916.137	20.000					
136	239857.898	3088901.132	52	46	2.2	Arc	15624.499	239859.520	3088916.137	15650.547	239843.803	3088895.734	26.048		Right	30	50	7.00%
						Transition	15650.547	239843.803	3088895.734	15670.547	239826.483	3088885.804	20.000					
						Straight	15670.547	239826.483	3088885.804	15698.117	239801.705	3088873.714	27.570	191 13 26				
						Transition	15698.117	239801.705	3088873.714	15728.117	239777.564	3088856.470	30.000					
137	239743.876	3088845.498	244	32	33.6	Arc	15728.117	239777.564	3088856.470	15758.570	239774.382	3088827.481	30.453		Left	30	-30	7.00%
						Transition	15758.570	239774.382	3088827.481	15788.570	239794.210	3088805.412	30.000					
						Straight	15788.570	239794.210	3088805.412	15797.647	239801.310	3088799.757	9.077	243 59 28.1				
						Transition	15797.647	239801.310	3088799.757	15812.647	239813.197	3088790.611	15.000					
138	239814.555	3088789.209	352	48	23	Arc	15812.647	239813.197	3088790.611	15816.480	239816.339	3088788.416	3.833		Left	40	-150	4.74%
						Transition	15816.480	239816.339	3088788.416	15831.480	239829.017	3088780.402	15.000					
						Straight	15831.480	239829.017	3088780.402	15859.241	239852.727	3088765.963	27.761	128 32 1.7				
						Transition	15859.241	239852.727	3088765.963	15874.241	239865.284	3088757.768	15.000					
139	239870.447	3088755.173	18	46	49.3	Arc	15874.241	239865.284	3088757.768	15885.464	239873.781	3088750.452	11.223		Right	30	80	5.00%
						Transition	15885.464	239873.781	3088750.452	15900.464	239883.750	3088739.251	15.000					
						Straight	15900.464	239883.750	3088739.251	15951.251	239916.314	3088700.277	50.787	121 20 24.7				
						Transition	15951.251	239916.314	3088700.277	15971.251	239927.304	3088683.685	20.000					
140	239930.703	3088683.055	44	26	2.9	Arc	15971.251	239927.304	3088683.685	15974.517	239928.294	3088680.575	3.266		Right	20	30	5.93%
						Transition	15974.517	239928.294	3088680.575	15994.517	239928.921	3088660.683	20.000					
						Straight	15994.517	239928.921	3088660.683	16049.173	239924.581	3088606.200	54.656	140 7 14				
						Transition	16049.173	239924.581	3088606.200	16064.173	239923.639	3088591.232	15.000					
141	239922.778	3088583.575	348	26	3.7	Arc	16064.173	239923.639	3088591.232	16079.451	239923.966	3088575.963	15.278		Left	30	-150	2.67%
						Transition	16079.451	239923.966	3088575.963	16094.451	239925.549	3088561.048	15.000					
						Straight	16094.451	239925.549	3088561.048	16216.081	239940.395	3088440.328	121.630	184 33 17				
						Transition	16216.081	239940.395	3088440.328	16236.081	239942.394	3088420.433	20.000					
142	239944.023	3088410.825	14	58	25.2	Arc	16236.081	239942.394	3088420.433	16255.282	239942.234	3088401.245	19.201		Right	40	150	4.74%
						Transition	16255.282	239942.234	3088401.245	16275.282	239939.905	3088381.385	20.000					
						Straight	16275.282	239939.905	3088381.385	16291.962	239937.594	3088364.867	16.680	172 59 20.7				
						Transition	16291.962	239937.594	3088364.867	16311.962	239936.030	3088344.957	20.000					
143	239933.564	3088336.052	321	52	53.3	Arc	16311.962	239936.030	3088344.957	16328.553	239939.211	3088328.738	16.591		Left	30	-55	7.00%
						Transition	16328.553	239939.211	3088328.738	16348.553	239948.180	3088310.894	20.000					
						Straight	16348.553	239948.180	3088310.894	16349.855	239948.834	3088309.768	1.302	187 57 45.9				
						Transition	16349.855	239948.834	3088309.768	16364.855	239955.898	3088296.544	15.000					
144	239958.019	3088293.958	17	29	20.7	Arc	16364.855	239955.898	3088296.544	16371.222	239958.221	3088290.619	6.367		Right	30	70	5.71%
						Transition	16371.222	239958.221	3088290.619	16386.222	239962.029	3088276.118	15.000					
						Straight	16386.222	239962.029	3088276.118	16387.412	239962.290	3088274.957	1.190	149 50 39.2				
						Transition	16387.412	239962.290	3088274.957	16412.412	239970.183	3088251.345	25.000					
145	239971.489	3088234.025	289	22	29.9	Arc	16412.412	239970.183	3088251.345	16437.950	239988.851	3088234.525	25.538		Left	30	-41	7.00%
						Transition	16437.950	239988.851	3088234.525	16462.950	240013.155	3088229.125	25.000					
						Straight	16462.950	240013.155	3088229.125	16558.075	240107.628	3088218.013	95.125	167 19 59.9				
						Transition	16558.075	240107.628	3088218.013	16573.075	240122.493	3088216.013	15.000					
146	240151.363	3088212.869	27	22	5.2	Arc	16573.075	240122.493	3088216.013	16629.724	240175.277	3088196.391	56.649		Right	30	150	2.67%
						Transition	16629.724	240175.277	3088196.391	16644.724	240187.838	3088188.195	15.000					
						Straight	16644.724	240187.838	3088188.195	16653.209	240194.866	3088183.441	8.485	96 42 29.8				
						Transition	16653.209	240194.866	3088183.441	16673.209	240210.621	3088171.179	20.000					
147	240217.752	3088167.96	38	38	3	Arc	16673.209	240210.621	3088171.179	16686.924	240218.774	3088160.204	13.715		Right	30	50	7.00%
						Transition	16686.924	240218.774	3088160.204	16706.924	240225.963	3088141.579	20.000					
						Straight	16706.924	240225.963	3088141.579	16708.476	240226.425	3088140.096	1.552	124 4 35				
						Transition	16708.476	240226.425	3088140.096	16723.476	240231.000	3088125.812	15.000					
148	240235.089	3088112.262	351	52	46.7	Arc	16723.476	240231.000	3088125.812	16751.703	240241.272	3088099.531	28.227		Left	50	-305	3.64%
						Transition	16751.703	240241.272	3088099.531	16766.703	240247.597	3088085.930	15.000					
						Straight	16766.703	240247.597	3088085.930	16836.004	240277.334	3088023.334	69.301	162 42 38				
						Transition	16836.004	240277.334	3088023.334	16856.004	240287.082	3088005.911	20.000					
149	240288.009	3088000.861	327	2	3	Arc	16856.004	240287.082	3088005.911	16864.772	240292.929	3087999.393	8.768		Left	30	-50	7.00%
						Transition	16864.772	240292.929	3087999.393	16884.772	240309.194	3087987.815	20.000					
						Straight	16884.772	240309.194	3087987.815	16892.759	240315.995	3087983.627	7.987	154 35 24.7				
						Transition	16892.759	240315.995	3087983.627	16912.759	240332.260	3087972.050	20.000					
150	240334.582	3087972.182	26	28	37.2	Arc	16912.759	240332.260	3087972.050	16915.864	240334.461	3087969.860	3.105		Right	30	50	7.00%
						Transition	16915.864	240334.461	3087969.860	16935.864	240346.116	3087953.651	20.000					
						Straight	16935.864	240346.116	3087953.651	17007.495	240383.967	3087892.837	71.631	121 37 27.7				
						Transition	17007.495	240383.967	3087892.837	17027.495	240393.098	3087875.103	20.000					
151	240398.227	3087869.927	44	39	27.4	Arc	17027.495	240393.098	3087875.103	17039.451	240395.078	3087863.355	11.956		Right	25	41	6.78%
						Transition	17039.451	240395.078	3087863.355	17059.451	240392.267	3087843.607	20.000					
						Straight	17059.451	240392.267	3087843.607	17059.877	240392.173	3087843.191	0.426	148 6 4.9				
						Transition	17059.877	240392.173	3087843.191	17079.877	240389.361	3087823.443	20.000					
152	240387.021	3087820.443	324	16	32.7	Arc	17079.877	240389.361	3087823.443	17085.441	240389.855	3087817.905	5.564		Left	25	-41	6.78%
						Transition	17085.441	240389.855	3087817.905	17105.441	240396.122	3087798.968	20.000					
						Straight	17105.441	240396.122	3087798.968	17106.800	240396.652	3087797.717	1.359	192 45 32.3				
						Transition	17106.800	240396.652	3087797.717	17126.800	240402.918	3087778.780	20.000					
153	240407.014	3087773.265	43	38	20	Arc	17126.800	240402.918	3087778.780	17138.027	240403.142	3087767.590	11.227		Right	25	41	6.78%
						Transition	17138.027	240403.142	3087767.590	17158.027	240397.638	3087748.417	20.000					
						Straight	17158.027	240397.638	3087748.417	17166.802	240394.540	3087740.207	8.775	157 2 5				
						Transition	17166.802	240394.540	3087740.207	17186.802	240388.751	3087721.100	20.000					
154	240373.55	3087684.58	270	59	32.5	Arc	17186.802	240388.751	3087721.100	17244.476	240410.782	3087671.220	57.674		Left	30	-50	7.00%
						Transition	17244.476	240410.782	3087671.220	17264.476	240428.804	3087662.630	20.000					
						Straight	17264.476	240428.804	3087662.630	17266.563	240430.744	3087661.859	2.087	200 40 25				
						Transition	17266.563	240430.744	3087661.859	17286.563	240448.766	3087653.269	20.000					
155	240458.18	3087650.96	42	25	25.9	Arc	17286.563	240448.766	3087653.269	17303.585	240461.179	3087641.743	17.022		Right	30	50	7.00%
						Transition	17303.585	240461.179	3087641.743	17323.585	240471.080	3087624.406	20.000					
						Straight	17323.585	240471.080	3087624.406	17346.879	240481.258	3087603.453	23.294	111 39 57.5				
						Transition	17346.879	240481.258	3087603.453	17371.879	240489.811	3087580.071	25.000					
156	240498.024	3087568.941	63	47	15.7	Arc	17371.879	240489.811	3087580.071	17392.525	240487.682	3087559.755	20.646		Right	30	41	7.00%
						Transition	17392.525	240487.682	3087559.755	17417.525	240474.466	3087538.655	25.000					
						Straight	17417.525	240474.466	3087538.655	17424.435	240470.223	3087533.200	6.910	154 5 23.4				
						Transition	17424.435	240470.223	3087533.200	17449.435	240457.008	3087512.100	25.000					
157	240450.957	3087508.43	311	7	25.5	Arc	17449.435	240457.008	3087512.100	17459.411	240454.696	3087502.422	9.976		Left	30	-41	7.00%
						Transition	17459.411	240454.696	3087502.422	17484.411	240456.944	3087477.626	25.000					
						Straight	17484.411	240456.944	3087477.626	17486.886	240457.416	3087475.196	2.475	217 52 39.1				
						Transition	17486.886	240457.416	3087475.196	17506.886	240459.620	3087455.371	20.000					

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS Regd. No- 111/2004-05 BHUBANESWAR

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : Global Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS
(An ISO 9001 : 2008 Certified)
Govt. Testing Laboratory & Engineering Consultancy approved by Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Purl, Boring Road, Patna-800001

Design Consultant : SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018.
Website : www.spstpl.com
Email : info@spstpl.com

Project: DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE – BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP. -2022

Title: HORIZONTAL ALIGNMENT REPORT
Scale: AS SHOWN
Rev: R4
Drg. No: VLE/DE-BR/HW/GEN/ HOR/04

HORIZONTAL ALIGNMENT REPORT

HIP / Curve No.	HIP		Deflection Angle			Element	Start			End			Length (m)	Bearing (dd mm ss)	Hand of Arc	Design Speed (KM/H)	Radius (m)	Superelevation (%)
	Easting (m)	Northing (m)	Deg	Min	Sec		Chainage (m)	Easting (m)	Northing (m)	Chainage (m)	Easting (m)	Northing (m)						
158	240462.181	3087450.678	39	49	13.2	Arc	17506.886	240459.620	3087455.371	17515.381	240458.306	3087446.994	8.495		Right	25	41	6.78%
						Transition	17515.381	240458.306	3087446.994	17535.381	240450.140	3087428.795	20.000					
						Straight	17535.381	240450.140	3087428.795	17536.420	240449.639	3087427.884	1.039	169 0 4.6				
						Transition	17536.420	240449.639	3087427.884	17556.420	240441.201	3087409.791	20.000					
159	240438.497	3087407.635	330	46	2.4	Arc	17556.420	240441.201	3087409.791	17561.931	240439.849	3087404.452	5.511		Left	30	-50	7.00%
						Transition	17561.931	240439.849	3087404.452	17581.931	240438.663	3087384.522	20.000					
						Straight	17581.931	240438.663	3087384.522	17586.008	240438.692	3087380.445	4.077	208 49 17.8				
						Transition	17586.008	240438.692	3087380.445	17606.008	240440.164	3087360.535	20.000					
160	240438.882	3087353.874	323	31	28.1	Arc	17606.008	240440.164	3087360.535	17617.839	240443.939	3087349.352	11.831		Left	30	-50	7.00%
						Transition	17617.839	240443.939	3087349.352	17637.839	240454.832	3087332.621	20.000					
						Straight	17637.839	240454.832	3087332.621	17641.413	240456.977	3087329.762	3.574	179 35 20.2				
						Transition	17641.413	240456.977	3087329.762	17656.413	240465.691	3087317.557	15.000					
161	240469.875	3087312.576	15	9	52	Arc	17656.413	240465.691	3087317.557	17669.203	240471.947	3087306.410	12.790		Right	30	105	3.81%
						Transition	17669.203	240471.947	3087306.410	17684.203	240477.827	3087292.614	15.000					
						Straight	17684.203	240477.827	3087292.614	17734.094	240496.292	3087246.266	49.891	143 6 48.3				
						Transition	17734.094	240496.292	3087246.266	17749.094	240501.136	3087232.085	15.000					
162	240502.631	3087230.357	21	43	30	Arc	17749.094	240501.136	3087232.085	17753.053	240501.882	3087228.199	3.959		Right	25	50	5.56%
						Transition	17753.053	240501.882	3087228.199	17768.053	240502.630	3087213.232	15.000					
						Straight	17768.053	240502.630	3087213.232	17768.542	240502.630	3087212.744	0.489	158 16 40.3				
						Transition	17768.542	240502.630	3087212.744	17788.542	240504.248	3087192.862	20.000					
163	240502.628	3087187.921	320	33	29.5	Arc	17788.542	240504.248	3087192.862	17796.765	240507.018	3087185.134	8.223		Left	25	-41	6.78%
						Transition	17796.765	240507.018	3087185.134	17816.765	240518.397	3087168.751	20.000					
						Straight	17816.765	240518.397	3087168.751	17914.719	240580.623	3087093.101	97.954	180 0 10.2				
						Transition	17914.719	240580.623	3087093.101	17929.719	240589.727	3087081.190	15.000					
164	240591.777	3087079.541	16	19	39.7	Arc	17929.719	240589.727	3087081.190	17934.667	240592.295	3087076.962	4.948		Right	30	70	5.71%
						Transition	17934.667	240592.295	3087076.962	17949.667	240598.669	3087063.392	15.000					
						Straight	17949.667	240598.669	3087063.392	17950.485	240598.990	3087062.639	0.818	140 33 39.7				
						Transition	17950.485	240598.990	3087062.639	17970.485	240608.283	3087044.989	20.000					
165	240610.402	3087035.897	310	28	58.2	Arc	17970.485	240608.283	3087044.989	17985.918	240619.661	3087034.697	15.433		Left	25	-41	6.78%
						Transition	17985.918	240619.661	3087034.697	18005.918	240638.152	3087027.216	20.000					
						Straight	18005.918	240638.152	3087027.216	18009.284	240641.365	3087026.211	3.366	156 53 19.4				
						Transition	18009.284	240641.365	3087026.211	18034.284	240663.790	3087015.602	25.000					
166	240672.988	3087016.318	67	43	6.8	Arc	18034.284	240663.790	3087015.602	18044.742	240670.305	3087007.490	10.458		Right	25	30	7.00%
						Transition	18044.742	240670.305	3087007.490	18069.742	240675.824	3086983.304	25.000					
						Straight	18069.742	240675.824	3086983.304	18070.104	240675.855	3086982.943	0.362	107 22 17.6				
						Transition	18070.104	240675.855	3086982.943	18095.104	240681.375	3086958.758	25.000					
167	240678.42	3086953.09	300	47	26.2	Arc	18095.104	240681.375	3086958.758	18101.106	240684.770	3086953.820	6.002		Left	25	-30	7.00%
						Transition	18101.106	240684.770	3086953.820	18126.106	240705.379	3086940.010	25.000					
						Straight	18126.106	240705.379	3086940.010	18162.912	240738.493	3086923.945	36.806	175 5 24.3				
						Transition	18162.912	240738.493	3086923.945	18177.912	240752.207	3086917.886	15.000					
168	240757.895	3086914.531	337	18	55.1	Arc	18177.912	240752.207	3086917.886	18190.627	240764.497	3086914.699	12.715		Left	30	-70	5.71%
						Transition	18190.627	240764.497	3086914.699	18205.627	240779.427	3086913.329	15.000					
						Straight	18205.627	240779.427	3086913.329	18208.021	240781.818	3086913.196	2.394	115 52 50.5				
						Transition	18208.021	240781.818	3086913.196	18223.021	240796.767	3086912.003	15.000					
169	240799.848	3086912.189	11	28	34.7	Arc	18223.021	240796.767	3086912.003	18229.052	240802.724	3086911.067	6.031		Right	30	105	3.81%
						Transition	18229.052	240802.724	3086911.067	18244.052	240817.318	3086907.615	15.000					
						Straight	18244.052	240817.318	3086907.615	18297.533	240869.055	3086894.069	53.481	93 11 45.6				
						Transition	18297.533	240869.055	3086894.069	18312.533	240883.413	3086889.756	15.000					
170	240886.814	3086889.419	17	36	19.8	Arc	18312.533	240883.413	3086889.756	18319.042	240889.382	3086887.164	6.509		Right	30	70	5.71%
						Transition	18319.042	240889.382	3086887.164	18334.042	240902.335	3086879.615	15.000					
						Straight	18334.042	240902.335	3086879.615	18337.399	240905.173	3086877.823	3.357	104 40 20.3				
						Transition	18337.399	240905.173	3086877.823	18357.399	240922.725	3086868.309	20.000					
171	240929.533	3086862.436	318	59	5.3	Arc	18357.399	240922.725	3086868.309	18373.191	240938.121	3086865.101	15.792		Left	30	-50	7.00%
						Transition	18373.191	240938.121	3086865.101	18393.191	240958.012	3086866.813	20.000					
						Straight	18393.191	240958.012	3086866.813	18394.997	240959.797	3086867.087	1.806	122 16 40.1				
						Transition	18394.997	240959.797	3086867.087	18424.997	240987.970	3086876.386	30.000					
172	240993.805	3086872.314	295	58	5	Arc	18424.997	240987.970	3086876.386	18428.524	240990.640	3086878.687	3.527		Left	30	-30	7.00%
						Transition	18428.524	240990.640	3086878.687	18458.524	241003.998	3086905.178	30.000					
						Straight	18458.524	241003.998	3086905.178	18460.086	241004.461	3086906.669	1.562	81 15 45.5				
						Transition	18460.086	241004.461	3086906.669	18475.086	241008.387	3086921.138	15.000					
173	241011.971	3086930.884	331	25	58	Arc	18475.086	241008.387	3086921.138	18494.987	241009.407	3086940.947	19.901		Left	30	-70	5.71%
						Transition	18494.987	241009.407	3086940.947	18509.987	241006.987	3086955.742	15.000					
						Straight	18509.987	241006.987	3086955.742	18524.112	241004.210	3086969.592	14.125	17 13 50.4				
						Transition	18524.112	241004.210	3086969.592	18539.112	241001.613	3086984.362	15.000					
174	241000.564	3086987.781	12	0	29.1	Arc	18539.112	241001.613	3086984.362	18546.118	241000.962	3086991.336	7.006		Right	30	105	3.81%
						Transition	18546.118	241000.962	3086991.336	18561.118	241000.781	3087006.331	15.000					
						Straight	18561.118	241000.781	3087006.331	18562.366	241000.796	3087007.579	1.248	348 39 48.4				
						Transition	18562.366	241000.796	3087007.579	18577.366	241000.555	3087022.573	15.000					
175	241001.028	3087027.437	344	22	38.1	Arc	18577.366	241000.555	3087022.573	18586.906	240999.370	3087032.035	9.540		Left	30	-90	4.44%
						Transition	18586.906	240999.370	3087032.035	18601.906	240995.905	3087046.624	15.000					
						Straight	18601.906	240995.905	3087046.624	18655.186	240982.159	3087098.100	53.280	0 40 17.5				
						Transition	18655.186	240982.159	3087098.100	18670.186	240978.208	3087112.570	15.000					
176	240977.844	3087114.256	357	39	7.2	Arc	18670.186	240978.208	3087112.570	18673.627	240977.253	3087115.876	3.441		Left	50	-450	2.50%
						Transition	18673.627	240977.253	3087115.876	18688.627	240972.872	3087130.222	15.000					
						Straight	18688.627	240972.872	3087130.222	18702.424	240968.769	3087143.395	13.797	345 2 55.6				
						Transition	18702.424	240968.769	3087143.395	18732.424	240964.758	3087172.790	30.000					
177	240956.569	3087182.566	79	52	7.1	Arc	18732.424	240964.758	3087172.790	18744.243	240969.278	3087183.629	11.819		Right	30	30	7.00%
						Transition	18744.243	240969.278	3087183.629	18774.243	240992.984	3087201.466	30.000					

HIP / Curve No.	HIP		Deflection Angle			Element	Start			End			Length (m)	Bearing (dd mm ss)	Hand of Arc	Design Speed (KM/H)	Radius (m)	Superelevation (%)
	Easting (m)	Northing (m)	Deg	Min	Sec		Chainage (m)	Easting (m)	Northing (m)	Chainage (m)	Easting (m)	Northing (m)						
						Straight	18774.243	240992.984	3087201.466	18776.126	240994.655	3087202.334	1.883	342 42 2.7				
						Transition	18776.126	240994.655	3087202.334	18801.126	241015.476	3087215.984	25.000					
178	241020.984	3087215.999	315	5	55.1	Arc	18801.126	241015.476	3087215.984	18808.256	241020.065	3087221.430	7.130		Left	30	-41	7.00%
						Transition	18808.256	241020.065	3087221.430	18833.256	241029.987	3087244.264	25.000					
						Straight	18833.256	241029.987	3087244.264	18858.174	241037.550	3087268.007	24.918	62 34 9.9				
						Transition	18858.174	241037.550	3087268.007	18888.174	241051.110	3087294.395	30.000					
179	241051.255	3087311.032	88	12	44.9	Arc	18888.174	241051.110	3087294.395	18904.362	241065.200	3087301.958	16.188		Right	30	30	7.00%
						Transition	18904.362	241065.200	3087301.958	18934.362	241094.686	3087298.676	30.000					
						Straight	18934.362	241094.686	3087298.676	18943.374	241103.354	3087296.210	9.012	17 40 5				
						Transition	18943.374	241103.354	3087296.210	18958.374	241117.619	3087291.595	15.000					
180	241121.576	3087291.026	18	32	25.1	Arc	18958.374	241117.619	3087291.595	18966.025	241124.541	3087288.345	7.651		Right	30	70	5.71%
						Transition	18966.025	241124.541	3087288.345	18981.025	241137.203	3087280.318	15.000					
						Straight	18981.025	241137.203	3087280.318	18986.989	241142.123	3087276.947	5.964	105 52 49.9				
						Transition	18986.989	241142.123	3087276.947	19016.989	241169.035	3087264.459	30.000					
181	241169.526	3087258.168	299	9	16	Arc	19016.989	241169.035	3087264.459	19018.848	241170.888	3087264.330	1.859		Left	30	-30	7.00%
						Transition	19018.848	241170.888	3087264.330	19048.848	241199.276	3087272.952	30.000					
						Straight	19048.848	241199.276	3087272.952	19073.638	241221.476	3087283.984	24.790	124 25 15				
						Transition	19073.638	241221.476	3087283.984	19088.638	241234.743	3087290.976	15.000					
182	241238.937	3087292.661	346	58	21.5	Arc	19088.638	241234.743	3087290.976	19097.512	241242.188	3087295.800	8.874		Left	30	-105	3.81%
						Transition	19097.512	241242.188	3087295.800	19112.512	241253.992	3087305.050	15.000					
						Straight	19112.512	241253.992	3087305.050	19114.800	241255.759	3087306.505	2.288	63 34 31				
						Transition	19114.800	241255.759	3087306.505	19134.800	241270.295	3087320.189	20.000					
183	241272.62	3087320.38	333	30	16.1	Arc	19134.800	241270.295	3087320.189	19137.922	241272.187	3087322.672	3.122		Left	30	-50	7.00%
						Transition	19137.922	241272.187	3087322.672	19157.922	241281.520	3087340.321	20.000					
						Straight	19157.922	241281.520	3087340.321	19165.797	241284.729	3087347.512	7.875	50 32 52.5				
						Transition	19165.797	241284.729	3087347.512	19180.797	241290.514	3087361.348	15.000					
184	241291.45	3087362.569	350	13	14.1	Arc	19180.797	241290.514	3087361.348	19183.719	241291.473	3087364.108	2.922		Left	30	-105	3.81%
						Transition	19183.719	241291.473	3087364.108	19198.719	241295.515	3087378.549	15.000					
						Straight	19198.719	241295.515	3087378.549	19201.395	241296.175	3087381.143	2.676	24 3 8.7				
						Transition	19201.395	241296.175	3087381.143	19231.395	241308.148	3087408.288	30.000					
185	241305.559	3087418.031	73	10	10.4	Arc	19231.395	241308.148	3087408.288	19239.707	241314.574	3087413.518	8.312		Right	30	30	7.00%
						Transition	19239.707	241314.574	3087413.518	19269.707	241343.584	3087419.730	30.000					
						Straight	19269.707	241343.584	3087419.730	19273.114	241346.988	3087419.882	3.407	14 16 22.8				
						Transition	19273.114	241346.988	3087419.882	19288.114	241361.932	3087421.085	15.000					
186	241366.024	3087420.732	341	17	3.3	Arc	19288.114	241361.932	3087421.085	19295.980	241369.624	3087422.708	7.866		Left	30	-70	5.71%
						Transition	19295.980	241369.624	3087422.708	19310.980	241383.781	3087427.646	15.000					
						Straight	19310.980	241383.781	3087427.646	19320.945	241393.067	3087431.261	9.965	87 26 33.2				
						Transition	19320.945	241393.067	3087431.261	19335.945	241407.167	3087436.368	15.000					
187	241413.703	3087439.296	15	52	9.1	Arc	19335.945	241407.167	3087436.368	19350.027	241420.859	3087439.614	14.082		Right	30	105	3.81%
						Transition	19350.027	241420.859	3087439.614	19365.027	241435.751	3087441.382	15.000					
						Straight	19365.027	241435.751	3087441.382	19380.711	241451.365	3087442.859	15.684	68 43 36.5				
						Transition	19380.711	241451.365	3087442.859	19395.711	241466.309	3087444.149	15.000					
188	241492.985	3087446.796	12	50	1.6	Arc	19395.711	241466.309	3087444.149	19449.028	241519.550	3087443.208	53.317		Right	50	305	3.64%
						Transition	19449.028	241519.550	3087443.208	19464.028	241534.439	3087441.390	15.000					
						Straight	19464.028	241534.439	3087441.390	19540.000	241610.106	3087431.522	76.308	84 35 45.5				

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd
Managing Director

SUVADRA CONSULTANTS Regd. No: 111/2004-05 BHUBANESWAR

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : **Glabal Infra Solutions**
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : **Valecha Engineering Ltd**
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) Soil Testing Laboratory & Engineering Consultancy approved by Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Purl, Boring Road, Patna-800001

Design Consultant : **SPS Technocrats Pvt. Ltd.**
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018.
Website : www.spstpl.com
Email : info@spstpl.com

Project: **DEMWE - BRAHMKUND (NH-13)**
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP. -2022

Title: **HORIZONTAL ALIGNMENT REPORT**
Scale: **AS SHOWN**
Rev: **R4**
Drg. No: **VLE/DE-BR/HW/GEN/ HOR/05**

VERTICAL ALIGNMENT REPORT

VERTICAL ALIGNMENT REPORT

Sl. No.	Vertical Intersection Points			Element	Vertical Tangent Points					Radius	M Value	K Value	Length of Element (m)
	Chainage (m)	Level (m)	%Grade Diff.		Start Chainage (m)	Level (m)	End Chainage (m)	Level (m)	Grade (%)				
1				Grade	0.000	295.766	0.067	295.769	4.254				0.067
2	15.067	296.407	2.741	Sag Curve	0.067	295.769	30.067	297.456		1095	9.136	10.946	30.000
3				Grade	30.067	297.456	417.540	324.560	6.995				387.473
4	447.540	326.659	-0.412	Hog Curve	417.540	324.560	477.540	328.634		-14566	-0.687	145.662	60.000
5				Grade	477.540	328.634	776.833	348.337	6.583				299.293
6	806.833	350.312	-2.383	Hog Curve	776.833	348.337	836.833	351.572		-2518	-3.971	25.181	60.000
7				Grade	836.833	351.572	969.121	357.129	4.200				132.288
8	999.121	358.389	1.768	Sag Curve	969.121	357.129	1029.121	360.179		3394	2.946	33.940	60.000
9				Grade	1029.121	360.179	1261.877	374.071	5.968				232.756
10	1291.877	375.862	-5.468	Hog Curve	1261.877	374.071	1321.877	376.012		-1097	-9.114	10.972	60.000
11				Grade	1321.877	376.012	1480.014	376.802	0.500				158.137
12	1510.014	376.952	-4.679	Hog Curve	1480.014	376.802	1540.014	375.699		-1282	-7.798	12.824	60.000
13				Grade	1540.014	375.699	1808.766	364.469	-4.179				268.752
14	1838.766	363.215	4.179	Sag Curve	1808.766	364.469	1868.766	363.215		1436	6.964	14.359	60.000
15				Grade	1868.766	363.215	2180.734	363.215	0.000				311.968
16	2210.734	363.215	6.950	Sag Curve	2180.734	363.215	2240.734	365.300		863	11.583	8.633	60.000
17				Grade	2240.734	365.300	2448.209	379.719	6.950				207.475
18	2478.209	381.804	-2.772	Hog Curve	2448.209	379.719	2508.209	383.058		-2164	-4.620	21.644	60.000
19				Grade	2508.209	383.058	2615.421	387.537	4.178				107.212
20	2645.421	388.790	2.772	Sag Curve	2615.421	387.537	2675.421	390.875		2164	4.620	21.643	60.000
21				Grade	2675.421	390.875	2775.128	397.805	6.950				99.707
22	2805.128	399.890	-5.445	Hog Curve	2775.128	397.805	2835.128	400.341		-1102	-9.075	11.019	60.000
23				Grade	2835.128	400.341	2925.127	401.695	1.505				89.999
24	2955.127	402.147	1.649	Sag Curve	2925.127	401.695	2985.127	403.093		3638	2.749	36.375	60.000
25				Grade	2985.127	403.093	3065.363	405.624	3.154				80.236
26	3095.363	406.570	-3.963	Hog Curve	3065.363	405.624	3125.363	406.328		-1514	-6.604	15.141	60.000
27				Grade	3125.363	406.328	3215.421	405.600	-0.808				90.058
28	3245.421	405.357	2.498	Sag Curve	3215.421	405.600	3275.421	405.864		2402	4.164	24.016	60.000
29				Grade	3275.421	405.864	3546.822	410.450	1.690				271.401
30	3621.822	411.718	-8.134	Hog Curve	3546.822	410.450	3696.822	406.885		-1844	-5.422	18.442	150.000
31				Grade	3696.822	406.885	3866.911	395.925	-6.444				170.089
32	3896.911	393.992	2.189	Sag Curve	3866.911	395.925	3926.911	392.715		2741	3.649	27.405	60.000
33				Grade	3926.911	392.715	4267.560	378.222	-4.254				340.649
34	4342.56	375.032	9.32	Sag Curve	4267.560	378.222	4417.560	378.831		1609	6.21362	16.0936781	150.000
35				Grade	4417.560	378.831	4564.817	386.291	5.066				147.257
36	4594.817	387.811	-5.066	Hog Curve	4564.817	386.291	4624.817	387.811		-1184	-8.443	11.844	60.000
37				Grade	4624.817	387.811	4793.917	387.811	0.000				169.100
38	4813.917	387.811	-0.500	Hog Curve	4793.917	387.811	4833.917	387.711		-8000	-1.250	80.000	40.000
39				Grade	4833.917	387.711	5052.500	386.618	-0.500				218.583
40	5082.500	386.468	0.500	Sag Curve	5052.500	386.618	5112.500	386.468		12000	0.833	119.999	60.000
41				Grade	5112.500	386.468	5217.500	386.468	0.000				105.000
42	5232.500	386.468	7.950	Sag Curve	5217.500	386.468	5247.500	387.660		377	26.500	3.774	30.000
43				Grade	5247.500	387.660	5708.798	424.334	7.950				461.298
44	5723.798	425.526	-7.950	Hog Curve	5708.798	424.334	5738.798	425.526		-377	-26.500	3.774	30.000
45				Grade	5738.798	425.526	5823.798	425.526	0.000				85.000
46	5843.798	425.526	7.990	Sag Curve	5823.798	425.526	5863.798	427.124		501	19.974	5.007	40.000
47				Grade	5863.798	427.124	6679.606	492.304	7.990				815.808
48	6709.606	494.701	-5.49	Hog Curve	6679.606	492.304	6739.606	495.451		-1093	-9.14935	10.9297382	60.000
49				Grade	6739.606	495.451	6829.606	497.701	2.500				90.000
50	6859.606	498.451	5.49	Sag Curve	6829.606	497.701	6889.606	500.848		1093	9.15	10.9289617	60.000
51				Grade	6889.606	500.848	7435.311	544.450	7.990				545.705
52	7465.311	546.847	-5.49	Hog Curve	7435.311	544.450	7495.311	547.597		-1093	-9.15	10.9289617	60.000
53				Grade	7495.311	547.597	7585.311	549.847	2.500				90.000
54	7615.311	550.597	5.49	Sag Curve	7585.311	549.847	7645.311	552.994		1093	9.15	10.9289617	60.000
55				Grade	7645.311	552.994	8437.751	616.310	7.990				792.440
56	8467.75	618.707	-5.49	Hog Curve	8437.751	616.310	8497.751	619.457		-1093	-9.15	10.9289617	60.000
57				Grade	8497.751	619.457	8587.751	621.707	2.500				90.000
58	8617.75	622.457	5.49	Sag Curve	8587.751	621.707	8647.751	624.854		1093	9.15	10.9289617	60.000
59				Grade	8647.751	624.854	9306.693	677.503	7.990				658.942
60	9336.693	679.9	-5.49	Hog Curve	9306.693	677.503	9366.693	680.650		-1093	-9.15	10.9289617	60.000
61				Grade	9366.693	680.650	9456.693	682.900	2.500				90.000
62	9486.693	683.65	5.49	Sag Curve	9456.693	682.900	9516.693	686.047		1093	9.15	10.9289617	60.000
63				Grade	9516.693	686.047	10088.984	731.773	7.990				572.291

Sl. No.	Vertical Intersection Points			Element	Vertical Tangent Points					Radius	M Value	K Value	Length of Element (m)
	Chainage (m)	Level (m)	%Grade Diff.		Start Chainage (m)	Level (m)	End Chainage (m)	Level (m)	Grade (%)				
64	10118.984	734.17	-5.49	Hog Curve	10088.984	731.773	10148.984	734.920		-1093	-9.15	10.9289617	60.000
65				Grade	10148.984	734.920	10238.984	737.170	2.500				90.000
66	10268.984	737.92	5.49	Sag Curve	10238.984	737.170	10298.984	740.317		1093	9.14999	10.9289737	60.000
67				Grade	10298.984	740.317	10871.972	786.099	7.990				572.988
68	10901.972	788.496	-2.09	Hog Curve	10871.972	786.099	10931.972	790.266		-2871	-3.48332	28.7082439	60.000
69				Grade	10931.972	790.266	11021.972	795.576	5.900				90.000
70	11051.972	797.346	2.09	Sag Curve	11021.972	795.576	11081.972	799.743		2871	3.48333	28.7081614	60.000
71				Grade	11081.972	799.743	11384.429	823.909	7.990				302.457
72	11504.429	833.497	-15.94	Hog Curve	11384.429	823.909	11624.429	823.957		-1506	-6.64167	15.0564542	240.000
73				Grade	11624.429	823.957	12653.584	742.139	-7.950				1029.155
74	12683.584	739.754	4.45	Sag Curve	12653.584	742.139	12713.584	738.704		1348	7.41666	13.4831582	60.000
75				Grade	12713.584	738.704	12795.266	735.845	-3.500				81.682
76	12825.266	734.795	-4.45	Hog Curve	12795.266	735.845	12855.266	732.410		-1348	-7.41666	13.4831582	60.000
77				Grade	12855.266	732.410	13176.286	706.889	-7.950				321.020
78	13206.286	704.504	4.489	Sag Curve	13176.286	706.889	13236.286	703.466		1337	7.48186	13.3656604	60.000
79				Grade	13236.286	703.466	13355.230	699.349	-3.461				118.944
80	13385.23	698.311	-3.489	Hog Curve	13355.230	699.349	13415.230	696.226		-1720	-5.81519	17.1963427	60.000
81				Grade	13415.230	696.226	13719.420	675.085	-6.950				304.190
82	13749.42	673	6.95	Sag Curve	13719.420	675.085	13779.420	673.000		863	11.58333	8.63309601	60.000
83				Grade	13779.420	673.000	13889.394	673.000	0.000				109.974
84	13919.394	673	-7.995	Hog Curve	13889.394	673.000	13949.394	670.602		-750	-13.325	7.50469043	60.000
85				Grade	13949.394	670.602	14788.081	603.548	-7.995				838.687
86	14818.081	601.15	7.995	Sag Curve	14788.081	603.548	14848.081	601.150		750	13.325	7.50469043	60.000
87				Grade	14848.081	601.150	14991.959	601.150	0.000				143.878
88	15021.959	601.15	6.99	Sag Curve	14991.959	601.150	15051.959	603.247		858	11.65	8.58369099	60.000
89				Grade	15051.959	603.247	15956.895	666.502	6.990				904.936
90	15976.895	667.9	-6.99	Hog Curve	15956.895	666.502	15996.895	667.900		-572	-17.475	5.72246066	40.000
91				Grade	15996.895	667.900	16050.500	667.900	0.000				53.605
92	16070.5	667.9	6.99	Sag Curve	16050.500	667.900	16090.500	669.298		572	17.47501	5.72245738	40.000
93				Grade	16090.500	669.298	16197.505	676.778	6.990				107.005
94	16227.505	678.875	-11.927	Hog Curve	16197.505	676.778	16257.505	677.394		-503	-19.87811	5.03065935	60.000
95				Grade	16257.505	677.394	16337.173	673.460	-4.937				79.668
96	16387.173	670.992	1.867	Sag Curve	16337.173	673.460	16437.173	669.457		5358	1.86652	53.5756381	100.000
97				Grade	16437.173	669.457	16540.999	666.269	-3.070				103.826
98	16580.999	665.041	-1.697	Hog Curve	16540.999	666.269	16620.999	663.134		-4714	-2.1212	47.1431265	80.000
99				Grade	16620.999	663.134	16670.572	660.771	-4.767				49.573
100	16700.572	659.341	-1.55	Hog Curve	16670.572	660.771	16730.572	657.445		-3871	-2.58316	38.7122749	60.000
101				Grade	16730.572	657.445	17042.966	637.711	-6.317				312.394
102	17072.967	635.816	5.423	Sag Curve	17042.966	637.711	17102.966	635.547		1106	9.03881	11.0634033	60.000
103				Grade	17102.966	635.547	17107.056	635.511	-0.894				4.090
104	17212.056	634.572	-7.056	Hog Curve	17107.056	635.511	17317.056	626.225		-2976	-3.36004	29.7615505	210.000
105				Grade	17317.056	626.225	17409.151	618.903	-7.950				92.095
106	17494.151	612.146	3.711	Sag Curve	17409.151	618.903	17579.151	608.543		4581	2.18311	45.8062122	170.000
107				Grade	17579.151	608.543	17662.343	605.017	-4.239				83.192
108	17712.343	602.897	-1.364	Hog Curve	17662.343	605.017	17762.343	600.096		-7333	-1.36365	73.3326	100.000
109				Grade	17762.343	600.096	17893.193	592.765	-5.602				130.850
110	17943.193	589.964	7.83	Sag Curve	17893.193	592.765	17993.193	591.078		1277	7.82973	12.7718325	100.000
111				Grade	17993.193	591.078	18019.450	591.663	2.227				26.257
112	18109.45	593.667	-5.335	Hog Curve	18019.450	591.663	18199.450	590.871		-3374	-2.9638	33.7404683	180.000
113				Grade	18199.450	590.871	18581.510	578.998	-3.107				382.060
114	18656.51	576.668	-3.146	Hog Curve	18581.510	578.998	18731.510	571.977		-4767	-2.09765	47.6723953	150.000
115				Grade	18731.510	571.977	18911.350	560.730	-6.254				179.840
116	18961.35	557.603	2.61	Sag Curve	18911.350	560.730	19011.350	555.781		3831	2.61026	38.3103599	100.000
117				Grade	19011.350	555.781	19103.500	552.424	-3.644				92.150
118	19133.5	551.331	-0.662	Hog Curve	19103.500	552.424	19163.500	550.039		-9066	-1.10304	90.6585437	60.000
119				Grade	19163.500	550.039	19262.766	545.765	-4.306				99.266
120	19292.766	544.473	1.264	Sag Curve	19262.766	545.765	19322.766	543.561		4745	2.10728	47.4545386	60.000
121				Grade	19322.766	543.561	19400.849	541.186	-3.041				78.083
122	19430.849	540.274	-3.909	Hog Curve	19400.849	541.186	19460.849	538.189		-1535	-6.51479	15.3496889	60.000
123				Grade	19460.849	538.189	19464.818	537.913	-6.950				3.969
124	19494.818	535.828	9.677	Sag Curve	19464.818	537.913	19524.818	536.646		620	16.12755	6.20056983	60.000
125				Grade	19524.818	536.646	19540.000	537.060	2.727				15.182

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd
Managing Director

SUVADRA CONSULTANTS Regd. No- 111/2004-05 BHUBANESWAR

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : Global Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

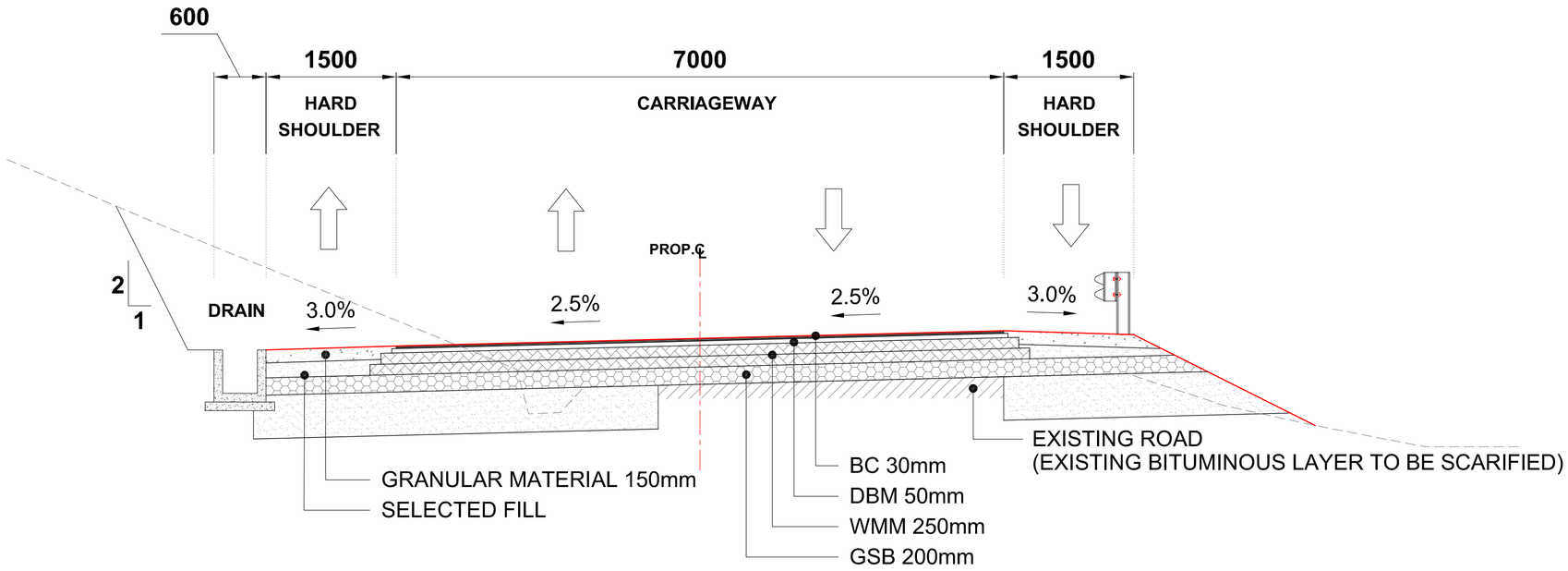
Design Consultant : SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018.
Website : www.spstpl.com
Email : info@spstpl.com

Project: DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP. -2022

Title: VERTICAL ALIGNMENT REPORT
Scale: AS SHOWN
Rev: R4
Drg. No: VLE/DE-BR/HW/GEN/ VER/01

TYPICAL CROSS SECTION



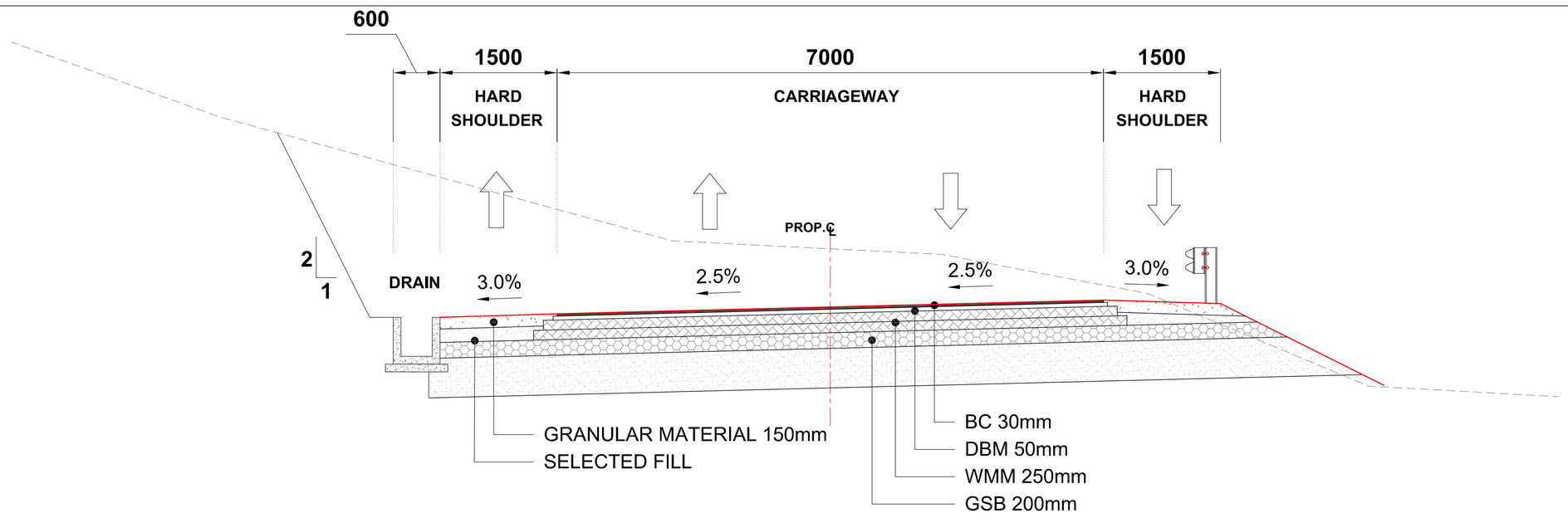
TCS - 1

(WIDENING SECTION)

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS Regd. No- 11/2004-05 BHUBANESWAR



TCS - 2

(NEW ALIGNMENT)

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : Global Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil testing Laboratory & Engineering Consultants) Approved by Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

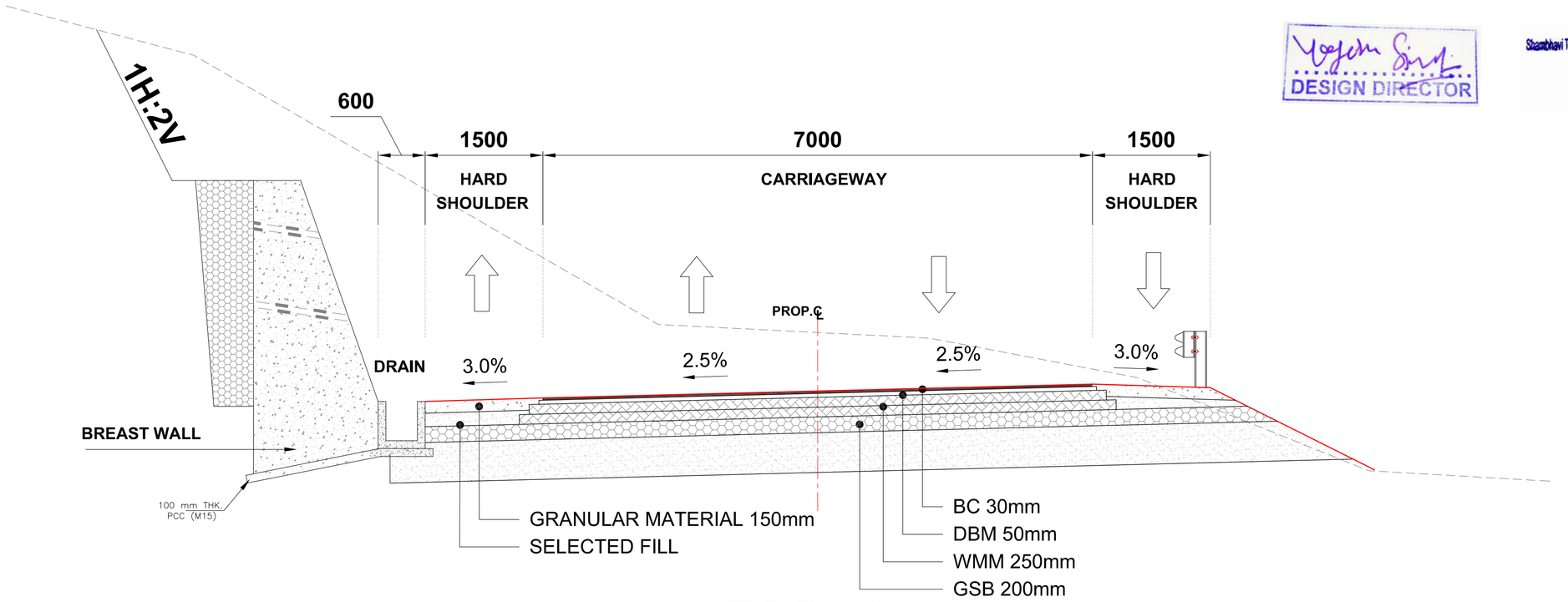
Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018.
Website : www.spstpl.com
Email : info@spstpl.com

Project: DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

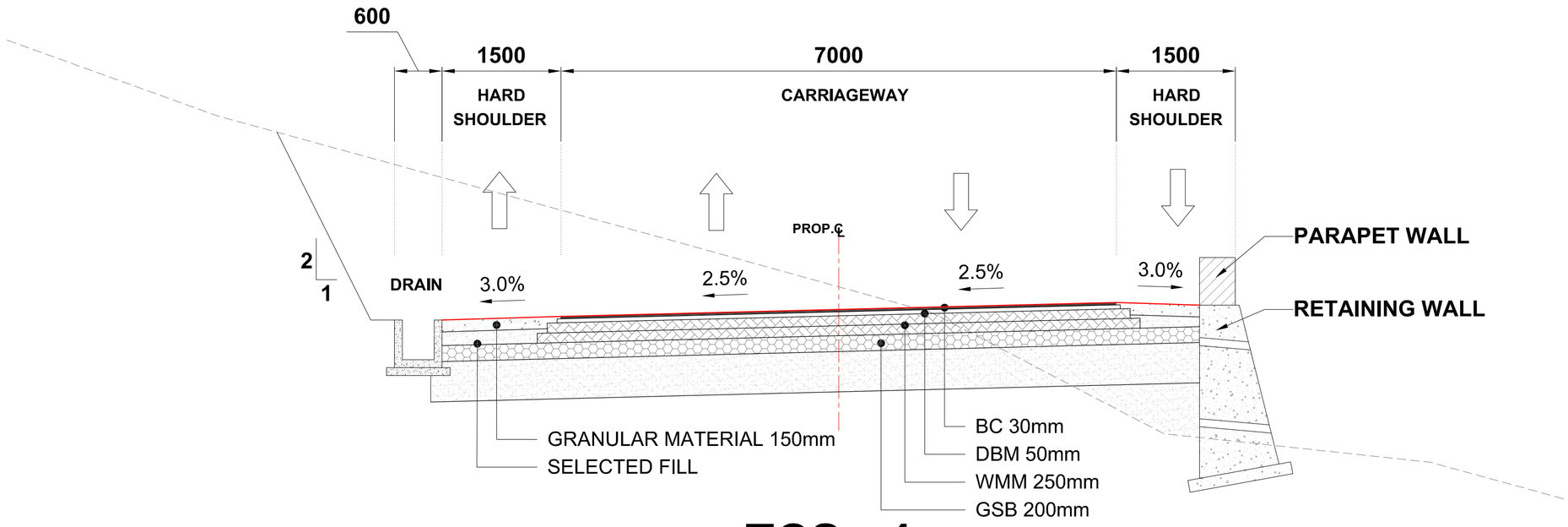
Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP. -2022

Title: TYPICAL CROSS SECTION
Scale: AS SHOWN
Rev: R4
Drg. No: VLE/DE-BR/HW/GEN/TCS/01



TCS - 3

(NEW ALIGNMENT WITH BREAST WALL)



TCS - 4

(NEW ALIGNMENT WITH RETAINING WALL)

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : **Glabal Infra Solutions**
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : **Valecha Engineering Ltd**
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil testing Laboratory & Engineering Consultant) Approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

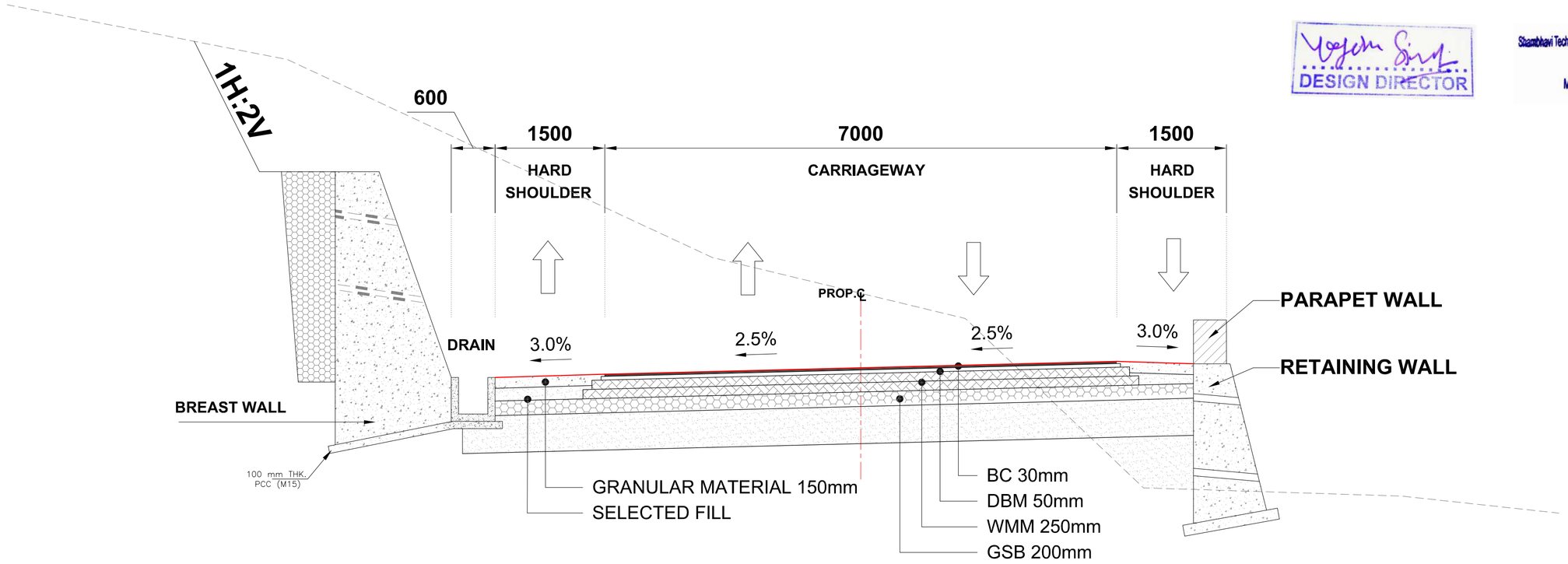
Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : **SPS Technocrats Pvt. Ltd.**
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018.
Website : www.spstpl.com
Email : Info@spstpl.com

Project: **DEMWE - BRAHMKUND (NH-13)**
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

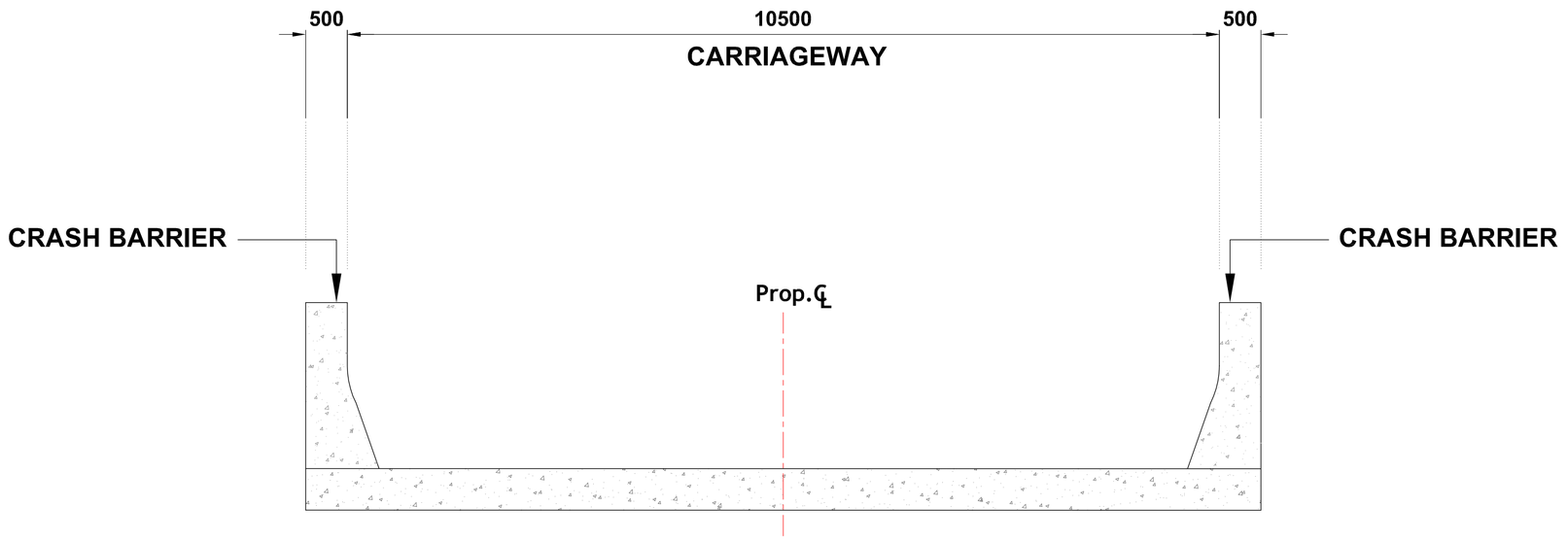
Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP. -2022

Title: **TYPICAL CROSS SECTION**
Scale: **AS SHOWN**
Rev: **R4**
Drg. No: **VLE/DE-BR/HW/GEN/ TCS/02**



TCS - 5

(NEW ALIGNMENT WITH BREAST WALL & RETAINING WALL)



TCS - 6

Minor Bridge with 2-Lane Carriageway

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : Global Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS
(An ISO 9001 : 2008 Certified) (Soil testing Laboratory & Engineering Consultancy) approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

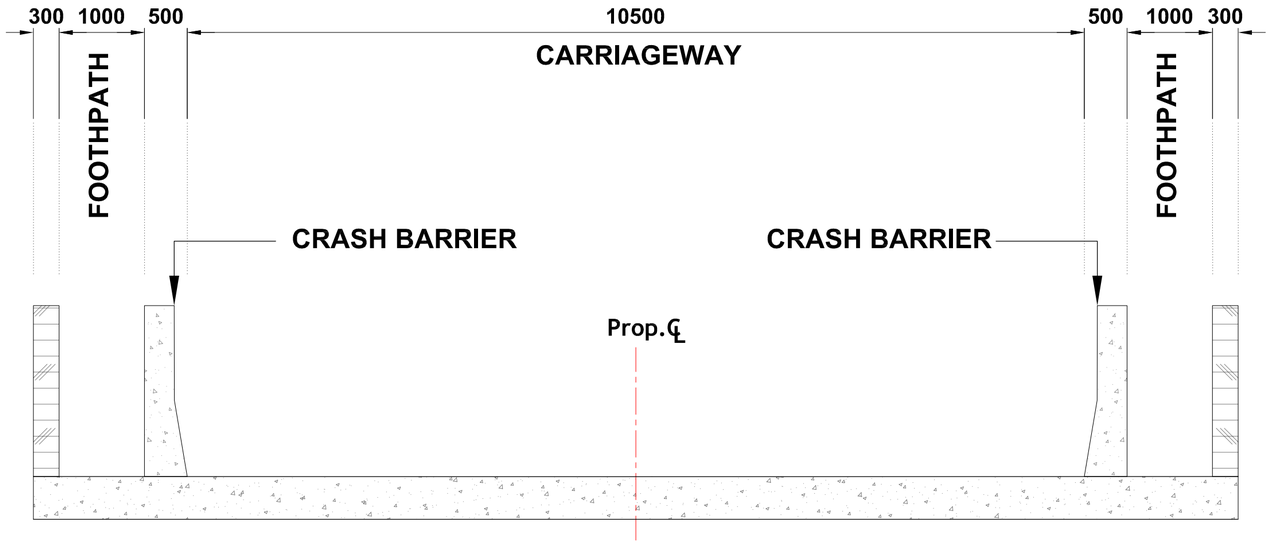
Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Purl, Boring Road, Patna-800001

Design Consultant : SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018.
Website : www.spstpl.com
Email : info@spstpl.com

Project: DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE – BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP. -2022

Title: TYPICAL CROSS SECTION
Scale: AS SHOWN
Rev: R4
Drg. No: VLE/DE-BR/HW/GEN/TCS/03



TCS - 7

Major Bridge with 2-Lane Carriageway

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client :
NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer :
Glabal Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor :
Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-5, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant :
SUVADRA CONSULTANTS
(An ISO 9001 : 2008 Certified)
(Soil testing Laboratory & Engineering Consultancy) approved by Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant :
SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant :
SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018.
Website : www.spstpl.com
Email : info@spstpl.com

Project:
DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	**SEP. -2022**

Title: **TYPICAL CROSS SECTION**
Scale: **AS SHOWN**
Rev: **R4**
Drg. No: **VLE/DE-BR/HW/GEN/TCS/04**

PLAN & LONGITUDINAL PROFILE

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE

BRAHMAKUND

START OF PROJECT CH - 0+000

HIP NO. 1 @ CH.(m) 52.882
X(m)=233069.455 Y(m)=3089381.836
R (m) 90 Ls (m) 15.000
Dc(deg) 40.843 S(m) 0.104
Lc(m) 64.153 Ts(deg) 4.775
Ts(m) 49.889 D(deg) 50.390
Es(m) 9.578 e(%) 4.44%
Design Speed (V): 30 kmph

HIP NO. 2 @ CH.(m) 160.94
X(m)=233135.076 Y(m)=3089472.532
R (m) 50 Ls (m) 20.000
Dc(deg) 20.409 S(m) 0.333
Lc(m) 17.810 Ts(deg) 11.459
Ts(m) 29.960 D(deg) 43.527
Es(m) 4.159 e(%) 7.00%
Design Speed (V): 30 kmph

HIP NO. 3 @ CH.(m) 224.6
X(m)=233198.691 Y(m)=3089484.651
R (m) 150 Ls (m) 15.000
Dc(deg) 2.722 S(m) 0.063
Lc(m) 7.126 Ts(deg) 2.865
Ts(m) 18.587 D(deg) 8.452
Es(m) 0.472 e(%) 2.67%
Design Speed (V): 30 kmph

HIP NO. 4 @ CH.(m) 284.148
X(m)=233259.927 Y(m)=3089506.021
R (m) 30 Ls (m) 30.000
Dc(deg) 23.396 S(m) 1.250
Lc(m) 41.421 Ts(deg) 28.648
Ts(m) 22.250 D(deg) 80.955
Es(m) 11.002 e(%) 7.00%
Design Speed (V): 30 kmph

HIP NO. 5 @ CH.(m) 354.918
X(m)=233328.225 Y(m)=3089433.814
R (m) 30 Ls (m) 30.000
Dc(deg) 16.390 S(m) 1.250
Lc(m) 8.896 Ts(deg) 28.648
Ts(m) 38.347 D(deg) 74.286
Es(m) 8.252 e(%) 7.00%
Design Speed (V): 30 kmph

HIP NO. 6 @ CH.(m) 447.626
X(m)=233213.349 Y(m)=3089352.909
R (m) 150 Ls (m) 30.000
Dc(deg) 6.650 S(m) 1.250
Lc(m) 32.280 Ts(deg) 28.648
Ts(m) 67.812 D(deg) 31.523
Es(m) 11.845 e(%) 7.00%
Design Speed (V): 30 kmph

HIP NO. 7 @ CH.(m) 592.213
X(m)=233374.634 Y(m)=3089304.226
R (m) 70 Ls (m) 15.000
Dc(deg) 37.839 S(m) 0.134
Lc(m) 46.229 Ts(deg) 6.139
Ts(m) 40.288 D(deg) 50.117
Es(m) 7.421 e(%) 5.71%
Design Speed (V): 30 kmph

CULVERT NO. 0/1
CHAINAGE(m) 151
TYPE : BOX CULVERT
SIZE : 3mx3m
PROPOSAL : RECONST.

BRIDGE NO. 0/1
CHAINAGE(m) 295
TYPE : MINOR BRIDGE
PROPOSAL : NEW

CULVERT NO. 0/2
CHAINAGE(m) 0.0
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : RECONST.

CULVERT NO. 0/3
CHAINAGE(m) 480
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : RECONST.

CULVERT NO. 0/4
CHAINAGE(m) 660
TYPE : BOX CULVERT
SIZE : 1200x3m
PROPOSAL : RECONST.

PILLAR GPS1
X(m)=233018.346
Y(m)=3089372.524
Z(m)=296.017

PILLAR GPS1A
X(m)=233076.453
Y(m)=3089390.996
Z(m)=299.259

PILLAR TBM2
X(m)=233269.581
Y(m)=3089466.691
Z(m)=318.024

PILLAR TBM3
X(m)=233230.302
Y(m)=3089340.875
Z(m)=327.074

Guard Wall
HILL
VALLEY
WATERLINE
100
200
300
400
500
600

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS BHUBANESWAR Regd. No: 11120/04-05

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : **Glabal Infra Solutions**
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : **Valecha Engineering Ltd**
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) Approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : **SPS Technocrats Pvt. Ltd.**
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project:
DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.446 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE**
(From Km 0+000 to Km 0+500)

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet)
Hor: 10 0 10 20
Ver: 1 0 1 2

Rev: R4

Drg. No: VLE/DE-BR/HW/PNP/01

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE ← → BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd
Managing Director

SUVADRA CONSULTANTS Regd. No- 11/2004-05 BHUBANESWAR

PROPOSED ROAD
EXISTING LEVEL AT PROP. CL
EXIST. GROUND @ RHS SHOULDER EDEG
EXIST. GROUND @ LHS SHOULDER EDEG

BRIDGE NO. : 0/1
CHAINAGE : 295
PROP SPAN : 1x10m

BOX CULVERT , (1x3mx3m)
CHAINAGE=151m

BOX CULVERT , (1x2mx2m)
CHAINAGE=410m

BOX CULVERT , (1x2mx2m)
CHAINAGE=480m

CHAINAGE=0.000m
LEVEL=295.766m
CHAINAGE=7.667m
LEVEL=295.769m
CHAINAGE=30.067m
LEVEL=297.456m
CHAINAGE=324.560m
LEVEL=417.540m
CHAINAGE=328.634m
LEVEL=477.540m

Level Datum(M) = 290

FINISHED ROAD LEVELS (M)	295.766 296.237 296.798 297.452 298.151 298.851 299.550 300.250 300.949 301.649 302.348 303.048 303.747 304.447 305.146 305.846 306.545 307.245 307.944 308.644 309.343 310.043 310.742 311.442 312.141 312.841 313.540 314.240 314.939 315.639 316.338 317.038 317.737 318.437 319.136 319.836 320.535 321.235 321.934 322.634 323.334 324.033 324.732 325.427 326.114 326.795 327.469 328.136 328.796 329.454 330.113
EXIST LEVELS AT PROP. CL (M)	295.723 296.143 296.567 297.057 297.633 298.278 298.866 299.394 299.971 300.588 301.260 302.046 302.457 302.600 304.152 304.936 305.819 306.780 307.577 308.198 308.851 309.577 310.205 310.943 311.760 312.426 314.026 314.683 315.729 316.799 316.649 317.069 318.022 318.485 319.255 320.016 320.839 321.361 324.120 325.242 323.574 323.601 324.106 326.253 330.093 332.999 329.879 328.442 328.721 329.274 329.920
EXISTING GROUND AT LHS SHOULDER EDGE LVL (M)	295.676 296.039 296.549 296.968 297.454 298.801 298.624 301.541 302.490 303.887 304.767 305.533 305.352 305.065 304.767 304.388 306.126 307.159 309.386 310.238 309.667 309.775 310.444 313.249 314.773 316.536 318.161 316.936 316.042 314.118 315.188 319.203 322.697 326.036 324.093 321.168 320.853 322.348 326.182 327.776 325.779 324.717 326.683 329.352 333.374 333.947 334.618 335.907 331.052 331.300 330.681
EXISTING GROUND AT RHS SHOULDER EDGE LVL (M)	295.815 296.153 296.488 296.983 297.633 298.394 299.055 299.620 300.103 300.703 301.343 301.947 302.568 303.255 304.102 302.107 305.632 306.455 307.322 308.156 308.869 309.533 310.311 311.140 311.817 312.739 313.684 314.608 314.554 313.690 316.420 317.239 317.883 318.532 318.592 318.450 320.846 321.435 321.965 322.499 323.228 323.491 323.956 324.452 327.085 329.885 327.537 328.092 328.693 329.379 330.026
HORIZONTAL SCHEMATIC (M)	L L=15.000m L=64.153m R=−90.000m L=15.000m L=32.077m L=20.000m R=50.000m L=17.810m L=20.000m L=16.192m L=15.000m L R L=15.000m R L=30.000m R=30.000m L=12.251m L=30.000m R L=30.000m R L=30.000m L=12.120m L=30.000m L=32.280m R=−30.000m L=30.000m
VERTICAL (G=%) SCHEMATIC (L=m),(R=M)	G R=1094.576m L=30.000m L G=6.995 L=387.473m R=−14566.207m L=60.000m
WIDENING SCHEMATIC (M) L R	3.500 4.400 4.400 3.500 3.500 4.700 4.700 3.500 3.500 4.100 4.100 3.500 3.500 5.000 5.000 3.500 3.500 5.000 5.000 3.500 3.500 3.500
SUPERELEVATION SCHEMATIC (e=%) L R	e=2.500 e=4.400 e=7.000 e=2.700 e=7.000 e=2.500 e=7.000 e=2.500 e=4.400 e=7.000 e=2.700 e=7.000 e=2.500 e=7.000 e=2.500
CHAINAGE (M)	0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360 370 380 390 400 410 420 430 440 450 460 470 480 490 500

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : Glabal Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) (upgraded By Govt. of Orissa Regd. No. 11 of 2004-05)
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: **DEMWE - BRAHMKUND (NH-13)**
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE – BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH

Date: **SEP.-2022**

Title: **PLAN & LONGITUDINAL PROFILE** *(From Km 0+000 to Km 0+500)*

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet) Hor: 10 0 10 20 Ver: 1 0 1 2

Rev: **R4**

Drg. No: **VLE/DE-BR/HW/PNP/01A**

LEGEND :

PLAN :

EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

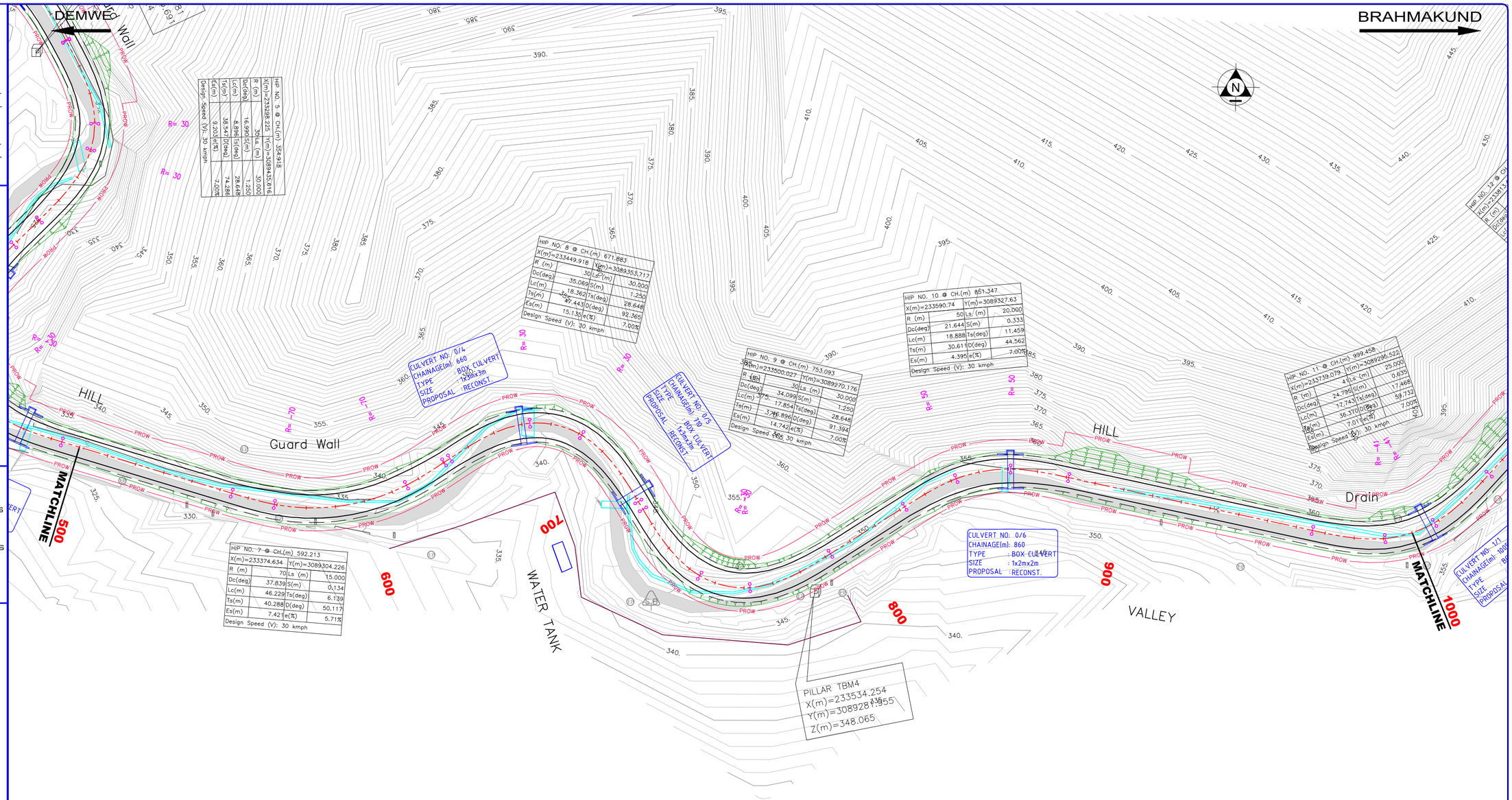
1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT



DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS Regd. No- 11/2004-05 BHUBANESWAR

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client :
NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer :
Glabal Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor :
Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant :
SUVADRA CONSULTANTS
(An ISO 9001 : 2008 Certified)
(Soil Testing Laboratory & Engineering Consultant) Licensed By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant :
SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant :
SPS Technocrats Pvt. Ltd.
 # 638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project:
DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH 0.000 TO CH 18.444 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	**SEP.-2022**

Title: **PLAN & LONGITUDINAL PROFILE** *(From Km 0+500 to Km 1+000)*

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet)
Hor: 10 0 10 20
Ver: 1 0 1 2

Rev: **R4**

Drg. No: **VLE/DE-BR/HW/PNP/02**

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE ← → BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS Regd. No- 111/2004-05 BHUBANESWAR

PROPOSED ROAD
EXISTING LEVEL AT PROP. CL
EXIST. GROUND @ RHS SHOULDER EDEG
EXIST. GROUND @ LHS SHOULDER EDEG

BOX CULVERT , (1x3m x3m) CHAINAGE=660m
BOX CULVERT , (1x3m x3m) CHAINAGE=790m
CHAINAGE=776.833m LEVEL=348.337m
CHAINAGE=836.833m LEVEL=351.372m
BOX CULVERT , (1x2m x2m) CHAINAGE=860m
CHAINAGE=969.121m LEVEL=357.129m
BOX CULVERT , (1x2m x2m)

Level Datum(M) = 315

FINISHED ROAD LEVELS (M)	330.113 330.771 331.429 332.088 332.746 333.404 334.062 334.721 335.379 336.037 336.696 337.354 338.012 338.671 339.329 339.987 340.646 341.304 341.962 342.621 343.279 343.937 344.596 345.254 345.912 346.571 347.229 347.887 348.544 349.169 349.756 350.302 350.809 351.276 351.705 352.125 352.545 352.965 353.385 353.805 354.225 354.645 355.066 355.486 355.906 356.326 356.746 357.166 357.603 358.070 358.566
EXIST LEVELS AT PROP. CL (M)	329.920 330.411 330.995 331.558 332.140 332.704 333.241 333.755 334.153 334.455 334.784 337.279 338.336 337.833 337.964 338.826 339.718 340.243 340.934 342.396 342.977 342.949 344.386 347.837 350.713 348.245 347.222 347.375 348.055 348.532 349.535 349.546 350.154 350.665 351.175 351.698 351.958 352.581 353.124 354.703 353.482 353.783 354.253 354.689 355.220 355.787 356.280 356.787 357.207 357.636 358.575
EXISTING GROUND AT LHS SHOULDER EDGE LVL (M)	330.681 331.740 332.899 335.187 335.878 335.432 334.854 334.769 335.403 337.222 337.955 340.135 340.122 339.869 340.187 338.347 339.463 340.346 342.838 345.389 345.203 344.455 346.478 349.884 352.120 353.702 352.400 351.405 351.805 352.284 354.286 353.471 352.556 352.392 353.650 354.640 355.506 355.647 359.751 360.493 359.912 360.223 360.571 358.795 357.790 358.406 358.628 359.430 359.956 362.259 362.955
EXISTING GROUND AT RHS SHOULDER EDGE LVL (M)	330.026 330.605 331.092 331.693 332.340 332.826 333.222 333.472 333.890 334.488 334.936 334.952 336.074 337.153 338.057 338.593 337.460 340.080 340.813 341.455 342.082 342.718 343.277 346.179 346.171 345.963 346.799 347.533 348.074 348.630 349.190 349.721 350.206 350.448 351.117 351.565 351.999 352.355 352.726 353.155 353.551 353.940 354.355 354.791 355.372 355.977 356.413 356.833 357.291 357.798 358.398
HORIZONTAL SCHEMATIC (M)	L=60.332m; L=15.000m; L=46.229m; R=−70.000m; L=15.000m; L; L=30.000m; R=30.000m; L=18.362m; L=30.000m; L; L=30.000m; L=17.853m; R=−30.000m; L=30.000m; L=29.884m; L=20.000m; R=50.000m; L=18.888m; L=20.000m; L=84.795m; L=25.000m; L=17.743m; R=−41.000m
VERTICAL (G=%) SCHEMATIC (L=m),(R=M)	G=6.583; L=299.293m; L=60.000m R=−2518.113m; G=4.200 L=132.288m; R=3393.993m L=60.000m
WIDENING SCHEMATIC (M) L R	3.500 4.400 4.400 3.500 3.500 3.500 3.500 5.000 5.000 3.500 3.500 5.000 5.000 3.500 3.500 4.700 4.700 3.500 3.500 4.700
SUPERELEVATION SCHEMATIC (e=%) L R	e=2.500 e=2.500 e=5.700 e=7.000 e=7.000 e=7.000 e=2.500 e=7.000
CHAINAGE (M)	500 510 520 530 540 550 560 570 580 590 600 610 620 630 640 650 660 670 680 690 700 710 720 730 740 750 760 770 780 790 800 810 820 830 840 850 860 870 880 890 900 910 920 930 940 950 960 970 980 990 1000

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : **Glabal Infra Solutions**
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : **Valecha Engineering Ltd**
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) Approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : **SPS Technocrats Pvt. Ltd.**
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: **DEMWE - BRAHMKUND (NH-13)**
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE** *(From Km 0+500 to Km 1+000)*
Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet) Hor: 10 0 10 20 Ver: 1 0 1 2
Rev: **R4**
Drg. No: **VLE/DE-BR/HW/PNP/02A**

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE

BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS BHUBANESWAR Regd No- 111/2004-05

MATCHLINE 1000

MATCHLINE 1500

HIP NO. 11 @ CH.(m) 999.458
X(m)=233739.079 Y(m)=3089236.522
R (m) 41 Ls (m) 25.000
Dc(deg) 24.705 S(m) 9.635
Lc(m) 17.443 Ts(deg) 17.468
Ts(m) 36.310 D(deg) 39.732
Es(m) 7.017 e(%) 7.000
Design Speed (V): 30 kmph

HIP NO. 12 @ CH.(m) 1107.081
X(m)=233813.453 Y(m)=3089376.739
R (m) 350 Ls (m) 15.000
Dc(deg) 1.585 S(m) 0.027
Lc(m) 9.683 Ts(deg) 1.228
Ts(m) 19.848 D(deg) 4.041
Es(m) 0.245 e(%) 3.17%
Design Speed (V): 50 kmph

HIP NO. 13 @ CH.(m) 1291.877
X(m)=233928.449 Y(m)=3089521.61
R (m) 70 Ls (m) 15.000
Dc(deg) 8.454 S(m) 0.134
Lc(m) 10.329 Ts(deg) 6.139
Ts(m) 20.326 D(deg) 20.732
Es(m) 1.298 e(%) 6.71%
Design Speed (V): 30 kmph

HIP NO. 14 @ CH.(m) 1412.918
X(m)=234032.696 Y(m)=3089583.82
R (m) 115 Ls (m) 20.000
Dc(deg) 8.949 S(m) 0.145
Lc(m) 17.961 Ts(deg) 4.982
Ts(m) 29.176 D(deg) 18.913
Es(m) 1.731 e(%) 6.18%
Design Speed (V): 40 kmph

PILLAR TBM6
X(m)=234049.130
Y(m)=3089633.830
Z(m)=387.111

PILLAR TBM5
X(m)=233821.521
Y(m)=3089376.908
Z(m)=364.846

CULVERT NO: 1/1
CHAINAGE(m): 1005
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

CULVERT NO: 1/2
CHAINAGE(m): 1160
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : RECONST.

BRIDGE NO : 1/1
CHAINAGE(m): 1332
TYPE : MINOR BRIDGE
SIZE : 1X12m
PROPOSAL : NEW

CULVERT NO: 1/3
CHAINAGE(m): 1480
TYPE : BOX CULVERT
SIZE : 1x3mx3m
PROPOSAL : NEW

Drain
HILL
VALLEY

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : **Glabal Infra Solutions**
E-811A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : **Valecha Engineering Ltd**
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : **SPS Technocrats Pvt. Ltd.**
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: **DEMWE - BRAHMKUND (NH-13)**
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE – BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH

Date: **SEP.-2022**

Title: **PLAN & LONGITUDINAL PROFILE**
(From Km 1+000 to Km 1+500)

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet)
Hor: 10 0 10 20
Ver: 1 0 1 2

Rev: R4

Drg. No: **VLE/DE-BR/HW/PNP/03**

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

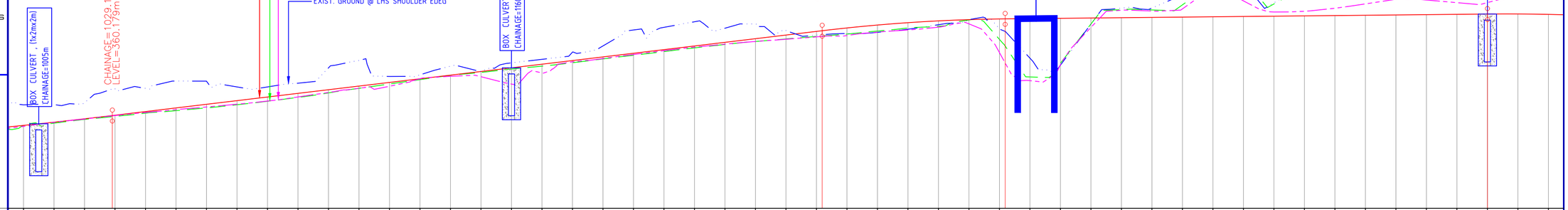
PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE ← → BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd
Managing Director

SUVADRA CONSULTANTS Regd. No. 11/2004-05 BHUBANESWAR



| | | |

LEGEND :

PLAN :

EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Dir.
Managing Director

SUVADRA CONSULTANTS Regd. No: 11/2004-05 BHUBANESWAR

DEMWE

BRAHMAKUND

HILL

Drain

Drain

VALLEY

MATCHLINE

MATCHLINE

PILLAR TBM7
X(m)=234157.096
Y(m)=3089731.066
Z(m)=398.984

PILLAR GPS-2A
X(m)=234261.922
Y(m)=3089859.922
Z(m)=475.696

PILLAR GPS-2
X(m)=234213.513
Y(m)=3089791.611
Z(m)=406.515

GPS

GPS

HIP NO. 16 @ CH.(m) 1626.271

X(m)=234207.562		Y(m)=3089698.872	
R (m)	150	Ls (m)	15.000
Dc(deg)	30.392	S(m)	0.063
Lc(m)	79.567	Ts(deg)	2.869
Ts(m)	56.434	D(deg)	56.122
Es(m)	7.840	e(%)	4.74%
Design Speed (V): 40 kmph			

HIP NO. 17 @ CH.(m) 1796.553

X(m)=234303.783		Y(m)=3089840.024	
R (m)	70	Ls (m)	15.000
Dc(deg)	1.899	S(m)	0.134
Lc(m)	2.320	D(deg)	6.139
Ts(m)	16.218	D(deg)	44.577
Es(m)	0.674	e(%)	5.71%
Design Speed (V): 30 kmph			

HIP NO. 18 @ CH.(m) 1838.766

X(m)=234320.752		Y(m)=3089886.481	
R (m)	20	Ls (m)	20.000
Dc(deg)	38.254	S(m)	0.833
Lc(m)	13.353	Ts(deg)	28.648
Ts(m)	32.873	D(deg)	95.549
Es(m)	11.000	e(%)	7.008%
Design Speed (V): 20 kmph			

HIP NO. 15 @ CH.(m) 1510.54

X(m)=234096.36		Y(m)=3089658.995	
R (m)	105	Ls (m)	20.000
Dc(deg)	19.190	S(m)	0.159
Lc(m)	35.168	Ts(deg)	5.457
Ts(m)	38.276	D(deg)	30.104
Es(m)	3.895	e(%)	6.77%
Design Speed (V): 40 kmph			

CULVERT NO: 173
CHAINAGE(m): 1480
TYPE : BOX CULVERT
SIZE : 1x3mx3m
PROPOSAL : NEW

BRIDGE NO : 2/1
CHAINAGE(m) : 1924
TYPE : MAJOR BRIDGE
SIZE : 4x20m + 4x25m
PROPOSAL : NEW

BRIDGE NO : 2/1
CHAINAGE(m) : 2024
TYPE : MAJOR BRIDGE
SIZE : 4x20m + 4x25m
PROPOSAL : NEW

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client :
NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer :
Glabal Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor :
Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant :
SUVADRA CONSULTANTS
(An ISO 9001 : 2008 Certified)
(Soil Testing Laboratory & Engineering Consultant)
Approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant :
SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant :
SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project:
DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE**
(From Km 1+500 to Km 2+000)

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet)
Hor: 10 0 10 20
Ver: 1 0 1 2

Rev: R4

Drg. No: VLE/DE-BR/HW/PNP/04

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE ← → BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS Regd. No- 117/2004-05 BHUBANESWAR

PROPOSED ROAD
EXISTING LEVEL AT PROP. CL
EXIST. GROUND @ RHS SHOULDER EDEG
EXIST. GROUND @ LHS SHOULDER EDEG

CHAINAGE=1540.014m
LEVEL=375.699m
CHAINAGE=1808.766m
LEVEL=364.469m
CHAINAGE=1868.766m
LEVEL=363.219m

BRIDGE NO. : 1/2
CHAINAGE : 2024
PROP SPAN : 4x50m + 4x25m

Level Datum(M) = 340

FINISHED ROAD LEVELS (M)	376.746 376.602 376.379 376.078 375.699 375.281 374.864 374.446 374.028 373.610 373.192 372.774 372.356 371.938 371.521 371.103 370.685 370.267 369.849 369.431 369.013 368.596 368.178 367.760 367.342 366.924 366.506 366.088 365.671 365.253 364.835 364.418 364.043 363.738 363.503 363.338 363.242 363.215 363.215 363.215 363.215 363.215 363.215 363.215 363.215 363.215 363.215 363.215 363.215 363.215 363.215
EXIST LEVELS AT PROP. CL (M)	382.736 384.126 384.595 385.072 385.550 386.379 387.731 389.084 390.438 391.814 392.467 391.929 391.622 391.420 391.765 394.986 399.307 400.318 399.271 394.105 392.041 402.242 396.790 393.307 393.131 392.965 393.466 396.337 398.296 398.624 400.352 403.244 411.125 408.625 408.371 402.210 392.763 381.682 369.753 357.823 351.640 351.053 350.275 349.735 348.860 347.333 346.814 346.505 346.195 345.231 343.789
EXISTING GROUND AT LHS SHOULDER EDGE LVL (M)	383.836 384.307 384.558 385.057 385.551 386.668 388.020 389.372 390.735 391.890 393.188 392.794 392.499 392.304 392.895 396.183 399.682 400.263 400.514 396.860 397.128 403.154 402.525 398.072 397.896 397.725 398.214 400.431 403.438 404.959 406.634 411.692 412.503 413.966 412.819 406.368 395.420 383.293 371.364 359.434 351.867 351.383 350.691 350.109 349.320 348.487 347.227 346.912 346.550 346.186 344.376 344.007
EXISTING GROUND AT RHS SHOULDER EDGE LVL (M)	380.610 382.321 384.637 385.088 385.550 386.090 387.443 388.795 390.161 391.575 392.045 391.384 390.839 390.630 390.756 393.916 398.441 400.436 396.517 391.350 386.953 397.444 391.055 388.543 388.369 388.206 388.718 392.243 393.234 393.004 394.844 397.826 400.010 401.754 401.095 397.089 389.579 379.658 368.141 356.212 351.512 350.724 349.889 349.320 348.858 348.487 347.831 346.649 346.339 346.029 345.501 343.400
HORIZONTAL SCHEMATIC (M)	R=105.000m L=35.168m; L=20.000m; L=23.363m; L=15.000m; L=79.567m R=−150.000m; L=15.000m; L=98.338m; L=15.000m; L; L=15.000m R; L; R=20.000m L=13.352m; L=20.000m; L=20.000m; L=319.822m
VERTICAL SCHEMATIC (G=%) (L=m),(R=M)	R=−1282.435m L=60.000m; G=−4.179 L=268.752m; R=1435.888m L=60.000m; G=0.000 L=311.968m
WIDENING SCHEMATIC (M) L R	4.100 3.744 3.500; 3.500 4.100; 4.100 3.500; 3.500 4.400 4.400; 3.500 3.500; 5.000 5.000; 3.500
SUPERELEVATION SCHEMATIC (e=%) L R	e=6.800; e=4.700; e=2.500; e=5.700; e=7.000; e=2.500
CHAINAGE (M)	1500 1510 1520 1530 1540 1550 1560 1570 1580 1590 1600 1610 1620 1630 1640 1650 1660 1670 1680 1690 1700 1710 1720 1730 1740 1750 1760 1770 1780 1790 1800 1810 1820 1830 1840 1850 1860 1870 1880 1890 1900 1910 1920 1930 1940 1950 1960 1970 1980 1990 2000

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : **Glabal Infra Solutions**
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : **Valecha Engineering Ltd**
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) Approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : **SPS Technocrats Pvt. Ltd.**
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: **DEMWE - BRAHMKUND (NH-13)**
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE** *(From Km 1+500 to Km 2+000)*
Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet) Hor: 1 0 10 20 Ver: 1 0 1 2
Rev: **R4**
Drg. No: **VLE/DE-BR/HW/PNP/04A**

LEGEND :

PLAN : EXISTING

- EXIST. ROAD
- K-I/R : KACHA RESIDENTIAL
- K-I/C : KACHA COMMERCIAL
- SP-I/R : SEMI PUCCA RESI.
- SP-I/C : SEMI PUCCA COMM.
- P-I/R : PUCCA RESIDENTIAL
- P-I/C : PUCCA COMMERCIAL
- 1000 CONTOUR

PROPOSED:

- TOE LINE / SH EDGE
- C/W EDGE
- CEN.LINE
- C/W EDGE
- SH EDGE / TOE LINE
- HOR. TANGENT POINT
- PROW — PROPOSED ROW
- BRIDGE
- BOX CULVERT
- DRAIN
- COVERED DRAIN
- RETAINING WALL
- BREAST WALL

PROFILE :

- PROP. LEVEL
- EXIST. GROUND @ RHS SHOULDER EDGE LVL
- EXIST. LEVEL AT PRO. CL
- EXIST. GROUND @ RHS SHOULDER EDGE LVL
- VER. TANGENT POINT

DEMWE

BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd
Managing Director

SUVADRA CONSULTANTS Regd No- 1112004-05 BHUBANESWAR

MATCHLINE 2000

MATCHLINE 2500

2100 2200 2300 2400

1800 1900

R= 20 R= 20 R= 500 R= -305 R= -305

BRIDGE NO : 2/1
CHAINAGE(m): 2024
TYPE : MAJOR BRIDGE
SIZE : 4X50m + 4X25m
PROPOSAL : NEW

BRIDGE NO : 2/1
CHAINAGE(m): 1924
TYPE : MAJOR BRIDGE
SIZE : 4X50m + 4X25m
PROPOSAL : NEW

CULVERT NO: 2/2
CHAINAGE(m): 2230
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

HIP NO. 19 @ CH.(m) 2210.734			
X(m)=234666.061		Y(m)=3089720.94	
R (m)	20	Ls (m)	20.000
Dc(deg)	31.338	S(m)	0.833
Lc(m)	10.939	Ts(deg)	28.648
Ts(m)	30.260	D(deg)	88.634
Es(m)	9.118	e(%)	7.00%
Design Speed (V): 20 kmph			

HIP NO. 20 @ CH.(m) 2382.496			
X(m)=234589.384		Y(m)=3089650.885	
R (m)	305	Ls (m)	50.000
Dc(deg)	4.097	Sc(m)	0.000
Ls(m)	35.455	Ts(deg)	0.000
Ts(m)	17.865	e(deg)	0.000
Es(m)	0.325	e(%)	4.097
Design Speed (V): 50 kmph			

HIP NO. 21 @ CH.(m) 2457.220			
X(m)=234558.228		Y(m)=3089630.368	
R (m)	305	Ls (m)	50.000
Dc(deg)	3.720	Sc(m)	0.021
Ls(m)	19.721	Ts(deg)	1.409
Ts(m)	24.988	e(deg)	6.521
Es(m)	0.325	e(%)	3.643
Design Speed (V): 50 kmph			

HIP NO. 22	
X(m)=2344	
R (m)	
Dc(deg)	
Lc(m)	
Ts(m)	
Es(m)	
Design Sp	

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : **Glabal Infra Solutions**
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : **Valecha Engineering Ltd**
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : **SPS Technocrats Pvt. Ltd.**
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: **DEMWE - BRAHMKUND (NH-13)**
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE** *(From Km 2+000 to Km 2+500)*

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet)
Hor: 10 0 10 20
Ver: 1 0 1 2

Rev: R4

Drg. No: VLE/DE-BR/HW/PNP/05

LEGEND :

PLAN : EXISTING

- EXIST. ROAD
- K-I/R : KACHA RESIDENTIAL
- K-I/C : KACHA COMMERCIAL
- SP-I/R : SEMI PUCCA RESI.
- SP-I/C : SEMI PUCCA COMM.
- P-I/R : PUCCA RESIDENTIAL
- P-I/C : PUCCA COMMERCIAL
- 1000 CONTOUR

PROPOSED:

- TOE LINE
- SH EDGE
- C/W EDGE
- CEN.LINE
- C/W EDGE
- SH EDGE
- TOE LINE
- HOR. TANGENT POINT
- PROW — PROPOSED ROW
- BRIDGE
- BOX CULVERT
- DRAIN
- COVERED DRAIN
- RETAINING WALL
- BREAST WALL

PROFILE :

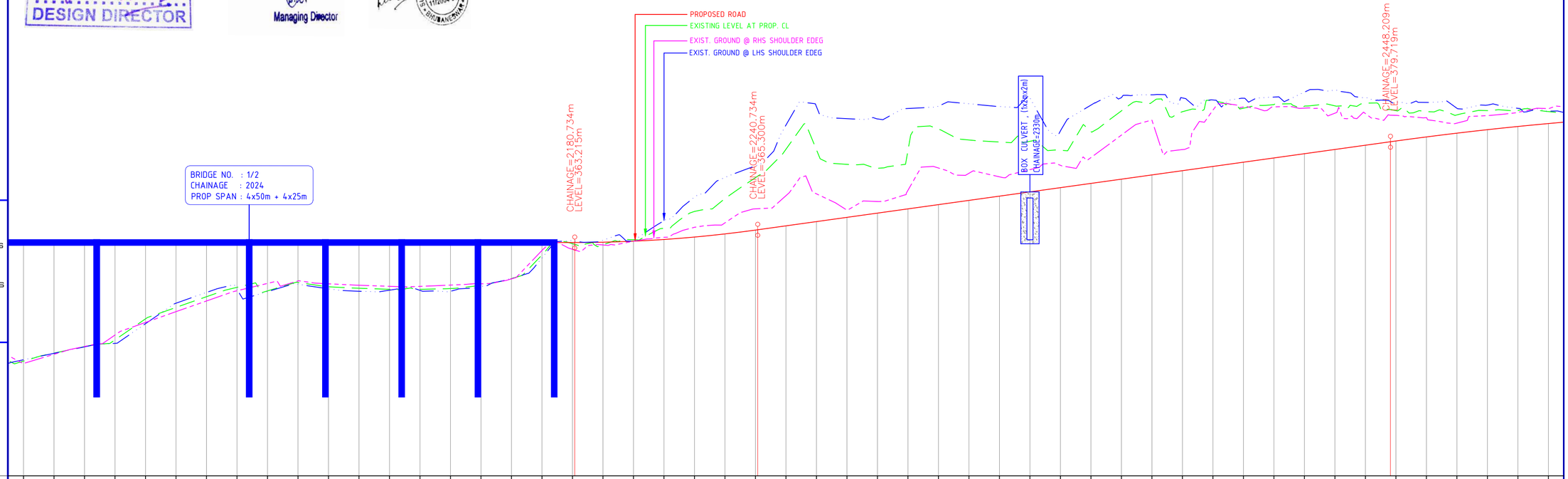
- PROP. LEVEL
- EXIST. GROUND @ RHS SHOULDER EDGE LVL
- EXIST. LEVEL AT PRO. CL
- EXIST. GROUND @ RHS SHOULDER EDGE LVL
- VER. TANGENT POINT

DEMWE ← → BRAHMAKUND

Vijay Singh DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd. Managing Director

SUVADRA CONSULTANTS Regd. No- 111/2004-05 BHUBANESWAR



FINISHED ROAD LEVELS (M)	363.215 363.215 363.215

LEGEND :

PLAN :

EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE

HOR. TANGENT POINT

PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL

VER. TANGENT POINT

DEMWE

BRAHMAKUND

MATCHLINE 2500

MATCHLINE 3000

2300 2400 2600 2700 2800 2900

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS Regd. No- 11/2004-05 BHUBANESWAR

CULVERT NO: 2/3
CHAINAGE(m): 2595
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

CULVERT NO: 2/4
CHAINAGE(m): 2700
TYPE : 1x2mx2m
SIZE : BOX CULVERT
PROPOSAL : NEW

CULVERT NO: 2/5
CHAINAGE(m): 2886
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

CULVERT NO: 2/1
CHAINAGE(m): 2120.67
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

HIP NO. 22 @ CH.(m) 2544.716	
X(m)=2344098.724	Y(m)=3089442.508
R (m)	105
Dc(deg)	48.692
Lc(m)	89.232
Ts(m)	70.228
Es(m)	16.186
Design Speed (V): 30 kmph	
Ls (m)	20.000
S(m)	0.159
Ts(deg)	5.457
D(deg)	59.605
e(%)	6.77%

HIP NO. 23 @ CH.(m) 2764.06	
X(m)=234746.42	Y(m)=3089511.703
R (m)	105
Dc(deg)	48.692
Lc(m)	89.232
Ts(m)	70.228
Es(m)	16.186
Design Speed (V): 40 kmph	
Ls (m)	20.000
S(m)	0.159
Ts(deg)	5.457
D(deg)	59.605
e(%)	6.77%

HIP NO. 24 @ CH.(m) 2872.607	
X(m)=234852.533	Y(m)=3089461.468
R (m)	70
Dc(deg)	44.647
Lc(m)	54.546
Ts(m)	45.517
Es(m)	9.776
Design Speed (V): 30 kmph	
Ls (m)	15.000
S(m)	0.134
Ts(deg)	6.139
D(deg)	56.924
e(%)	5.71%

HIP NO. 25 @ CH.(m) 2980.802	
X(m)=234956.218	Y(m)=3089523.235
R (m)	130
Dc(deg)	14.453
Lc(m)	32.788
Ts(m)	31.683
Es(m)	2.301
Design Speed (V): 40 kmph	
Ls (m)	15.000
S(m)	0.072
Ts(deg)	3.208
D(deg)	21.066
e(%)	5.47%

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : **Glabal Infra Solutions**
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : **Valecha Engineering Ltd**
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) Approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : **SPS Technocrats Pvt. Ltd.**
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: **DEMWE - BRAHMKUND (NH-13)**
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE** *(From Km 2+500 to Km 3+000)*
Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet) Hor: 10 0 10 20 Ver: 1 0 1 2
Rev: **R4**
Drg. No: **VLE/DE-BR/HW/PNP/06**

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE ← → BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd
Managing Director

SUVADRA CONSULTANTS Regd. No- 11/2004-05 BHUBANESWAR

PROPOSED ROAD
EXISTING LEVEL AT PROP. CL
EXIST. GROUND @ RHS SHOULDER EDEG
EXIST. GROUND @ LHS SHOULDER EDEG

CHAINAGE=2508.209m LEVEL=383.058m
BOX CULVERT , (1x2mx2m) CHAINAGE=2595m
CHAINAGE=2615.421m LEVEL=387.537m
CHAINAGE=2675.421m LEVEL=390.875m
BOX CULVERT , (1x2mx2m) CHAINAGE=2700m
CHAINAGE=2775.128m LEVEL=397.805m
CHAINAGE=2835.128m LEVEL=400.341m
BOX CULVERT , (1x2mx2m) CHAINAGE=2886m
CHAINAGE=2925.127m LEVEL=401.695m
CHAINAGE=2985.127m LEVEL=403.093m

Level Datum(M) = 370

FINISHED ROAD LEVELS (M)	382.699 383.132 383.550 383.968 384.386 384.804 385.221 385.639 386.057 386.475 386.892 387.310 387.733 388.195 388.703 389.258 389.858 390.505 391.193 391.888 392.583 393.278 393.973 394.668 395.363 396.058 396.753 397.448 398.133 398.738 399.253 399.676 400.010 400.252 400.414 400.565 400.715 400.866 401.016 401.167 401.317 401.468 401.618 401.772 401.950 402.155 402.387 402.647 402.935 403.247 403.562
EXIST LEVELS AT PROP. CL (M)	384.662 384.790 383.676 383.264 382.600 382.797 383.499 384.322 386.374 388.370 388.599 388.274 388.108 388.113 387.529 387.891 388.391 389.085 390.006 391.590 391.537 392.711 393.575 394.192 396.218 398.243 399.580 399.242 399.480 400.117 400.017 400.316 399.889 399.810 399.863 399.689 400.045 400.356 400.677 400.870 400.904 401.005 401.140 401.418 401.732 401.768 402.220 402.499 403.199 403.586 403.976 403.922
EXISTING GROUND AT LHS SHOULDER EDGE LVL (M)	384.775 384.280 384.017 383.154 382.389 383.096 383.899 384.326 385.783 389.157 390.314 387.754 387.320 387.627 387.917 387.751 388.184 389.509 390.452 391.285 391.261 392.372 392.957 393.910 395.888 397.578 399.786 399.578 399.780 400.842 400.397 400.210 399.984 399.639 399.979 400.316 400.344 400.584 400.692 400.989 401.169 401.178 401.290 401.351 400.539 401.801 402.294 402.499 403.208 403.629 403.898
EXISTING GROUND AT RHS SHOULDER EDGE LVL (M)	385.146 385.801 384.533 383.342 382.270 382.895 383.504 384.252 386.845 387.631 387.871 388.329 388.386 388.251 388.006 388.180 388.619 389.440 390.237 391.104 391.691 392.884 394.573 395.145 396.567 397.812 399.075 399.134 399.499 399.982 399.659 400.038 399.837 399.773 399.331 399.800 400.621 400.843 400.788 400.746 400.869 400.888 401.128 400.278 400.785 402.036 402.643 403.326 404.106 403.798 405.318
HORIZONTAL SCHEMATIC (M)	0m L=30.000m R=−36.000m L=61.793m L=30.000m L=93.832m L=20.000m R=105.000m L=89.232m L=20.000m L L=15.000m R=−70.000m L=54.547m L=15.000m L=44.526m L=15.000m R=−130.000m L=32.792m
VERTICAL (G=%) SCHEMATIC (L=m),(R=M)	G=4.178 L=107.212m R=2164.344m L=60.000m G=6.950 L=99.707m R=−1101.872m L=60.000m G=1.505 L=90.000m R=3637.511m L=60.000m
WIDENING SCHEMATIC (M) L R	5.000 5.000 3.500 3.500 4.100 4.100 3.501 4.400 4.400 3.500 3.500 4.100
SUPERELEVATION SCHEMATIC (e=%) L R	e=7.000 e=2.500 e=2.500 e=6.800 e=6.800 e=5.700 e=2.500 e=5.500 e=7.000 e=2.500 e=2.500 e=5.700 e=2.500 e=5.500
CHAINAGE (M)	2500 2510 2520 2530 2540 2550 2560 2570 2580 2590 2600 2610 2620 2630 2640 2650 2660 2670 2680 2690 2700 2710 2720 2730 2740 2750 2760 2770 2780 2790 2800 2810 2820 2830 2840 2850 2860 2870 2880 2890 2900 2910 2920 2930 2940 2950 2960 2970 2980 2990 3000

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : Glabal Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) Approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: **DEMWE - BRAHMKUND (NH-13)**
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE** *(From Km 2+500 to Km 3+000)*
Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet) Hor: 10 0 10 20 Ver: 1 0 1 2
Rev: **R4**
Drg. No: **VLE/DE-BR/HW/PNP/06A**

LEGEND :

PLAN :

EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE

BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd
Managing Director

SUVADRA CONSULTANTS Regd. No: 1112004-05 BHUBANESWAR

HIP NO. 26 @ CH.(m) 3132.303			
X(m)=235098.38	Y(m)=3089707.814		
R (m)	30	Ls (m)	20.000
Dc(deg)	114.899	S(m)	0.558
Lc(m)	60.161	Ts(deg)	19.099
Ts(m)	137.709	D(deg)	153.038
Es(m)	101.349	e(%)	7.00%
Design Speed (V): 25 kmph			

HIP NO. 27 @ CH.(m) 3238.805			
X(m)=235059.676	Y(m)=3089513.875		
R (m)	90	Ls (m)	25.000
Dc(deg)	34.358	S(m)	0.289
Lc(m)	51.970	Ts(deg)	1.958
Ts(m)	54.868	D(deg)	50.274
Es(m)	9.725	e(%)	7.00%
Design Speed (V): 40 kmph			

HIP NO. 28 @ CH.(m) 3316.468			
X(m)=235111.312	Y(m)=3089451.973		
R (m)	120	Ls (m)	20.000
Dc(deg)	3.849	S(m)	0.139
Lc(m)	8.062	Ts(deg)	4.775
Ts(m)	24.109	D(deg)	13.399
Es(m)	0.965	e(%)	5.93%
Design Speed (V): 40 kmph			

HIP NO. 29 @ CH.(m) 3375.972			
X(m)=235137.838	Y(m)=3089398.614		
R (m)	200	Ls (m)	15.000
Dc(deg)	0.678	S(m)	0.047
Lc(m)	2.367	Ts(deg)	2.149
Ts(m)	16.191	D(deg)	4.978
Es(m)	0.236	e(%)	3.56%
Design Speed (V): 40 kmph			

HIP NO. 30 @ CH.(m) 3452.777			
X(m)=235165.973	Y(m)=3089327.035		
R (m)	70	Ls (m)	15.000
Dc(deg)	4.921	S(m)	0.134
Lc(m)	6.012	Ts(deg)	6.139
Ts(m)	18.103	D(deg)	17.199
Es(m)	0.933	e(%)	5.71%
Design Speed (V): 30 kmph			

HIP NO. 31 @ CH.(m) 3489.49			
X(m)=235188.997	Y(m)=3089298.251		
R (m)	80	Ls (m)	15.000
Dc(deg)	2.201	S(m)	0.117
Lc(m)	3.073	Ts(deg)	5.371
Ts(m)	16.586	D(deg)	12.944
Es(m)	0.631	e(%)	5.00%
Design Speed (V): 30 kmph			

HIP NO. 32 @ CH.(m) 3561.6			
X(m)=235222.536	Y(m)=3089228.597		
R (m)	33	Ls (m)	30.000
Dc(deg)	26.287	S(m)	1.136
Lc(m)	15.140	Ts(deg)	26.844
Ts(m)	42.725	D(deg)	78.574
Es(m)	11.042	e(%)	7.00%
Design Speed (V): 25 kmph			

HIP NO. 25 @ CH.(m) 2990.802			
X(m)=234956.218	Y(m)=3089525.235		
R (m)	130	Ls (m)	15.000
Dc(deg)	14.453	S(m)	0.072
Lc(m)	32.792	Ts(deg)	3.306
Ts(m)	31.681	D(deg)	21.064
Es(m)	2.301	e(%)	5.47%
Design Speed (V): 40 kmph			

HIP NO. 24 @ CH.(m) 2872.607			
X(m)=234852.533	Y(m)=3089461.468		
R (m)	70	Ls (m)	15.000
Dc(deg)	8.194	S(m)	0.134
Lc(m)	10.023	Ts(deg)	10.239
Ts(m)	30.072	D(deg)	28.665
Es(m)	3.233	e(%)	5.71%
Design Speed (V): 30 kmph			

3100
CULVERT NO. 3/1
CHAINAGE(m). 3155
TYPE : BOX CULVERT
SIZE : 1x3m x3m
PROPOSAL : NEW

3200

3300

3400
CULVERT NO. 3/2
CHAINAGE(m). 3430
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

3000
MATCHLINE

3500
MATCHLINE

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : Glabal Infra Solutions
E-8/1AJ-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: PLAN & LONGITUDINAL PROFILE (From Km 3+000 to Km 3+500)
Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet)
Hor: 10 0 10 20
Ver: 1 0 1 2
Rev: R4
Drg. No: VLE/DE-BR/HW/PNP/07

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE ← → BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd
Managing Director

SUVADRA CONSULTANTS Regd. No- 11/2004-05 BHUBANESWAR

PROPOSED ROAD
EXISTING LEVEL AT PROP. CL
EXIST. GROUND @ RHS SHOULDER EDEG
EXIST. GROUND @ LHS SHOULDER EDEG

CHAINAGE=3065.363m LEVEL=405.624m
CHAINAGE=3125.363m LEVEL=406.328m
BOX CULVERT , (1x3mx3m) CHAINAGE=3155m
CHAINAGE=3245.421m LEVEL=405.600m
CHAINAGE=3275.421m LEVEL=405.864m
BOX CULVERT , (1x2mx2m) CHAINAGE=3430m

Level Datum(M) = 385

| | | |

LEGEND :

PLAN :

EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE

BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS Regd. No- 111/2004-05 BHUBANESWAR

HIP NO. 29 @ CH.(m) 3375.972
X(m)=235137.858 Y(m)=3089398.674
R (m) 200 Ls (m) 15.000
Dc(deg) 0.678 S(m) 0.047
Lc(m) 2.147 D(deg) 2.149
Ts(m) 1.074 e(%) 7.000%
Es(m) 0.027
Design Speed (V): 40 kmph

HIP NO. 30 @ CH.(m) 3430.777
X(m)=235165.975 Y(m)=3089327.205
R (m) 200 Ls (m) 15.000
Dc(deg) 4.827 S(m) 0.134
Lc(m) 6.013 D(deg) 6.139
Ts(m) 3.011 e(%) 7.000%
Es(m) 0.141
Design Speed (V): 30 kmph

HIP NO. 31 @ CH.(m) 3488.49
X(m)=235188.397 Y(m)=3089288.251
R (m) 80 Ls (m) 10.000
Dc(deg) 7.162 S(m) 0.117
Lc(m) 8.951 D(deg) 5.371
Ts(m) 4.484 e(%) 5.944
Es(m) 0.252
Design Speed (V): 30 kmph

HIP NO. 32 @ CH.(m) 3677.786
X(m)=235340.775 Y(m)=3089258.264
R (m) 80 Ls (m) 25.000
Dc(deg) 11.973 S(m) 0.328
Lc(m) 16.845 D(deg) 8.952
Ts(m) 8.482 e(%) 29.806
Es(m) 0.438
Design Speed (V): 30 kmph

HIP NO. 33 @ CH.(m) 3561.6
X(m)=235222.536 Y(m)=3089228.597
R (m) 33 Ls (m) 30.000
Dc(deg) 28.087 S(m) 1.136
Lc(m) 15.140 D(deg) 26.894
Ts(m) 7.753 e(%) 78.354
Es(m) 0.914
Design Speed (V): 25 kmph

CULVERT NO: 3/3
CHAINAGE(m): 3780
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

HIP NO. 35 @ CH.(m) 3843.568
X(m)=235452.766 Y(m)=3089247.196
R (m) 41 Ls (m) 25.000
Dc(deg) 20.768 S(m) 0.638
Lc(m) 14.967 D(deg) 17.468
Ts(m) 7.744 e(%) 55.704
Es(m) 0.609
Design Speed (V): 30 kmph

HIP NO. 34 @ CH.(m) 3768.709
X(m)=235417.55 Y(m)=3089332.175
R (m) 28 Ls (m) 25.000
Dc(deg) 60.244 S(m) 0.930
Lc(m) 29.441 D(deg) 25.578
Ts(m) 16.828 D(deg) 111.401
Es(m) 3.339 e(%) 7.000%
Design Speed (V): 25 kmph

HIP NO. 36 @ CH.(m) 3956.356
X(m)=235570.142 Y(m)=3089222.703
R (m) 35 Ls (m) 30.000
Dc(deg) 27.93 S(m) 1.071
Lc(m) 17.067 D(deg) 24.555
Ts(m) 8.624 D(deg) 77.042
Es(m) 1.105 e(%) 7.000%
Design Speed (V): 30 kmph

CULVERT NO: 3/4
CHAINAGE(m): 3900
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

HIP NO. 37
X(m)=2356
R (m)
Dc(deg)
Lc(m)
Ts(m)
Es(m)
Design

MATCHLINE 3500
MATCHLINE 4000
3600
3700
3800
3900
4100

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client :
NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer :
Glabal Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor :
Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant :
SUVADRA CONSULTANTS
(An ISO 9001 : 2008 Certified)
(Soil Testing Laboratory & Engineering Consultant)
Approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant :
SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant :
SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project:
DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE**
(From Km 3+500 to Km 4+000)

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet)
Hor: 10 0 10 20
Ver: 1 0 1 2

Rev: **R4**

Drg. No: **VLE/DE-BR/HW/PNP/08**

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

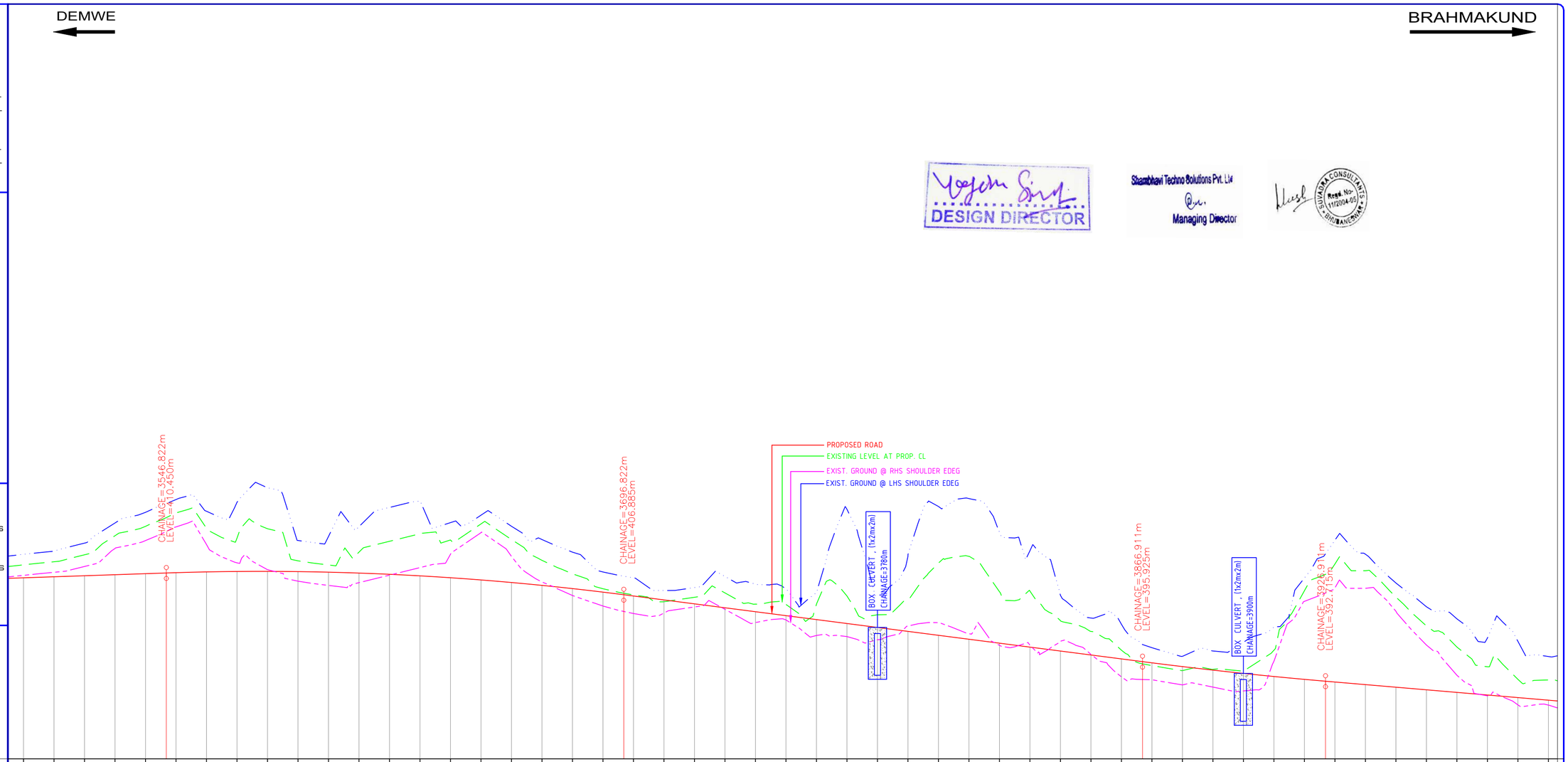
PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE ← → BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd
Managing Director

SUVADRA CONSULTANTS Regd. No- 11/12004-05 BHUBANESWAR



| | | |

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE

BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS Regd. No- 11/2004-05

CULVERT NO: 4/1
CHAINAGE(m): 4130
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

4100

4200

4000
MATCHLINE

4300

4400

4500
MATCHLINE

CULVERT NO: 4/2
CHAINAGE(m): 4390
TYPE : BOX CULVERT
SIZE : 1x3mx3m
PROPOSAL : NEW

CULVERT NO: 4/3
CHAINAGE(m): 4500
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

CULVERT NO: 4/3
CHAINAGE(m): 4500
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

HIP NO. 36 @ CH.(m) 3956.356	
X(m)=235570.142	Y(m)=3089222.703
R (m)	30.000
Dc(deg)	56 Ls (m) 1.07
Lc(m)	27.93 S(m) 24.555
Ts(m)	17.080 D(deg) 77.042
Es(m)	43.624 e(%) 7.00%
Design Speed (V): 30 kmph	11.108

HIP NO. 37 @ CH.(m) 4112.335	
X(m)=235666.986	Y(m)=3089432.828
R (m)	20.000
Dc(deg)	56 Ls (m) 0.298
Lc(m)	114.667 S(m) 10.231
Ts(m)	112.074 Ts(deg) 135.130
Es(m)	146.34 D(deg) 7.00%
Design Speed (V): 30 kmph	91.517 e(%)

HIP NO. 38 @ CH.(m) 4269.827	
X(m)=235746.275	Y(m)=3089516.463
R (m)	20.000
Dc(deg)	50 Ls (m) 0.333
Lc(m)	35.521 S(m) 430.458
Ts(m)	30.998 Ts(deg) 58.438
Es(m)	38.140 D(deg) 7.00%
Design Speed (V): 30 kmph	7.674 e(%)

HIP NO. 40 @ CH.(m) 4453.338	
X(m)=235921.428	Y(m)=3089160.709
R (m)	15.000
Dc(deg)	90 Ls (m) 0.104
Lc(m)	6.299 S(m) 4.775
Ts(m)	9.899 Ts(deg) 15.848
Es(m)	20.040 D(deg) 4.445
Design Speed (V): 30 kmph	0.973 e(%)

HIP NO. 41 @ CH.(m) 4539.781	
X(m)=236004.743	Y(m)=3089134.022
R (m)	20.000
Dc(deg)	61 Ls (m) 0.273
Lc(m)	20.507 S(m) 9.393
Ts(m)	21.833 Ts(deg) 39.293
Es(m)	31.865 D(deg) 6.60%
Design Speed (V): 30 kmph	4.061 e(%)

HIP NO. 39 @ CH.(m) 4400.841	
X(m)=235877.467	Y(m)=3089189.927
R (m)	15.000
Dc(deg)	70 Ls (m) 0.134
Lc(m)	9.897 S(m) 6.139
Ts(m)	12.091 Ts(deg) 22.174
Es(m)	21.241 D(deg) 5.71%
Design Speed (V): 30 kmph	1.468 e(%)

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : Glabal Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) Approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE – BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH

Title: PLAN & LONGITUDINAL PROFILE (From Km 4+000 to Km 4+500)

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet) Hor: 10 0 10 20 Ver: 1 0 1 2

Rev: R4

Date: SEP.-2022

Drg. No: VLE/DE-BR/HW/PNP/09

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE ← → BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd
Managing Director

SUVADRA CONSULTANTS Regd. No- 11/12004-05 BHUBANESWAR

PROPOSED ROAD
EXISTING LEVEL AT PROP. CL
EXIST. GROUND @ RHS SHOULDER EDEG
EXIST. GROUND @ LHS SHOULDER EDEG

BOX CULVERT , (1x2mx2m) CHAINAGE=4130m
CHAINAGE=4267.560m LEVEL=378.222m
BOX CULVERT , (1x3mx3m) CHAINAGE=4390m
CHAINAGE=4417.560m LEVEL=378.831m
BOX CULVERT , (1x2mx2m) CHAINAGE=4500m

Level Datum(M) = 355

CHAINAGE (M)	4000	4010	4020	4030	4040	4050	4060	4070	4080	4090	4100	4110	4120	4130	4140	4150	4160	4170	4180	4190	4200	4210	4220	4230	4240	4250	4260	4270	4280	4290	4300	4310	4320	4330	4340	4350	4360	4370	4380	4390	4400	4410	4420	4430	4440	4450	4460	4470	4480	4490	4500
FINISHED ROAD LEVELS (M)	389.606	389.180	388.755	388.329	387.904	387.478	387.053	386.628	386.202	385.777	385.351	384.926	384.500	384.075	383.649	383.224	382.799	382.373	381.948	381.522	381.097	380.671	380.246	379.820	379.395	378.970	378.544	378.120	377.741	377.424	377.169	376.976	376.846	376.777	376.771	376.827	376.944	377.124	377.367	377.671	378.037	378.466	378.955	379.461	379.968	380.474	380.981	381.488	381.994	382.501	383.007
EXIST LEVELS AT PROP. CL (M)	392.924	391.478	389.440	387.765	388.567	390.956	391.618	392.259	393.622	393.956	394.227	394.650	386.654	384.363	383.213	386.314	385.493	383.382	385.933	390.789	394.250	395.604	394.853	387.382	388.212	392.844	392.605	391.829	387.153	379.550	381.762	380.211	381.229	387.744	382.068	380.923	379.240	377.206	378.256	380.327	381.639	383.952	387.273	392.896	393.653	392.211	393.368	403.939	396.594	393.452	391.985
EXISTING GROUND AT LHS SHOULDER EDGE LVL (M)	396.763	395.686	393.438	390.797	390.417	392.066	393.000	394.233	396.170	397.911	399.850	399.568	395.060	386.590	390.781	392.996	390.378	387.042	392.150	397.152	401.780	406.811	404.242	395.513	397.208	397.216	399.967	404.414	399.881	391.751	387.370	388.812	386.616	394.932	390.906	384.078	381.415	381.031	381.977	382.528	383.844	386.998	391.738	398.216	400.693	395.982	402.812	408.161	401.624	402.252	396.541
EXISTING GROUND AT RHS SHOULDER EDGE LVL (M)	388.802	387.489	386.155	385.716	387.321	389.668	389.857	390.563	391.128	389.224	386.089	384.900	382.662	381.600	380.578	378.934	381.342	379.211	380.568	382.258	385.764	384.829	384.401	383.740	383.824	382.883	383.992	383.888	379.082	377.830	376.947	374.965	376.317	377.693	376.600	378.942	376.358	373.567	374.577	376.412	379.356	380.584	380.463	387.511	389.792	392.825	392.431	396.703	392.819	388.762	385.661

HORIZONTAL SCHEMATIC (M): L=41.410m | L=20.000m | R=56.000m | L=112.074m | L=20.000m | L=45.956m | L=20.000m | R=−50.000m | L=30.998m | L=20.000m | L=74.469m | L=15.000m | R=70.000m | L=12.091m | L=15.000m | L=11.504m | L=15.000m | R | L=9.895m | L=15.000m | L=35.579m

VERTICAL SCHEMATIC (G=%) (L=m),(R=M): G=−4.254, L=340.649m | R=1609.368m, L=150.000m | G=5.066, L=147.257M

WIDENING SCHEMATIC (M) — L / R: 3.500 | 3.500 | 4.700 | 4.700 | 3.500 | 3.500 | 4.700 | 4.700 | 3.500 | 3.500 | 4.400 | 4.400 | 3.500 | 3.500 | 4.400 | 4.400 | 3.500

SUPERELEVATION SCHEMATIC (e=%) — L / R: 0 | e=2.500 | e=7.000 | e=2.500 | e=7.000 | e=2.500 | e=7.000 | e=2.500 | e=5.700 | e=4.400 | e=2.500 | e=2.500

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : Glabal Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039) Tel.-0755-4045216

EPC Contractor : Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: **DEMWE - BRAHMKUND (NH-13)**
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE – BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH

Date: **SEP.-2022**

Title: **PLAN & LONGITUDINAL PROFILE** *(From Km 4+000 to Km 4+500)*

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet) Hor: 10 0 10 20 Ver: 1 0 1 2

Rev: **R4**

Drg. No: **VLE/DE-BR/HW/PNP/09A**

LEGEND :

PLAN :

EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE

BRAHMAKUND

N

HIP NO. 41 @ CH.(m) 4539.781
X(m)=236004.743 Y(m)=3089134.022
R (m) 61 Ls (m) 20.000
Dc(deg) 20.507 S(m) 20.000
Lc(m) 21.833 Ts(deg) 0.273
Ts(m) 31.865 D(deg) 9.393
Es(m) 4.061 e(%) 39.293
Design Speed (V): 30 kmph 6.60%

HIP NO. 42 @ CH.(m) 4714.695
X(m)=236168.691 Y(m)=3089198.71
R (m) 70 Ls (m) 15.000
Dc(deg) 15.899 S(m) 0.134
Lc(m) 19.424 Ts(deg) 6.139
Ts(m) 25.098 D(deg) 28.176
Es(m) 2.309 e(%) 5.70%
Design Speed (V): 30 kmph

HIP NO. 43 @ CH.(m) 4859.384
X(m)=236313.227 Y(m)=3089187.875
R (m) 70 Ls (m) 15.000
Dc(deg) 17.135 S(m) 0.134
Lc(m) 20.934 Ts(deg) 6.139
Ts(m) 25.905 D(deg) 28.176
Es(m) 2.509 e(%) 5.70%
Design Speed (V): 30 kmph

HIP NO. 44 @ CH.(m) 4956.085
X(m)=236405.258 Y(m)=3089220.502
R (m) 30 Ls (m) 30.000
Dc(deg) 6.925 S(m) 1.250
Lc(m) 3.626 Ts(deg) 28.648
Ts(m) 34.487 D(deg) 64.227
Es(m) 6.894 e(%) 7.00%
Design Speed (V): 30 kmph

CULVERT NO: 4/3
CHAINAGE(m): 4500
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

CULVERT NO: 4/4
CHAINAGE(m): 4920
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

BRIDGE NO: 4/1
CHAINAGE(m): 4758
TYPE : MINOR BRIDGE
SIZE : 1X31m
PROPOSAL : NEW

MATCHLINE 4500

MATCHLINE 5000

4600

4700

4800

4900

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd
Dir.
Managing Director

SUVADRA CONSULTANTS Regd. No: 117/2004-05 BHUBANESWAR

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client :
NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer :
Glabal Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor :
Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant :
SUVADRA CONSULTANTS
(An ISO 9001 : 2008 Certified)
(Soil Testing Laboratory & Engineering Consultant)
Approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant :
SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant :
SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project:
DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE**
(From Km 4+500 to Km 5+000)

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet)
Hor: 10 0 10 20
Ver: 1 0 1 2

Rev: R4

Drg. No: VLE/DE-BR/HW/PNP/10

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE ← → BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS BHUBANESWAR Regd. No- 11/2004-05

PROPOSED ROAD
EXISTING LEVEL AT PROP. CL
EXIST. GROUND @ RHS SHOULDER EDEG
EXIST. GROUND @ LHS SHOULDER EDEG

BOX CULVERT (1x2mx2m) CHAINAGE=4500m

CHAINAGE=4564.817m
LEVEL=386.291m

CHAINAGE=4624.817m
LEVEL=387.811m

BRIDGE NO. : 4/1
CHAINAGE : 4758
PROP SPAN : 1x31m

CHAINAGE=4793.917m
LEVEL=387.811m

CHAINAGE=4833.917m
LEVEL=387.711m

BOX CULVERT (1x2mx2m) CHAINAGE=4920m

Level Datum(M) = 370

| | | |

LEGEND :

PLAN :

EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE

BRAHMAKUND

N

MATCHLINE 5000

MATCHLINE 5500

5100

5200

5300

5400

BRIDGE NO : 5/1
CHAINAGE(m): 5198.5
TYPE : MINOR BRIDGE
SIZE : 1X25m
PROPOSAL : NEW

CULVERT NO: 5/1
CHAINAGE(m): 5082
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

CULVERT NO: 5/2
CHAINAGE(m): 5303
TYPE : BOX CULVERT
SIZE : 1x3mx3m
PROPOSAL : NEW

CULVERT NO: 5/3
CHAINAGE(m): 5500
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

HIP NO. 45 @ CH.(m) 5051.112
X(m)=236483.848 Y(m)=3089151.091
R (m) | Ls (m) 15.000
Dc(deg) 4 | S(m) 0.117
Lc(m) 59.031 | Ts(deg) 3.371
Ts(m) 82.478 | D(deg) 69.814
Es(m) 63.403 | e(%) 5.000
Design Speed (V): 30 kmph | 7.00%

HIP NO. 46 @ CH.(m) 5169.16
X(m)=236585.569 Y(m)=3089206.007
R (m) | Ls (m) 15.000
Dc(deg) 4 | S(m) 0.229
Lc(m) 11.732 | Ts(deg) 10.481
Ts(m) 8.395 | D(deg) 32.694
Es(m) 19.584 | e(%) 4.300
Design Speed (V): 20 kmph | 7.00%

HIP NO. 47 @ CH.(m) 5227.973
X(m)=236654.682 Y(m)=3089200.774
R (m) | Ls (m) 15.000
Dc(deg) 36.45 | S(m) 0.208
Lc(m) 0.926 | Ts(deg) 9.549
Ts(m) 0.727 | D(deg) 20.024
Es(m) 15.474 | e(%) 7.000
Design Speed (V): 30 kmph

HIP NO. 48 @ CH.(m) 5293.272
X(m)=236714.744 Y(m)=3089173.587
R (m) 61 | Ls (m) 20.000
Dc(deg) 13.050 | S(m) 0.273
Lc(m) 13.894 | Ts(deg) 9.393
Ts(m) 27.466 | D(deg) 31.836
Es(m) 2.716 | e(%) 7.000
Design Speed (V): 40 kmph

HIP NO. 49 @ CH.(m) 5405.112
X(m)=236823.234
R (m)
Dc(deg)
Lc(m)
Ts(m)
Es(m)
Design Speed (V)

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd
Managing Director

SUVADRA CONSULTANTS Regd. No- 112/2004-05

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client :
NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer :
Glabal Infra Solutions
E-8/1A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

E/PC Contractor :
Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant :
SUVADRA CONSULTANTS
(An ISO 9001 : 2008 Certified)
(Soil Testing Laboratory & Engineering Consultant)
Approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant :
SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant :
SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project:
DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE**
(From Km 5+000 to Km 5+500)

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet)
Hor: 10 0 10 20
Ver: 1 0 1 2

Rev: R4

Drg. No: VLE/DE-BR/HW/PNP/11

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE

BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS Regd. No- 111/2004-05 BHUBANESWAR

PROPOSED ROAD
EXISTING LEVEL AT PROP. CL
EXIST. GROUND @ RHS SHOULDER EDEG
EXIST. GROUND @ LHS SHOULDER EDEG

CHAINAGE =5052.500m
LEVEL =386.618m

BOX CULVERT , (1x2m)
CHAINAGE=5082m

CHAINAGE =5112.500m
LEVEL =386.468m

BRIDGE NO. : 5/1
CHAINAGE : 5198.5
PROP SPAN : 1x25m

CHAINAGE =5217.500m
LEVEL =386.468m

CHAINAGE =5247.500m
LEVEL =386.668m

BOX CULVERT , (1x3m)
CHAINAGE=5303m

BOX CULVERT , (1x2m)
CHAINAGE=5500m

Level Datum(M) = 355

FINISHED ROAD LEVELS (M)	386.880 386.830 386.780 386.730 386.680 386.630 386.583 386.543 386.512 386.489 386.474 386.468 386.468 386.468 386.468 386.468 386.468 386.468 386.468 386.468 386.468 386.468 386.476 386.675 387.139 387.859 388.654 389.449 390.244 391.039 391.834 392.629 393.424 394.219 395.014 395.809 396.604 397.399 398.194 398.989 399.784 400.579 401.374 402.169 402.964 403.759 404.554 405.349 406.144 406.939 407.734
EXIST LEVELS AT PROP. CL (M)	403.211 403.709 402.471 404.116 404.987 396.509 390.248 386.787 385.922 386.692 390.845 396.925 404.246 409.932 413.813 416.281 405.113 399.542 384.938 374.538 370.044 379.177 396.740 401.652 403.575 400.691 399.492 399.296 398.625 391.096 388.437 387.493 385.759 386.195 392.534 398.885 404.226 401.287 398.479 399.089 400.986 401.708 402.189 400.870 397.178 403.936 412.108 415.190 410.997 406.227 407.771
EXISTING GROUND AT LHS SHOULDER EDGE LVL (M)	407.280 410.073 409.785 411.487 407.092 399.921 394.995 390.391 389.565 390.150 394.225 400.002 407.296 414.647 419.116 421.221 412.133 407.742 404.413 374.502 371.188 383.555 403.510 406.900 407.236 404.362 401.892 401.035 398.740 391.233 388.996 388.195 387.718 391.621 397.426 401.539 404.974 403.167 402.173 400.983 401.635 402.285 402.696 401.268 400.381 407.713 415.279 417.631 414.490 410.442 411.207
EXISTING GROUND AT RHS SHOULDER EDGE LVL (M)	398.038 397.934 399.940 398.694 401.540 393.503 386.900 383.591 382.633 384.067 387.739 393.879 401.197 404.917 408.507 405.685 396.017 387.758 378.553 374.284 369.087 380.013 390.850 395.285 398.455 397.020 397.092 396.744 394.480 389.221 387.367 386.849 379.764 381.266 388.016 395.541 404.037 404.404 394.910 396.735 399.203 401.473 401.703 400.007 394.180 400.119 408.299 412.018 407.337 401.802 399.371
HORIZONTAL SCHEMATIC (M)	L=15.000m, L=82.479m, R=-80.000m, L=15.000m, L=32.611m, L=15.000m, R, L, L=15.000m, L=34.252m, L=15.000m, R, L=15.000m, L=22.989m, L=20.000m, L=13.894m, R=-61.000m, L=20.000m, L=134.833m, L=15.000m, R=150.000m, L=62.464m
VERTICAL (G=%) (L=m),(R=M) SCHEMATIC	G=-0.500, L=218.583m, R=11999.973m, L=60.000m, G=-0.000, L=105.000m, R=377.358m, L=30.000m, G=7.950, L=461.298m
WIDENING SCHEMATIC (M) L R	3.500 4.400 4.400 3.500 3.500 4.700 4.700 3.500 3.500 4.700 4.700 3.500 3.500 4.400 4.400 3.500 3.500 4.100
SUPERELEVATION SCHEMATIC (e=%) L R	e=5.000 e=4.300 e=2.500 e=7.000 e=7.000 e=2.500 e=2.7
CHAINAGE (M)	5000 5010 5020 5030 5040 5050 5060 5070 5080 5090 5100 5110 5120 5130 5140 5150 5160 5170 5180 5190 5200 5210 5220 5230 5240 5250 5260 5270 5280 5290 5300 5310 5320 5330 5340 5350 5360 5370 5380 5390 5400 5410 5420 5430 5440 5450 5460 5470 5480 5490 5500

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : **Glabal Infra Solutions**
E-811A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : **Valecha Engineering Ltd**
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : **SPS Technocrats Pvt. Ltd.**
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: **DEMWE - BRAHMKUND (NH-13)**
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE** *(From Km 5+000 to Km 5+500)*
Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet) Hor: 10 0 10 20 Ver: 1 0 1 2
Rev: R4
Drg. No: VLE/DE-BR/HW/PNP/11A

LEGEND :

PLAN :

EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE

BRAHMAKUND

MATCHLINE 5500

MATCHLINE 6000

HIP NO. 49 @ CH.(m) 5501.188			
X(m)=236922.392	Y(m)=3089200.858		
R (m)	150	Ls (m)	15.000
Dc(deg)	23.860	S(m)	0.063
Lc(m)	62.464	Ts(deg)	2.865
Ts(m)	47.132	D(deg)	29.589
Es(m)	5.208	e(%)	4.70%
Design Speed (V): 40 kmph			

HIP NO. 50 @ CH.(m) 5587.776			
X(m)=237004.913	Y(m)=3089167.338		
R (m)	41	Ls (m)	25.000
Dc(deg)	16.157	S(m)	0.635
Lc(m)	11.562	Ts(deg)	17.468
Ts(m)	32.362	D(deg)	51.094
Es(m)	5.147	e(%)	7.00%
Design Speed (V): 30 kmph			

HIP NO. 51 @ CH.(m) 5651.247			
X(m)=237063.135	Y(m)=3089199.596		
R (m)	30	Ls (m)	15.000
Dc(deg)	28.228	S(m)	0.313
Lc(m)	14.780	Ts(deg)	14.324
Ts(m)	23.900	D(deg)	56.876
Es(m)	4.475	e(%)	5.90%
Design Speed (V): 20 kmph			

HIP NO. 52 @ CH.(m) 5699.056			
X(m)=237106.988	Y(m)=3089176.387		
R (m)	70	Ls (m)	15.000
Dc(deg)	13.420	S(m)	0.134
Lc(m)	16.396	Ts(deg)	6.139
Ts(m)	23.494	D(deg)	25.698
Es(m)	1.935	e(%)	5.70%
Design Speed (V): 30 kmph			

HIP NO. 53 @ CH.(m) 5844.356			
X(m)=237261.991	Y(m)=3089170.459		
R (m)	41	Ls (m)	20.000
Dc(deg)	45.142	S(m)	0.407
Lc(m)	32.303	D(deg)	13.975
Ts(m)	40.670	D(deg)	23.091
Es(m)	10.244	e(%)	7.00%
Design Speed (V): 30 kmph			

HIP NO. 54 @ CH.(m) 5976.608			
X(m)=237295.425	Y(m)=3089042.993		
R (m)	130	Ls (m)	15.000
Dc(deg)	7.983	S(m)	0.072
Lc(m)	14.621	Ts(deg)	3.506
Es(m)	0.824	D(deg)	8.414
Design Speed (V): 40 kmph	1.067	e(%)	5.50%

HIP NO. 55 @ CH.(m) 6049.177			
X(m)=237303.783	Y(m)=3088987.865		
R (m)	41	Ls (m)	15.000
Dc(deg)	45.329	S(m)	0.225
Lc(m)	32.410	Ts(deg)	10.481
Ts(m)	34.198	D(deg)	66.224
Es(m)	8.326	e(%)	4.30%
Design Speed (V): 20 kmph			

HIP NO. 67 @ CH.(m) 7540.311			
X(m)=237498.151	Y(m)=3088098.616		
R (m)	15	Ls (m)	35.000
Dc(deg)	65.203	S(m)	3.403
Lc(m)	17.070	Ts(deg)	86.845
Ts(m)	24.870	D(deg)	196.883
Es(m)	7.127	e(%)	7.00%
Design Speed (V): 20 kmph			

CULVERT NO: 5/3
CHAINAGE(m): 5500
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

CULVERT NO: 5/3
CHAINAGE(m): 5500
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

CULVERT NO: 5/4
CHAINAGE(m): 5650
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

BRIDGE NO : 5/2
CHAINAGE(m): 5781
TYPE : MAJOR BRIDGE
SIZE : 1X80m
PROPOSAL : NEW

5600 5700 5800 5900

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd
Managing Director

SUVADRA CONSULTANTS Regd. No- 111/2004-05 BHUBANESWAR

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : **Glabal Infra Solutions**
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : **Valecha Engineering Ltd**
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) Approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : **SPS Technocrats Pvt. Ltd.**
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: **DEMWE - BRAHMKUND (NH-13)**
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE** *(From Km 5+500 to Km 6+000)*

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet) Hor: 10 0 10 20 Ver: 1 0 1 2

Rev: R4

Drg. No: VLE/DE-BR/HW/PNP/12

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE ← → BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd
Managing Director

SUVADRA CONSULTANTS Regd. No. 111/2004-05 BHUBANESWAR

PROPOSED ROAD
EXISTING LEVEL AT PROP. CL
EXIST. GROUND @ RHS SHOULDER EDEG
EXIST. GROUND @ LHS SHOULDER EDEG

BOX CULVERT (1x2mx2m) CHAINAGE=5500m
BOX CULVERT (1x2mx2m) CHAINAGE=5650m
CHAINAGE=5708.798m LEVEL=424.334m
CHAINAGE=5738.798m LEVEL=425.526m
BRIDGE NO. : 5/2
CHAINAGE : 5781
PROP SPAN : 1x80m
CHAINAGE=5823.798m LEVEL=425.526m
CHAINAGE=5863.798m LEVEL=427.124m

Level Datum(M) = 395

FINISHED ROAD LEVELS (M)	407.734 408.529 409.324 410.119 410.914 411.709 412.504 413.299 414.094 414.889 415.684 416.479 417.274 418.069 418.864 419.659 420.454 421.249 422.044 422.839 423.634 424.427 425.058 425.424 425.526 425.526 425.526 425.526 425.526 425.526 425.526 425.526 425.526 425.565 425.788 426.212 426.835 427.620 428.419 429.218 430.016 430.815 431.614 432.413 433.212 434.011 434.810 435.609 436.408 437.207 438.006
EXIST LEVELS AT PROP. CL (M)	407.771 408.597 414.652 416.078 414.357 412.106 418.631 421.926 427.263 432.903 433.854 432.024 428.509 426.672 423.616 426.809 430.092 433.853 434.603 432.967 432.420 431.239 432.763 431.098 416.641 406.970 406.565 406.159 404.345 403.561 407.001 409.673 414.783 423.316 428.587 433.172 438.553 442.096 443.646 445.939 446.537 450.165 455.851 458.943 457.877 455.395 453.103 451.392 449.762 448.681 450.034
EXISTING GROUND AT LHS SHOULDER EDGE LVL (M)	411.207 411.737 417.631 421.637 422.379 419.683 425.219 427.526 431.413 435.750 438.196 435.013 431.187 428.363 425.113 428.187 430.378 436.334 438.249 437.632 437.511 433.402 431.942 433.559 422.545 413.180 409.251 408.846 406.335 403.733 407.179 410.589 416.718 424.887 434.624 436.610 443.311 447.289 448.961 449.828 451.433 455.090 460.312 462.598 461.223 458.017 454.821 452.624 450.986 451.221 451.260
EXISTING GROUND AT RHS SHOULDER EDGE LVL (M)	399.371 406.007 408.380 409.885 407.547 405.047 411.247 416.980 423.315 430.918 429.717 429.318 426.096 424.549 422.105 425.008 427.516 430.332 431.125 429.202 428.182 428.502 433.471 427.914 410.737 404.284 403.879 403.473 402.356 402.838 405.438 408.037 412.692 420.655 426.147 429.668 432.638 435.912 439.041 442.042 441.640 445.239 450.926 455.906 454.750 453.233 451.768 450.036 448.421 446.969 447.920
HORIZONTAL SCHEMATIC (M)	R=150.000m L=62.464m L=15.000m L=9.575m L=25.000m R=−41.000m L=11.563m L=25.000m L=10.300m L=15.000m R=30.000m L=14.780m L=15.000m L L=15.000m R=−70.000m L=16.396m L=15.000m L=90.951m L=20.000m R=41.000m L=32.304m L=20.000m L=74.052m L=15.000m R L L=15.000m
VERTICAL (G=%) SCHEMATIC (L=m),(R=M)	G=7.950 L=461.298m R=−377.358m L=30.000m G=−0.000 L=85.000m R=500.650m L=40.000m G=7.990 L=815.808m
WIDENING SCHEMATIC (M) L R	4.100 3.500 4.700 4.700 3.500 3.500 3.000 3.000 3.500 4.400 4.400 3.500 3.500 4.700 4.700 3.500 3.500 4.100 4.100 3.500
SUPERELEVATION SCHEMATIC (e=%) L R	e=2.700 e=4.300 e=7.000 e=5.700 e=2.500 e=2.500 e=7.000 e=2.500 e=2.500 e=2.700 e=4.300 e=7.000 e=5.700 e=7.000 e=2.500 e=2.500
CHAINAGE (M)	5500 5510 5520 5530 5540 5550 5560 5570 5580 5590 5600 5610 5620 5630 5640 5650 5660 5670 5680 5690 5700 5710 5720 5730 5740 5750 5760 5770 5780 5790 5800 5810 5820 5830 5840 5850 5860 5870 5880 5890 5900 5910 5920 5930 5940 5950 5960 5970 5980 5990 6000

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : Glabal Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) (approved By Govt. of Orissa Regd. No. 11 of 2004-05)
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: **DEMWE - BRAHMKUND (NH-13)**
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE – BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE** *(From Km 5+500 to Km 6+000)*
Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet) Hor: 10 0 10 20 Ver: 1 0 1 2
Rev: **R4**
Drg. No: **VLE/DE-BR/HW/PNP/12A**

LEGEND :

PLAN :

EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE

BRAHMAKUND

MATCHLINE 7500

MATCHLINE 8000

MATCHLINE 6000

MATCHLINE 6500

CULVERT NO. 7/4
CHAINAGE(m): 7772
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

CULVERT NO. 7/1
CHAINAGE(m): 7249
TYPE : BOX CULVERT
SIZE : 1x6mx6m
PROPOSAL : NEW

CULVERT NO. 7/2
CHAINAGE(m): 7400
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

BRIDGE NO. 6/9
CHAINAGE(m): 6314
TYPE : MINOR BRIDGE
SIZE : 1X10m
PROPOSAL : NEW

CULVERT NO. 6/1
CHAINAGE(m): 6204
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

HIP NO. 57 @ CH.(m) 6704.200
X(m)=237432.643 Y(m)=3089605.341
R (m) 25.000
Dc(deg) 70 Ls (m) 1.040
Lc(m) 22.449 S(m) 28.648
Ts(m) 9.857 Ts(deg) 79.760
Es(m) 3.169 D(deg) 7.000%
Design Speed (V): 25 kmph

HIP NO. 58 @ CH.(m) 6285.554
X(m)=237512.501 Y(m)=3088974.111
R (m) 70 Ls (m) 15.000
Dc(deg) 6.736 S(m) 0.134
Lc(m) 8.229 Ts(deg) 6.139
Ts(m) 19.242 D(deg) 19.013
Es(m) 1.111 e(%) 5.70%
Design Speed (V): 30 kmph

HIP NO. 59 @ CH.(m) 6347.955
X(m)=237560.329 Y(m)=3088933.537
R (m) 70 Ls (m) 15.000
Dc(deg) 9.756 S(m) 0.134
Lc(m) 11.919 Ts(deg) 6.139
Ts(m) 21.153 D(deg) 22.033
Es(m) 1.488 e(%) 5.70%
Design Speed (V): 30 kmph

HIP NO. 55 @ CH.(m) 6049.177
X(m)=237303.793 Y(m)=3089967.669
R (m) 45.296 Ls (m) 15.000
Dc(deg) 32.411 S(m) 0.225
Lc(m) 34.398 Ts(deg) 10.488
Ts(m) 8.230 e(%) 66.25%
Design Speed (V): 20 kmph 4.30%

HIP NO. 56 @ CH.(m) 6135.354
X(m)=237392.529 Y(m)=3089939.788
R (m) 25.000
Dc(deg) 18.644 S(m) 1.040
Lc(m) 8.135 Ts(deg) 28.648
Ts(m) 32.721 D(deg) 79.760
Es(m) 8.034 e(%) 7.000%
Design Speed (V): 25 kmph

HIP NO. 60 @ CH.(m) 6534.518
X(m)=237647.113 Y(m)=3088767.936
R (m) 150 Ls (m) 15.000
Dc(deg) 13.398 S(m) 0.063
Lc(m) 32.431 Ts(deg) 2.864
Ts(m) 31.424 D(deg) 18.117
Es(m) 1.958 e(%) 4.70%
Design Speed (V): 40 kmph

HIP NO. 72 @ CH.(m) 804
X(m)=237728.365 Y(m)=
R (m) 30 Ls (m)
Dc(deg) 45.416 S(m)
Lc(m) 23.780 Ts(de
Ts(m) 53.961 D(de
Es(m) 20.042 e(%
Design Speed (V): 30

HIP NO. 64 @ CH.(m) 7084.006
X(m)=238538.841 Y(m)=
R (m) 30 Ls (m)
Dc(deg) 27.442 S(m)
Lc(m) 6.138 Ts(deg)
Ts(m) 15.525 D(deg)
Es(m) 1.584 e(%)
Design Speed (V): 30 kmph

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS Regd. No- 11/2004-05 BHUBANESWAR

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client :
NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer :
Global Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor :
Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant :
SUVADRA CONSULTANTS
(An ISO 9001 : 2008 Certified)
(Soil Testing Laboratory & Engineering Consultant) approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant :
SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant :
SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project:
DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE**
(From Km 6+000 to Km 6+500)

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet)
Hor: 10 0 10 20
Ver: 1 0 1 2

Rev: **R4**

Drg. No: **VLE/DE-BR/HW/PNP/13**

LEGEND :

PLAN : EXISTING

- EXIST. ROAD
- K-I/R : KACHA RESIDENTIAL
- K-I/C : KACHA COMMERCIAL
- SP-I/R : SEMI PUCCA RESI.
- SP-I/C : SEMI PUCCA COMM.
- P-I/R : PUCCA RESIDENTIAL
- P-I/C : PUCCA COMMERCIAL
- 1000 CONTOUR

PROPOSED:

- TOE LINE / SH EDGE
- C/W EDGE
- CEN.LINE
- C/W EDGE
- SH EDGE / TOE LINE
- HOR. TANGENT POINT
- PROW — PROPOSED ROW
- BRIDGE
- BOX CULVERT
- DRAIN
- COVERED DRAIN
- RETAINING WALL
- BREAST WALL

PROFILE :

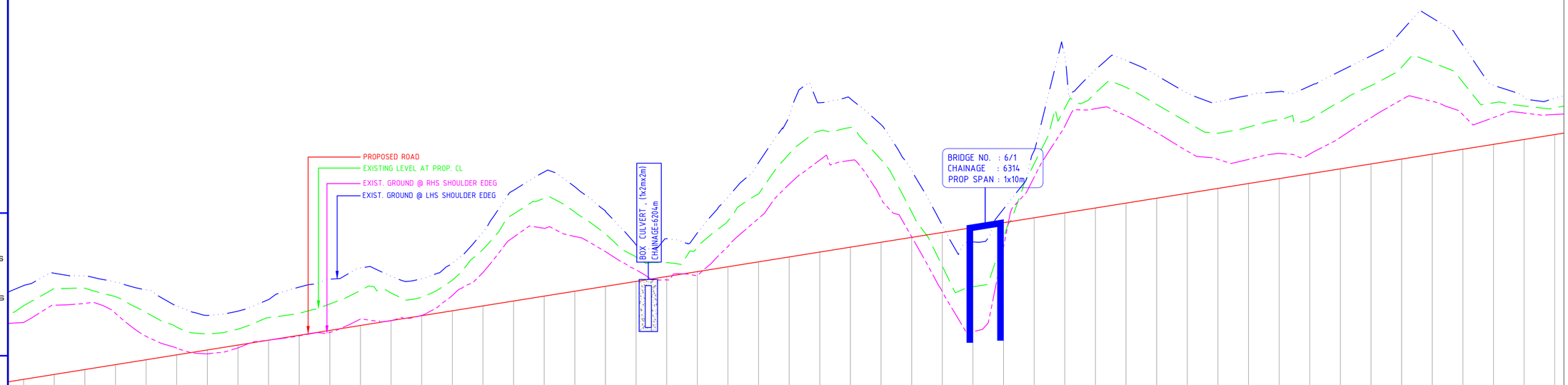
- PROP. LEVEL
- EXIST. GROUND @ RHS SHOULDER EDGE LVL
- EXIST. LEVEL AT PRO. CL
- EXIST. GROUND @ RHS SHOULDER EDGE LVL
- VER. TANGENT POINT

DEMWE ← → BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd. — Managing Director

SUVADRA CONSULTANTS Regd. No- 11/12004-05 BHUBANESWAR



Level Datum(M) = 420

| | | |

LEGEND :

PLAN :

EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE

HOR. TANGENT POINT

PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL

VER. TANGENT POINT

DEMWE

BRAHMAKUND

MATCHLINE 7200

MATCHLINE 8000

MATCHLINE 7100

MATCHLINE 7000

MATCHLINE 6500

MATCHLINE 6400

MATCHLINE 6900

MATCHLINE 6600

MATCHLINE 6700

8100

8400

CULVERT NO. 7/1
CHAINAGE(m): 7249
TYPE : BOX CULVERT
SIZE : 1x6mx6m
PROPOSAL : NEW

CULVERT NO. 6/3
CHAINAGE(m): 6964
TYPE : BOX CULVERT
SIZE : 1x6mx6m
PROPOSAL : NEW

CULVERT NO. 6/2
CHAINAGE(m): 6594
TYPE : BOX CULVERT
SIZE : 1x6mx6m
PROPOSAL : NEW

HIP NO. 72 @ CH.(m) 8045.72
X(m)=237728.365 | Y(m)=3088672.445
R (m) | 30 | Ls (m) | 30.000
Dc(deg) | 45.416 | S(m) | 29.250
Lc(m) | 23.780 | Ts(deg) | 28.648
Ts(m) | 53.96 | D(deg) | 102.712
Es(m) | 20.042 | e(%) | 7.00%
Design Speed (V): 30 kmph

HIP NO. 64 @ CH.(m) 7064.006
X(m)=237600.829 | Y(m)=3088818.841
R (m) | 70 | Ls (m) | 15.000
Dc(deg) | 24.62 | S(m) | 0.134
Lc(m) | 15.165 | Ts(deg) | 6.139
Ts(m) | 15.237 | D(deg) | 24.094
Es(m) | 1.624 | e(%) | 5.70%
Design Speed (V): 30 kmph

HIP NO. 60 @ CH.(m) 6534.518
X(m)=237647.113 | Y(m)=3088767.936
R (m) | 150 | Ls (m) | 15.000
Dc(deg) | 12.388 | S(m) | 0.063
Lc(m) | 32.431 | Ts(deg) | 2.865
Ts(m) | 31.424 | D(deg) | 18.117
Es(m) | 1.958 | e(%) | 4.70%
Design Speed (V): 40 kmph

HIP NO. 63 @ CH.(m) 6862.48
X(m)=237780.98 | Y(m)=3088658.833
R (m) | 70 | Ls (m) | 15.000
Dc(deg) | 11.816 | S(m) | 0.134
Lc(m) | 14.436 | Ts(deg) | 6.139
Ts(m) | 22.465 | D(deg) | 24.094
Es(m) | 1.713 | e(%) | 5.70%
Design Speed (V): 30 kmph

HIP NO. 61 @ CH.(m) 6714.545
X(m)=237776.305 | Y(m)=3088642.185
R (m) | 150 | Ls (m) | 15.000
Dc(deg) | 5.165 | S(m) | 0.063
Lc(m) | 13.523 | Ts(deg) | 2.865
Ts(m) | 21.810 | D(deg) | 10.895
Es(m) | 0.743 | e(%) | 4.70%
Design Speed (V): 40 kmph

HIP NO. 62 @ CH.(m) 6784.606
X(m)=237751.713 | Y(m)=3088674.45
R (m) | 70 | Ls (m) | 35.000
Dc(deg) | 21.39 | S(m) | 3.452
Lc(m) | 18.609 | Ts(deg) | 66.845
Ts(m) | 65.998 | D(deg) | 205.081
Es(m) | 29.764 | e(%) | 7.00%
Design Speed (V): 20 kmph

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS Regd. No-117/2004-05 BHUBANESWAR

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client :
NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer :
Glabal Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor :
Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant :
SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified)
(Soil Testing Laboratory & Engineering Consultant) Licensed By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant :
SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant :
SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project:
DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE – BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE**
(From Km 6+500 to Km 7+000)

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet)
Hor: 10 0 10 20
Ver: 1 0 1 2

Rev: **R4**

Drg. No: **VLE/DE-BR/HW/PNP/14**

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Dir.
Managing Director

SUVADRA CONSULTANTS Regd. No- 117/2004-05 BHUBANESWAR

DEMWE ← → BRAHMAKUND

PROPOSED ROAD
EXISTING LEVEL AT PROP. CL
EXIST. GROUND @ RHS SHOULDER EDEG
EXIST. GROUND @ LHS SHOULDER EDEG

BOX CULVERT , (1x6mx6m) CHAINAGE=6594m
CHAINAGE=6679.606m LEVEL=492.304m
CHAINAGE=6739.606m LEVEL=495.451m
CHAINAGE=6829.606m LEVEL=497.701m
CHAINAGE=6889.606m LEVEL=500.848m
BOX CULVERT , (1x6mx6m) CHAINAGE=6964m

Level Datum(M) = 455

FINISHED ROAD LEVELS (M)	477.954 478.753 479.552 480.351 481.150 481.949 482.748 483.547 484.346 485.145 485.944 486.743 487.542 488.341 489.140 489.939 490.737 491.536 492.335 493.085 493.743 494.310 494.785 495.168 495.461 495.711 495.961 496.211 496.461 496.711 496.961 497.211 497.461 497.711 498.010 498.401 498.883 499.457 500.123 500.879 501.678 502.477 503.276 504.075 504.874 505.673 506.472 507.271 508.070 508.869 509.668
EXIST LEVELS AT PROP. CL (M)	482.315 483.291 484.523 486.608 486.104 484.372 482.543 481.443 482.491 484.447 487.342 489.597 491.134 491.899 493.239 495.241 496.387 496.559 496.704 497.075 497.797 498.281 500.218 504.853 509.096 512.030 513.357 516.803 526.234 537.706 540.319 538.497 533.653 526.458 518.861 511.292 506.938 506.080 506.835 508.214 509.430 508.579 507.811 506.585 503.819 499.726 497.176 499.055 502.247 505.158 507.906
EXISTING GROUND AT LHS SHOULDER EDGE LVL (M)	485.375 483.499 484.333 485.767 487.765 489.659 489.540 488.451 486.429 485.892 486.713 487.640 490.135 492.787 494.566 495.572 497.103 498.512 499.151 499.305 499.293 499.571 500.292 501.070 505.710 510.332 514.355 517.626 521.717 526.048 531.338 534.660 535.778 534.091 528.601 521.512 513.861 506.915 503.667 503.558 504.528 505.760 506.546 505.734 505.063 503.853 501.247 497.536 495.670 498.145 501.436
EXISTING GROUND AT RHS SHOULDER EDGE LVL (M)	481.415 481.240 481.341 482.183 483.467 484.234 481.451 479.257 477.497 477.284 479.399 482.981 485.831 487.759 488.090 489.087 490.766 493.393 494.034 494.357 494.659 495.417 495.885 496.128 498.345 502.529 506.192 507.340 507.815 514.668 529.826 542.134 542.020 539.019 533.076 525.533 518.114 511.280 509.294 509.267 510.098 511.253 511.439 510.498 509.905 507.578 503.406 499.203 499.309 502.346 505.307
HORIZONTAL SCHEMATIC (M)	L=15.000m, L=32.431m, R=−150.000m, L=15.000m, L=127.050m, R=150.000m, L=15.000m, L=13.522m, L=15.000m, L=35.000m, R=−15.000m, L=18.690m, L=35.000m, L=11.311m, L=15.000m, R=70.000m, L=14.436m, L=15.000m, L=175.045m
VERTICAL SCHEMATIC (G=%) (L=m),(R=M)	G=7.990, L=815.808m, R=−1092.974m, L=60.000m, G=2.500, L=90.000m, R=1092.896m, L=60.000m, G=7.990, L=545.705m
WIDENING SCHEMATIC (M) L R	3.500 4.100 4.100 3.500 ; 3.500 4.100 4.100 3.500 3.500 3.500 ; 3.500 3.500 5.000 5.000 3.500 ; 3.500 3.500 3.500 4.400 4.400 3.500
SUPERELEVATION SCHEMATIC (e=%) L R	e=4.700 e=2.500 e=4.700 e=7.000 e=5.700 e=2.500 ; e=4.700 e=2.500 e=4.700 e=7.000 e=5.700 e=2.500
CHAINAGE (M)	6500 6510 6520 6530 6540 6550 6560 6570 6580 6590 6600 6610 6620 6630 6640 6650 6660 6670 6680 6690 6700 6710 6720 6730 6740 6750 6760 6770 6780 6790 6800 6810 6820 6830 6840 6850 6860 6870 6880 6890 6900 6910 6920 6930 6940 6950 6960 6970 6980 6990 7000

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : **Global Infra Solutions**
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : **Valecha Engineering Ltd**
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : **SPS Technocrats Pvt. Ltd.**
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: **DEMWE - BRAHMKUND (NH-13)**
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE** *(From Km 6+500 to Km 7+000)*
Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet) Hor: 10 0 10 20 Ver: 1 0 1 2
Rev: **R4**
Drg. No: **VLE/DE-BR/HW/PNP/14A**

LEGEND :

PLAN :

EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE

HOR. TANGENT POINT

PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL
AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL

VER. TANGENT POINT

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd
Managing Director

SUVADRA CONSULTANTS Regd. No- 111/2004-05 BHUBANESWAR

DEMWE

BRAHMAKUND

MATCHLINE

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : **Glabal Infra Solutions**
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : **Valecha Engineering Ltd**
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) Approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : **SPS Technocrats Pvt. Ltd.**
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: **DEMWE - BRAHMKUND (NH-13)**
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE** *(From Km 7+000 to Km 7+500)*

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet) Hor: 10 0 10 20 Ver: 1 0 1 2

Rev: R4

Drg. No: VLE/DE-BR/HW/PNP/15

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS Regd. No- 117/2004-05 BHUBANESWAR

DEMWE ← BRAHMAKUND →

PROPOSED ROAD
EXISTING LEVEL AT PROP. CL
EXIST. GROUND @ RHS SHOULDER EDEG
EXIST. GROUND @ LHS SHOULDER EDEG

BOX CULVERT , (1x6mx6m)
CHAINAGE=724.9m

BOX CULVERT , (1x2mx2m)
CHAINAGE=7400m

CHAINAGE=7435.311m
LEVEL=544.450m

CHAINAGE=7495.311m
LEVEL=547.597m

Level Datum(M) = 490

| | | |

DEMWE

BRAHMAKUND

LEGEND :

PLAN :

EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL
AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DESIGN DIRECTOR

SUVADRA CONSULTANTS Regd. No- 111/2004-05 BHUBANESWAR

Shambhavi Techno Solutions Pvt. Ltd
Managing Director

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client :
NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer :
Glabal Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor :
Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant :
SUVADRA CONSULTANTS
(An ISO 9001 : 2008 Certified)
(Soil Testing Laboratory & Engineering Consultant)
Approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant :
SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant :
SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project:
DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE** *(From Km 7+500 to Km 8+000)*

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet)

Rev: R4

Drg. No: **VLE/DE-BR/HW/PNP/16**

LEGEND :

PLAN : EXISTING

- EXIST. ROAD
- K-I/R : KACHA RESIDENTIAL
- K-I/C : KACHA COMMERCIAL
- SP-I/R : SEMI PUCCA RESI.
- SP-I/C : SEMI PUCCA COMM.
- P-I/R : PUCCA RESIDENTIAL
- P-I/C : PUCCA COMMERCIAL
- 1000 CONTOUR

PROPOSED:

- TOE LINE / SH EDGE
- C/W EDGE
- CEN.LINE
- C/W EDGE
- SH EDGE / TOE LINE
- HOR. TANGENT POINT
- PROW — PROPOSED ROW
- BRIDGE
- BOX CULVERT
- DRAIN
- COVERED DRAIN
- RETAINING WALL
- BREAST WALL

PROFILE :

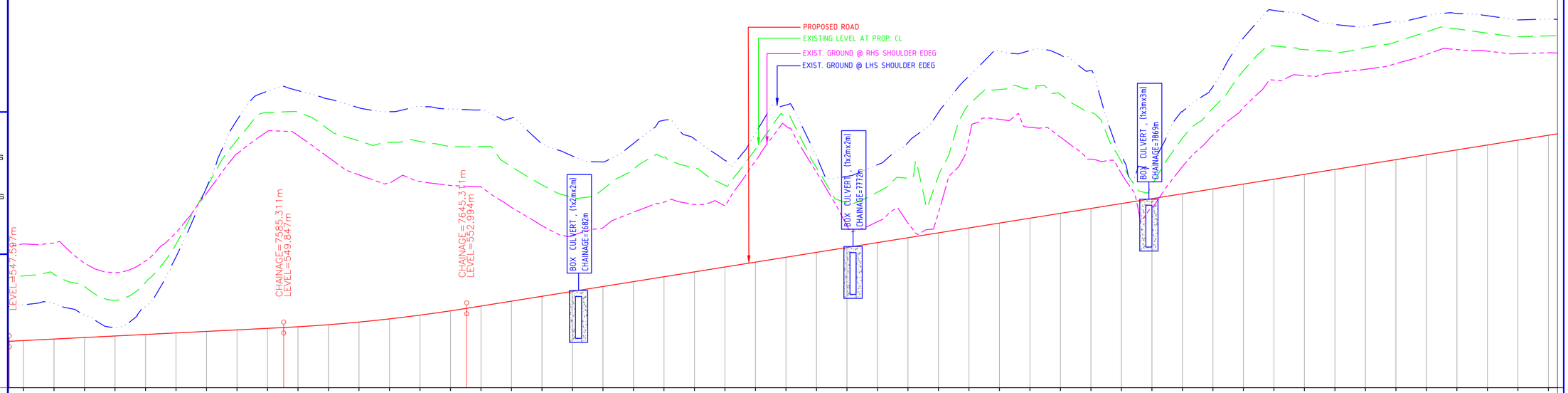
- PROP. LEVEL
- EXIST. GROUND @ RHS SHOULDER EDGE LVL
- EXIST. LEVEL AT PRO. CL
- EXIST. GROUND @ RHS SHOULDER EDGE LVL
- VER. TANGENT POINT

DEMWE ← → BRAHMAKUND

Yogesh Singh — DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd. — Managing Director

SUVADRA CONSULTANTS — Regd. No- 11/2004-05 — BHUBANESWAR



FINISHED ROAD LEVELS (M)	547.714	547.964	548.214	548.464	548.714	548.964	549.214	549.464	549.714	549.974	550.313	550.743	551.264	551.878	552.582	553.368	554.167	554.966	555.765	556.564	557.363	558.162	558.961	559.760	560.559	561.358	562.157	562.956	563.755	564.554	565.353	566.152	566.951	567.750	568.549	569.348	570.147	570.946	571.745	572.544	573.343	574.142	574.941	575.740	576.539	577.338	578.137	578.936	579.735	580.534	581.333
EXIST LEVELS AT PROP. CL (M)	558.295	558.548	556.570	554.295	557.226	563.478	572.726	580.552	585.054	585.086	582.310	580.424	580.169	580.305	579.476	579.473	576.169	573.198	571.152	572.495	576.818	577.728	575.966	573.125	579.031	584.801	576.035	570.226	572.024	574.277	574.692	586.339	588.827	588.960	588.039	585.002	576.983	573.151	580.875	585.780	591.907	595.945	595.356	594.970	595.672	596.616	598.242	598.745	598.048	597.455	597.601
EXISTING GROUND AT LHS SHOULDER EDGE LVL (M)	551.579	553.018	553.760	553.089	550.887	550.380	555.493	565.402	577.379	586.599	589.192	588.124	586.761	585.461	585.411	585.941	585.519	584.674	582.682	579.072	577.132	577.810	581.445	583.724	580.104	577.577	585.208	584.415	574.271	575.194	577.828	581.793	587.531	592.909	594.749	595.457	593.621	586.243	573.889	580.200	586.829	592.583	599.460	601.516	600.132	599.267	599.484	600.107	601.223	601.187	600.636
EXISTING GROUND AT RHS SHOULDER EDGE LVL (M)	562.576	563.051	563.739	563.447	560.362	560.416	563.194	567.935	574.150	579.459	582.023	579.951	576.329	574.162	574.640	573.454	572.969	571.456	568.340	565.465	565.546	567.520	569.446	570.588	570.072	572.687	579.861	580.301	572.115	565.819	568.019	565.079	573.865	583.423	583.213	581.805	578.326	575.261	569.275	571.245	577.156	582.079	587.320	590.608	590.970	591.796	592.388	593.590	595.233	595.205	594.886
HORIZONTAL SCHEMATIC (M)	7m	L=35.000m	R=15.000m L=17.070m	L=35.000m	L=47.412m	R=−320.000m L=49.057m	L=24.162m	L=15.000m R=−70.000m	L=22.149m	L=15.000m	L=13.736m	L=15.000m	R=150.000m L=22.614m	L=15.000m	L	L=20.000m	R=50.000m L=37.265m	L=20.000m	L=94.895m																																		
VERTICAL (G=%) SCHEMATIC (L=m),(R=M)	G=2.500 L=90.000m	R=1092.896m L=60.000m	G=7.990 L=792.440m
WIDENING SCHEMATIC (M) L R	3.500	5.000	5.000	3.500	3.500	4.400	4.400	3.500	3.500	4.100	4.100	4.700	4.700	3.500
SUPERELEVATION SCHEMATIC (e=%) L R	e=7.000	e=2.500	e=5.700	e=4.700	e=2.500	e=7.000
CHAINAGE (M)	7500	7510	7520	7530	7540	7550	7560	7570	7580	7590	7600	7610	7620	7630	7640	7650	7660	7670	7680	7690	7700	7710	7720	7730	7740	7750	7760	7770	7780	7790	7800	7810	7820	7830	7840	7850	7860	7870	7880	7890	7900	7910	7920	7930	7940	7950	7960	7970	7980	7990	8000

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : Glabal Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) Approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: **DEMWE - BRAHMKUND (NH-13)**
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE** *(From Km 7+500 to Km 8+000)*

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet) Hor: 10 0 10 20 Ver: 1 0 1 2

Rev: R4

Drg. No: VLE/DE-BR/HW/PNP/16A

LEGEND :

PLAN :

EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE

HOR. TANGENT POINT

PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL

VER. TANGENT POINT

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd
Managing Director

SUVADRA CONSULTANTS Regd. No: R1172004-05 BHUBANESWAR

DEMWE

BRAHMAKUND

MATCHLINE 9000

MATCHLINE 8000

MATCHLINE 7000

MATCHLINE 8500

HLINE 10000

CULVERT NO: 9/3
CHAINAGE(m): 9888
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

CULVERT NO: 8/3
CHAINAGE(m): 8578
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

CULVERT NO: 8/2
CHAINAGE(m): 8884
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

CULVERT NO: 8/1
CHAINAGE(m): 8269
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

CULVERT NO: 7/3
CHAINAGE(m): 6964
TYPE : BOX CULVERT
SIZE : 1x6mx6m
PROPOSAL : NEW

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : Glabal Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) Approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: PLAN & LONGITUDINAL PROFILE (From Km 8+000 to Km 8+500)
Scale: Hor: 10 0 10 20 ; Ver: 1 0 1 2 (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet)
Rev: R4
Drg. No: VLE/DE-BR/HW/PNP/17

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE ← → BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS Regd. No- 11/2004-05 BHUBANESWAR

PROPOSED ROAD
EXISTING LEVEL AT PROP. CL
EXIST. GROUND @ RHS SHOULDER EDEG
EXIST. GROUND @ LHS SHOULDER EDEG
BOX CULVERT , (1x2mx2m)
CHAINAGE=8269m
CHAINAGE=8437.751m
LEVEL=616.310m
CHAINAGE=8497.751m
LEVEL=619.457m

Level Datum(M) = 570

FINISHED ROAD LEVELS (M)	581.333 582.132 582.931 583.730 584.529 585.328 586.127 586.926 587.725 588.524 589.323 590.122 590.921 591.720 592.519 593.318 594.117 594.916 595.715 596.514 597.313 598.112 598.911 599.710 600.509 601.308 602.107 602.906 603.705 604.504 605.303 606.102 606.901 607.700 608.499 609.298 610.097 610.896 611.695 612.494 613.293 614.092 614.891 615.690 616.487 617.220 617.861 618.410 618.869 619.235 619.513
EXIST LEVELS AT PROP. CL (M)	597.601 597.738 595.865 593.982 593.935 594.436 596.448 595.580 595.817 596.892 596.775 595.986 595.277 597.353 598.309 597.880 598.873 601.064 603.015 603.650 604.019 605.100 607.129 609.173 609.782 610.234 608.052 606.369 612.615 617.474 621.369 624.885 626.993 623.953 621.052 617.998 618.560 620.421 622.250 623.659 622.638 621.036 619.084 617.189 616.049 615.061 614.533 616.980 621.579 623.480 624.291
EXISTING GROUND AT LHS SHOULDER EDGE LVL (M)	600.636 600.270 600.331 600.389 598.971 597.912 597.525 598.601 599.194 599.025 599.330 599.090 598.320 597.238 598.318 601.152 601.586 601.480 603.711 606.029 607.876 608.038 608.680 609.738 611.553 612.429 613.440 614.094 611.779 614.225 620.191 624.374 627.328 630.720 630.093 626.979 623.982 622.478 623.171 625.043 626.547 626.873 625.774 624.379 622.425 620.712 619.623 618.898 619.527 622.988 627.491
EXISTING GROUND AT RHS SHOULDER EDGE LVL (M)	594.886 594.751 594.777 594.255 591.840 591.463 592.895 594.728 593.293 592.518 593.775 594.561 594.159 593.362 592.900 594.520 595.071 595.154 596.169 598.255 599.487 599.311 599.768 601.706 603.801 604.976 604.355 603.054 600.089 601.984 607.918 612.825 617.267 621.180 621.021 618.557 615.864 613.596 615.241 617.021 618.885 619.741 618.163 616.210 614.288 612.825 611.695 610.720 611.269 614.347 617.035
HORIZONTAL SCHEMATIC (M)	L=30.000m, L=23.780m, R=−30.000m, L=30.000m, L, R=50.000m, L=20.000m, L=17.347m, L=20.000m, L=85.664m, R, L=30.000m, L, L=30.000m, L=200.767m
VERTICAL SCHEMATIC (G=%) (L=m),(R=M)	G=7.990, L=792.440m, R=−1092.896m, L=60.000m
WIDENING SCHEMATIC (M) L R	3.500, 5.000, 5.000, 3.500, 3.500, 4.700, 4.700, 3.500, 3.500, 5.000, 5.000, 3.500, 3.500
SUPERELEVATION SCHEMATIC (e=%) L R	e=7.000, e=7.000, e=7.000, e=7.000, e=2.500, e=2.500, e=5.900, e=5.900, e=2.500, e=2.500
CHAINAGE (M)	8000 8010 8020 8030 8040 8050 8060 8070 8080 8090 8100 8110 8120 8130 8140 8150 8160 8170 8180 8190 8200 8210 8220 8230 8240 8250 8260 8270 8280 8290 8300 8310 8320 8330 8340 8350 8360 8370 8380 8390 8400 8410 8420 8430 8440 8450 8460 8470 8480 8490 8500

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : **Glabal Infra Solutions**
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : **Valecha Engineering Ltd**
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) Approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : **SPS Technocrats Pvt. Ltd.**
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: **DEMWE - BRAHMKUND (NH-13)**
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE – BRAHMKUND SECTION OF NH-13 FROM CH 0.000 TO CH 18.644 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE**
(From Km 8+000 to Km 8+500)

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet) Hor: 10 0 10 20 Ver: 1 0 1 2

Rev: R4

Drg. No: **VLE/DE-BR/HW/PNP/17A**

LEGEND :

PLAN :

EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS Regd. No- 11/2004-05 BHUBANESWAR

DEMWE

BRAHMAKUND

MATCHLINE 8500

MATCHLINE 9000

MATCHLINE 10000

8600 8700 8800 8900 9000 9100 9200 9300 9400 9500 9600 9700 9800 9900 10000 10100 10200 10300 10400

HIP NO. 76 @ CH.(m) 8618.939
X(m)=238010.175 Y(m)=3088671.272
R (m) 70 Ls (m) 15.000
Dc(deg) 6.005 S(m) 0.134
Lc(m) 7.336 Ts(deg) 6.139
Ts(m) 18.782 D(deg) 18.282
Es(m) 1.036 e(%) 5.70%
Design Speed (V): 30 kmph

HIP NO. 77 @ CH.(m) 8794.664
X(m)=237990.916 Y(m)=3088846.094
R (m) 90 Ls (m) 15.000
Dc(deg) 2.112 S(m) 0.104
Lc(m) 3.318 Ts(deg) 4.775
Ts(m) 16.700 D(deg) 11.662
Es(m) 0.573 e(%) 4.40%
Design Speed (V): 30 kmph

HIP NO. 78 @ CH.(m) 8985.117
X(m)=237881.865 Y(m)=3088999.348
R (m) 120 Ls (m) 15.000
Dc(deg) 8.775 S(m) 0.078
Lc(m) 12.095 Ts(deg) 3.458
Ts(m) 21.113 D(deg) 12.937
Es(m) 0.963 e(%) 3.50%
Design Speed (V): 30 kmph

HIP NO. 79 @ CH.(m) 9122.816
X(m)=237810.711 Y(m)=3088909.233
R (m) 50 Ls (m) 20.000
Dc(deg) 17.345 S(m) 0.333
Dc(deg) 19.878 D(deg) 32.797
Es(m) 4.606 e(%) 7.00%
Design Speed (V): 30 kmph

HIP NO. 80 @ CH.(m) 10035.411
X(m)=238064.386 Y(m)=3088907.139
R (m) 90 Ls (m) 15.000
Dc(deg) 14.812 S(m) 0.117
Lc(m) 20.685 Ts(deg) 5.372
Ts(m) 25.807 D(deg) 25.559
Es(m) 2.772 e(%) 5.00%
Design Speed (V): 30 kmph

HIP NO. 81 @ CH.(m) 10105.896
X(m)=238083.947 Y(m)=3088866.588
R (m) 70 Ls (m) 20.000
Dc(deg) 15.533 S(m) 0.273
Lc(m) 16.537 Ts(deg) 9.393
Ts(m) 28.910 D(deg) 14.318
Es(m) 3.128 e(%) 6.60%
Design Speed (V): 30 kmph

HIP NO. 90 @ CH.(m) 10193.985
X(m)=238048.973 Y(m)=3088896.189
R (m) 15 Ls (m) 35.000
Dc(deg) 65.535 S(m) 3.403
Lc(m) 17.157 Ts(deg) 66.845
Ts(m) -91.92 D(deg) 199.225
Es(m) -129.309 e(%) 7.00%
Design Speed (V): 20 kmph

HIP NO. 91 @ CH.(m) 10272.409
X(m)=238098.894 Y(m)=3088877.008
R (m) 45 Ls (m) 20.000
Dc(deg) 32.227 S(m) 0.401
Lc(m) 23.097 Ts(deg) 13.975
Ts(m) 33.395 D(deg) 60.225
Es(m) 6.867 e(%) 7.00%
Design Speed (V): 30 kmph

HIP NO. 92 @ CH.(m) 10370.039
X(m)=238083.629 Y(m)=3088976.118
R (m) 70 Ls (m) 15.000
Dc(deg) 16.297 S(m) 0.134
Lc(m) 19.911 Ts(deg) 6.139
Ts(m) 25.358 D(deg) 28.575
Es(m) 2.372 e(%) 5.70%
Design Speed (V): 30 kmph

CULVERT NO. 8/1 CHAINAGE(m) 8618.75 TYPE BOX CULVERT SIZE 2mx2m PROPOSAL NEW

CULVERT NO. 8/2 CHAINAGE(m) 8794.664 TYPE BOX CULVERT SIZE 2mx2m PROPOSAL NEW

CULVERT NO. 8/3 CHAINAGE(m) 8978 TYPE BOX CULVERT SIZE 2mx2m PROPOSAL NEW

CULVERT NO. 9/1 CHAINAGE(m) 9122.816 TYPE BOX CULVERT SIZE 2mx2m PROPOSAL NEW

CULVERT NO. 9/2 CHAINAGE(m) 9965 TYPE BOX CULVERT SIZE 2mx2m PROPOSAL NEW

CULVERT NO. 10/1 CHAINAGE(m) 10143 TYPE BOX CULVERT SIZE 2mx2m PROPOSAL NEW

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : Glabal Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) Approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: PLAN & LONGITUDINAL PROFILE (From Km 8+500 to Km 9+000)
Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet)
Rev: R4
Drg. No: VLE/DE-BR/HW/PNP/18

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

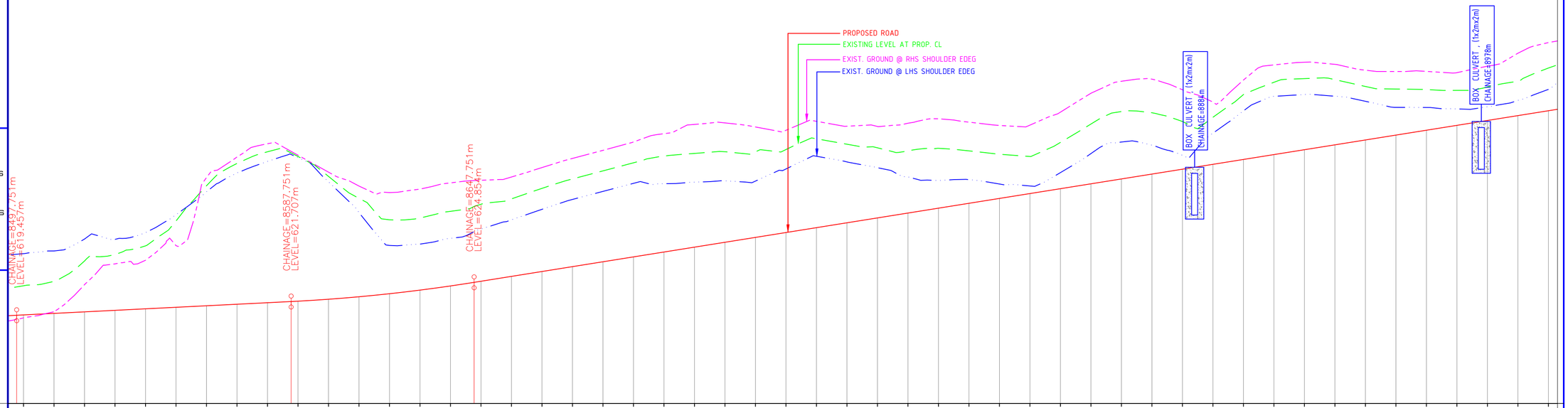
PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE ← → BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd
@r.
Managing Director

SUVADRA CONSULTANTS Regd. No: 112/2004-05 BHUBANESWAR



Level Datum(M) = 605

FINISHED ROAD LEVELS (M)	619.513 619.763 620.013 620.263 620.513 620.763 621.013 621.263 621.513 621.765 622.081 622.489 622.989 623.579 624.262 625.033 625.832 626.631 627.430 628.229 629.028 629.827 630.626 631.425 632.224 633.023 633.822 634.621 635.420 636.219 637.018 637.817 638.616 639.415 640.214 641.013 641.812 642.611 643.410 644.209 645.008 645.807 646.606 647.405 648.204 649.003 649.802 650.601 651.400 652.199 652.998
EXIST LEVELS AT PROP. CL (M)	624.291 625.010 628.353 629.412 630.836 634.915 640.896 644.359 646.269 645.495 642.233 638.624 635.112 635.396 636.500 637.661 638.542 640.265 641.816 643.136 644.460 645.556 645.997 646.273 646.280 646.632 648.399 647.506 646.918 646.438 646.840 646.418 645.862 645.494 647.804 650.818 652.867 652.670 651.239 651.928 655.651 657.666 658.269 658.100 656.980 656.559 656.473 656.335 656.897 657.840 660.004
EXISTING GROUND AT LHS SHOULDER EDGE LVL (M)	627.491 629.302 629.932 630.713 633.027 632.867 634.489 637.315 640.921 643.402 645.289 644.424 639.522 633.904 630.860 631.415 632.292 634.194 635.758 637.464 638.953 640.272 641.183 641.057 641.350 641.381 642.328 644.373 645.195 644.238 643.065 640.951 641.198 641.484 640.884 641.092 643.982 647.216 647.630 645.877 645.663 650.106 654.045 655.472 655.625 655.223 654.127 653.543 653.395 653.113 653.580
EXISTING GROUND AT RHS SHOULDER EDGE LVL (M)	617.035 618.402 619.317 621.381 626.312 628.164 629.896 631.832 643.273 646.691 647.436 644.651 642.055 640.221 640.479 640.777 641.398 641.670 642.697 644.273 645.683 647.019 648.562 649.688 650.912 650.802 649.981 650.596 650.925 650.559 650.559 651.357 651.542 650.909 650.479 651.475 653.954 655.738 658.111 657.668 655.795 655.172 659.647 660.712 660.899 660.214 659.437 659.456 659.331 659.686 660.659
HORIZONTAL SCHEMATIC (M)	L=35.000m; L=15.849m R=−15.000m; L=35.000m; L=14.595m; L=15.000m; R L; L=15.000m; L=140.398m; L=15.000m R; L=15.000m; L=45.057m; L=15.000m; L=24.279m R=−70.000m; L=15.000m; L=57.410m; L=15.000m; L=12.095m R
VERTICAL (G=%) SCHEMATIC (L=m),(R=M)	G=2.500; L=90.000m; R=1092.896m; L=60.000m; G=7.990; L=658.942m
WIDENING SCHEMATIC (M) L R	3.500 5.000 5.000 3.500 3.500 3.500 4.400 4.400 3.500 3.500 4.400 4.400 3.500 3.500 4.400 4.400 3.500 3.500 4.100 4.100
SUPERELEVATION SCHEMATIC (e=%) L R	e=2.500 e=7.000 e=5.700 e=2.500 e=4.400 e=2.500 e=5.700 e=2.500 e=3.300
CHAINAGE (M)	8500 8510 8520 8530 8540 8550 8560 8570 8580 8590 8600 8610 8620 8630 8640 8650 8660 8670 8680 8690 8700 8710 8720 8730 8740 8750 8760 8770 8780 8790 8800 8810 8820 8830 8840 8850 8860 8870 8880 8890 8900 8910 8920 8930 8940 8950 8960 8970 8980 8990 9000

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : **Glabal Infra Solutions**
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : **Valecha Engineering Ltd**
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) Approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : **SPS Technocrats Pvt. Ltd.**
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: **DEMWE - BRAHMKUND (NH-13)**
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE** *(From Km 8+500 to Km 9+000)*
Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet) Hor: 10 0 10 20 Ver: 1 0 1 2
Rev: **R4**
Drg. No: **VLE/DE-BR/HW/PNP/18A**

LEGEND :

PLAN :

EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE

HOR. TANGENT POINT

PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL
AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL

VER. TANGENT POINT

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd
Dir.
Managing Director

SUVADRA CONSULTANTS Regd. No- 1112004-05 BHUBANESWAR

DEMWE

BRAHMAKUND

MATCHLINE

MATCHLINE

MATCHLINE

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : Global Infra Solutions
E-811A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

E/PC Contractor : Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) Approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE – BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: PLAN & LONGITUDINAL PROFILE (From Km 9+000 to Km 10+000)

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet)
Hor: 10 0 10 20
Ver: 1 0 1 2

Rev: R4

Drg. No: VLE/DE-BR/HW/PNP/19

LEGEND :

PLAN : EXISTING

- EXIST. ROAD
- K-I/R : KACHA RESIDENTIAL
- K-I/C : KACHA COMMERCIAL
- SP-I/R : SEMI PUCCA RESI.
- SP-I/C : SEMI PUCCA COMM.
- P-I/R : PUCCA RESIDENTIAL
- P-I/C : PUCCA COMMERCIAL
- 1000 CONTOUR

PROPOSED:

- TOE LINE / SH EDGE
- C/W EDGE
- CEN.LINE
- C/W EDGE
- SH EDGE / TOE LINE
- HOR. TANGENT POINT
- PROW — PROPOSED ROW
- BRIDGE
- BOX CULVERT
- DRAIN
- COVERED DRAIN
- RETAINING WALL
- BREAST WALL

PROFILE :

- PROP. LEVEL
- EXIST. GROUND @ RHS SHOULDER EDGE LVL
- EXIST. LEVEL AT PRO. CL
- EXIST. GROUND @ RHS SHOULDER EDGE LVL
- VER. TANGENT POINT

DEMWE ← → BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd. Managing Director

SUVADRA CONSULTANTS Regd. No. 111/2004-05 BHUBANESWAR

PROPOSED ROAD
EXISTING LEVEL AT PROP. CL
EXIST. GROUND @ RHS SHOULDER EDEG
EXIST. GROUND @ LHS SHOULDER EDEG

BOX CULVERT (1x3m x3m) CHAINAGE=9159m

CHAINAGE=9306.693m LEVEL=677.503m

CHAINAGE=9366.693m LEVEL=680.650m

CHAINAGE=9456.693m LEVEL=682.900m

Level Datum(M) = 645

FINISHED ROAD LEVELS (M)	652.998 653.797 654.596 655.395 656.194 656.993 657.792 658.591 659.390 660.189 660.988 661.787 662.586 663.385 664.184 664.983 665.782 666.581 667.380 668.179 668.978 669.777 670.576 671.375 672.174 672.973 673.772 674.571 675.370 676.169 676.968 677.762 678.485 679.117 679.657 680.105 680.462 680.733 680.983 681.233 681.483 681.733 681.983 682.233 682.483 682.733 682.988 683.314 683.731 684.240 684.841
EXIST LEVELS AT PROP. CL (M)	660.004 665.071 674.575 681.958 679.454 676.188 673.822 672.638 670.096 671.584 674.194 677.694 677.253 675.917 674.936 674.286 673.740 674.637 675.021 678.468 683.692 688.946 690.921 687.604 684.289 682.340 680.498 681.723 682.273 684.097 684.155 682.808 685.021 688.028 689.978 692.071 689.742 686.348 685.846 686.140 683.656 685.333 688.895 695.028 701.509 703.608 705.318 706.633 707.366 708.119 706.525
EXISTING GROUND AT LHS SHOULDER EDGE LVL (M)	653.580 654.959 657.675 663.931 674.407 676.182 673.084 672.169 671.261 667.158 665.437 667.667 671.105 669.361 668.230 667.480 666.749 666.094 666.810 667.717 667.600 670.722 677.925 682.832 684.292 680.177 676.295 673.566 673.633 675.947 676.895 679.462 678.014 678.284 680.970 683.619 685.754 685.918 682.050 682.058 682.657 681.457 679.759 682.736 689.613 698.250 704.723 706.980 708.412 709.570 709.933
EXISTING GROUND AT RHS SHOULDER EDGE LVL (M)	660.659 663.413 664.573 671.589 682.564 686.071 683.732 679.300 676.456 675.652 676.191 677.748 680.354 683.981 686.529 683.648 682.090 680.515 680.398 681.527 683.828 686.628 692.142 696.740 694.653 690.614 689.276 688.580 687.766 688.200 689.615 689.920 690.216 689.624 691.371 693.756 695.463 694.990 691.454 689.528 689.427 688.589 688.199 689.977 693.184 696.815 700.114 701.945 703.522 704.642 705.559
HORIZONTAL SCHEMATIC (M)	L=15.000m; L=53.596m; L=15.000m; R=70.000m; L=46.671m; L=15.000m; L=26.175m; L=20.000m; L=58.437m; R=-50.000m; L=20.000m; L; L=20.000m; R=50.000m; L=14.972m; L=20.000m; L=44.552m; L=35.000m; R=15.000m; L=15.762m; L=35.000m; L=22.932m; L=20.000m
VERTICAL SCHEMATIC (G=%) (L=m),(R=M)	G=7.990; L=658.942m; R=-1092.896m L=60.000m; G=2.500; L=90.000m; R=1092.896m L=60.000m
WIDENING SCHEMATIC (M) L R	4.100 3.500 3.500 4.400 4.400 3.500 3.500 4.700 4.700 3.500 3.500 4.700 4.700 3.500 3.500 3.500 5.000 5.000 3.500 3.500 4.400
SUPERELEVATION SCHEMATIC (e=%) L R	e=2.500 e=5.700 e=7.000 e=7.000 e=2.500 e=7.000 e=2.500 e=5.700 e=7.000 e=7.000 e=2.500 e=7.000
CHAINAGE (M)	9000 9010 9020 9030 9040 9050 9060 9070 9080 9090 9100 9110 9120 9130 9140 9150 9160 9170 9180 9190 9200 9210 9220 9230 9240 9250 9260 9270 9280 9290 9300 9310 9320 9330 9340 9350 9360 9370 9380 9390 9400 9410 9420 9430 9440 9450 9460 9470 9480 9490 9500

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : Glabal Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) Approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: **DEMWE - BRAHMKUND (NH-13)**
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE** *(From Km 9+000 to Km 9+500)*

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet) Hor: 10 0 10 20 Ver: 1 0 1 2

Rev: **R4**

Drg. No: **VLE/DE-BR/HW/PNP/19A**

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS Regd. No:- 11/2004-05 BHUBANESWAR

DEMWE ← BRAHMAKUND →

PROPOSED ROAD
EXISTING LEVEL AT PROP. CL
EXIST. GROUND @ RHS SHOULDER EDEG
EXIST. GROUND @ LHS SHOULDER EDEG

CHAINAGE=9516.693m
LEVEL=686.047m

BOX CULVERT , (1x3mx3m)
CHAINAGE=9684m

BOX CULVERT , (1x2mx2m)
CHAINAGE=9888m

BOX CULVERT , (1x2mx2m)
CHAINAGE=9965m

Level Datum(M) = 670

| | | |

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS Regd. No- 11/2004-05 BHUBANESWAR

DEMWE

BRAHMAKUND

8300 8400 8500 8600 8700 8800 8900 9000 9100 9200 9300 9400 9500 9600 9700 9800 9900 10000 10100 10200 10300 10400 10500 10600

MATCHLINE

HIP NO. 77 @ CH.(m) 8794.664
X(m)=237990.916 Y(m)=3088846.094
R (m) 90 Ls (m) 15.000
Dc(deg) 2.112 S(m) 0.104
Lc(m) 3.318 Ts(deg) 4.775
Ts(m) 16.700 D(deg) 11.662
Es(m) 0.573 e(%) 4.40%
Design Speed (V): 30 kmph

HIP NO. 78 @ CH.(m) 8863.59
X(m)=237963.348 Y(m)=3088831.204
R (m) 70 Ls (m) 15.000
Dc(deg) 19.673 S(m) 0.134
Lc(m) 24.229 Ts(deg) 6.139
Ts(m) 27.707 D(deg) 32.150
Es(m) 2.986 e(%) 5.70%
Design Speed (V): 30 kmph

HIP NO. 88 @ CH.(m) 10033.417
X(m)=238044.395 Y(m)=3088897.39
R (m) 80 Ls (m) 15.000
Dc(deg) 14.812 S(m) 0.117
Lc(m) 20.667 Ts(deg) 5.371
Ts(m) 25.667 D(deg) 25.565
Es(m) 2.152 e(%) 5.00%
Design Speed (V): 30 kmph

HIP NO. 89 @ CH.(m) 10106.896
X(m)=238083.947 Y(m)=3088866.588
R (m) 210 Ls (m) 20.000
Dc(deg) 16.533 S(m) 0.273
Lc(m) 16.533 Ts(deg) 9.393
Ts(m) 28.910 D(deg) 34.318
Es(m) 3.128 e(%) 6.60%
Design Speed (V): 30 kmph

HIP NO. 90 @ CH.(m) 10193.985
X(m)=238049.973 Y(m)=3088896.189
R (m) 15 Ls (m) 35.000
Dc(deg) 65.535 S(m) 3.403
Lc(m) 17.157 Ts(deg) 66.845
Ts(m) +91.923 D(deg) 199.225
Es(m) -129.269 e(%) 7.00%
Design Speed (V): 20 kmph

HIP NO. 91 @ CH.(m) 10272.508
X(m)=238098.894 Y(m)=3088877.098
R (m) 4 Ls (m) 20.000
Dc(deg) 32.277 S(m) 0.467
Lc(m) 23.007 Ts(deg) 13.975
Ts(m) 33.960 D(deg) 60.226
Es(m) 6.867 e(%) 7.00%
Design Speed (V): 20 kmph

HIP NO. 92 @ CH.(m) 10370.039
X(m)=238083.629 Y(m)=3088976.118
R (m) 70 Ls (m) 15.000
Dc(deg) 16.297 S(m) 0.134
Lc(m) 19.911 Ts(deg) 6.139
Ts(m) 25.358 D(deg) 28.575
Es(m) 2.372 e(%) 5.70%
Design Speed (V): 30 kmph

CULVERT NO: 8/2 CHAINAGE(m): 8864 TYPE: BOX CULVERT SIZE: 1x2mx2m PROPOSAL: NEW

CULVERT NO: 8/3 CHAINAGE(m): 8978 TYPE: BOX CULVERT SIZE: 1x2mx2m PROPOSAL: NEW

CULVERT NO: 9/3 CHAINAGE(m): 9888 TYPE: BOX CULVERT SIZE: 1x2mx2m PROPOSAL: NEW

CULVERT NO: 9/4 CHAINAGE(m): 9965 TYPE: BOX CULVERT SIZE: 1x2mx2m PROPOSAL: NEW

CULVERT NO: 10/1 CHAINAGE(m): 10436 TYPE: BOX CULVERT SIZE: 1x2mx2m PROPOSAL: NEW

CULVERT NO: 10/2 CHAINAGE(m): 10498 TYPE: BOX CULVERT SIZE: 1x2mx2m PROPOSAL: NEW

HIP NO. 93 @ CH.(m) 10519.434
X(m)=237992.424 Y(m)=3089035.709
R (m) 70 Ls (m) 15.000
Dc(deg) 20.532 S(m) 0.134
Lc(m) 25.045 Ts(deg) 6.139
Ts(m) 28.445 D(deg) 32.810
Es(m) 3.110 e(%) 5.70%
Design Speed (V): 30 kmph

HIP NO. 94 @ CH.(m) 10586.049
X(m)=237953.533 Y(m)=3089145.573
R (m) 80 Ls (m) 20.000
Dc(deg) 28.273 S(m) 0.467
Lc(m) 41.585 D(deg) 51.973
Ts(m) 33.972 e(%) 7.00%
Design Speed (V): 30 kmph

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : **Glabal Infra Solutions**
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : **Valecha Engineering Ltd**
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : **SPS Technocrats Pvt. Ltd.**
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: **DEMWE - BRAHMKUND (NH-13)**
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE – BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE** *(From Km 10+000 to Km 10+500)*
Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet)
Hor: 10 0 10 20
Ver: 1 0 1 2
Rev: R4
Drg. No: VLE/DE-BR/HW/PNP/ 20

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS Regd. No. 11/2004-05 BHUBANESWAR

DEMWE ← BRAHMAKUND →

PROPOSED ROAD
EXISTING LEVEL AT PROP. CL
EXIST. GROUND @ RHS SHOULDER EDEG
EXIST. GROUND @ LHS SHOULDER EDEG

CHAINAGE=10088.984m LEVEL=771.773m
CHAINAGE=10148.984m LEVEL=734.920m
CHAINAGE=10238.984m LEVEL=737.170m
CHAINAGE=10298.984m LEVEL=740.317m
BOX CULVERT (1x2mx2m) CHAINAGE=10434m

Level Datum(M) = 700

FINISHED ROAD LEVELS (M)	724.663 725.462 726.261 727.060 727.859 728.658 729.457 730.256 731.055 731.854 732.598 733.250 733.811 734.281 734.659 734.946 735.196 735.446 735.696 735.946 736.196 736.446 736.696 736.946 737.196 737.501 737.898 738.386 738.965 739.636 740.398 741.197 741.996 742.795 743.594 744.393 745.192 745.991 746.790 747.589 748.388 749.187 749.986 750.785 751.584 752.383 753.182 753.981 754.780 755.579 756.378
EXIST LEVELS AT PROP. CL (M)	727.258 729.951 732.333 732.195 733.971 738.779 743.651 744.522 743.688 739.233 737.299 737.334 736.521 735.189 735.868 738.138 741.106 742.855 742.098 741.374 745.058 751.018 755.352 755.840 756.587 757.135 757.260 757.206 760.523 765.026 764.949 764.141 761.711 758.771 756.609 755.505 753.252 756.987 759.495 760.425 760.230 758.584 757.080 756.326 756.661 761.745 763.019 766.667 770.389 768.728 766.480
EXISTING GROUND AT LHS SHOULDER EDGE LVL (M)	724.206 727.309 731.394 735.651 738.551 738.681 743.379 748.012 751.000 750.376 748.770 743.281 742.521 742.003 741.016 739.424 740.608 743.162 746.588 748.423 745.830 746.651 749.357 753.026 754.445 754.747 754.283 752.911 753.096 752.593 756.923 762.052 761.942 760.584 757.673 754.925 752.906 749.865 748.985 752.587 754.762 758.375 756.746 754.695 752.077 751.139 755.230 757.223 759.285 763.529 765.682
EXISTING GROUND AT RHS SHOULDER EDGE LVL (M)	718.979 722.098 724.329 725.278 724.660 724.412 726.962 732.751 737.169 738.592 735.918 733.351 733.018 733.093 731.492 731.452 732.644 735.347 737.243 739.567 737.010 738.763 745.546 752.913 756.748 757.717 758.698 759.529 760.792 762.779 765.099 767.672 768.219 767.043 763.182 760.703 760.600 759.997 760.178 763.824 765.655 763.913 762.126 760.793 760.140 761.348 765.740 767.877 769.388 773.053 774.123
HORIZONTAL SCHEMATIC (M)	L=15.000m; R=80.000m L=20.681m; L=15.000m; L=18.875m; L=20.000m; L=16.538m R=−61.000m; L=20.000m; L=16.241m; L=35.000m; L=17.157m R=−15.000m; L=35.000m; L; R=41.000m L=23.097m; L=20.000m; L=40.926m; L=15.000m; L=19.910m R=−70.000m; L=15.000m; L=96.898m; L=15.000m
VERTICAL (G=%) SCHEMATIC (L=m),(R=M)	G=7.990 L=572.292m; R=−1092.896m L=60.000m; G=2.500 L=90.000m; R=1092.897m L=60.000m; G=7.990 L=572.988m
WIDENING SCHEMATIC (M) L R	3.500 4.400 4.400 3.500 3.500 4.400 4.400 3.500 3.500 5.000 5.000 3.500 3.500 3.500 3.500 4.700 4.700 3.500 3.500 4.400 4.400 3.500 3.500
SUPERELEVATION SCHEMATIC (e=%) L R	e=2.500 e=5.000 e=6.600 e=2.500 e=7.000 e=7.000 e=2.500 e=5.700 e=2.500
CHAINAGE (M)	10000 10010 10020 10030 10040 10050 10060 10070 10080 10090 10100 10110 10120 10130 10140 10150 10160 10170 10180 10190 10200 10210 10220 10230 10240 10250 10260 10270 10280 10290 10300 10310 10320 10330 10340 10350 10360 10370 10380 10390 10400 10410 10420 10430 10440 10450 10460 10470 10480 10490 10500

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : **Glabal Infra Solutions**
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : **Valecha Engineering Ltd**
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) Approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : **SPS Technocrats Pvt. Ltd.**
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: **DEMWE - BRAHMKUND (NH-13)**
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE** *(From Km 10+000 to Km 10+500)*
Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet) Hor: 10 0 10 20 Ver: 1 0 1 2
Rev: **R4**
Drg. No: **VLE/DE-BR/HW/PNP/20A**

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE

BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS Regd. No- 11/2004-05

MATCHLINE 11000

MATCHLINE 10500

CULVERT NO: 10/5 CHAINAGE(m): 10921 TYPE : BOX CULVERT SIZE : 1x2mx2m PROPOSAL : NEW

CULVERT NO: 10/4 CHAINAGE(m): 10773 TYPE : BOX CULVERT SIZE : 1x2mx2m PROPOSAL : NEW

CULVERT NO: 9/1 CHAINAGE(m): 9359 TYPE : BOX CULVERT SIZE : 1x3mx3m PROPOSAL : NEW

CULVERT NO: 9/2 CHAINAGE(m): 9684 TYPE : BOX CULVERT SIZE : 1x3mx3m PROPOSAL : NEW

CULVERT NO: 10/3 CHAINAGE(m): 10617 TYPE : BOX CULVERT SIZE : 1x2mx2m PROPOSAL : NEW

CULVERT NO: 10/6 CHAINAGE(m): 10518 TYPE : BOX CULVERT SIZE : 1x2mx2m PROPOSAL : NEW

CULVERT NO: 11/1 CHAINAGE(m): 11093 TYPE : BOX CULVERT SIZE : 1x2mx2m PROPOSAL : NEW

CULVERT NO: 11/2 CHAINAGE(m): 11253 TYPE : BOX CULVERT SIZE : 1x2mx2m PROPOSAL : NEW

HIP NO. 84 @ CH.(m) 9516.236
X(m)=237662.573 Y(m)=3089173.318
R (m) 0 LS (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 35.185 Ts(deg) 9.393
Ts(m) 37.460 D(deg) 53.971
Es(m) 41.192 e(%) 6.60%
7.760
Design Speed (V): 30 kmph

HIP NO. 85 @ CH.(m) 9616.853
X(m)=237777.048 Y(m)=3089198.568
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 72.884 Ts(deg) 9.393
Ts(m) 77.351 D(deg) 91.439
Es(m) 72.823 e(%) 6.60%
26.765
Design Speed (V): 30 kmph

HIP NO. 86 @ CH.(m) 9921.437
X(m)=237800.435 Y(m)=3089078.129
R (m) 0 Ls (m) 20.000
Dc(deg) 4 S(m) 0.407
Lc(m) 42.233 Ts(deg) 13.975
Ts(m) 30.220 D(deg) 70.180
Es(m) 39.073 e(%) 7.00%
9.604
Design Speed (V): 30 kmph

HIP NO. 87 @ CH.(m) 9882.041
X(m)=237964.164 Y(m)=3089...
R (m) 0 Ls (m) 20.000
Dc(deg) 4 S(m) 0.407
Lc(m) 42.233 Ts(deg) 13.975
Ts(m) 30.220 D(deg) 70.180
Es(m) 39.073 e(%) 7.00%
9.604
Design Speed (V): 30 kmph

HIP NO. 88 @ CH.(m) 10596.008
X(m)=238153.733 Y(m)=3089153.173
R (m) 0 Ls (m) 20.000
Dc(deg) 4 S(m) 0.407
Lc(m) 42.233 Ts(deg) 13.975
Ts(m) 30.220 D(deg) 70.180
Es(m) 39.073 e(%) 7.00%
9.604
Design Speed (V): 30 kmph

HIP NO. 89 @ CH.(m) 10836.164
X(m)=238292.633 Y(m)=3089278.129
R (m) 0 Ls (m) 20.000
Dc(deg) 4 S(m) 0.835
Lc(m) 90.575 Ts(deg) 28.648
Ts(m) 31.617 D(deg) 147.872
Es(m) 82.266 e(%) 7.00%
55.288
Design Speed (V): 20 kmph

HIP NO. 90 @ CH.(m) 11037.429
X(m)=237940.707 Y(m)=3089320.275
R (m) 150 Ls (m) 15.000
Dc(deg) 3.362 S(m) 0.063
Lc(m) 8.807 Ts(deg) 2.865
Ts(m) 19.430 D(deg) 9.091
Es(m) 0.536 e(%) 2.67%
Design Speed (V): 30 kmph

HIP NO. 98 @ CH.(m) 11189.237
X(m)=238084.001 Y(m)=3089371.141
R (m) 150 Ls (m) 15.000
Dc(deg) 12.597 S(m) 0.063
Lc(m) 32.978 Ts(deg) 2.865
Ts(m) 31.705 D(deg) 18.326
Es(m) 2.002 e(%) 2.67%
Design Speed (V): 30 kmph

HIP NO. 91 @ CH.(m) 9215.546
X(m)=237591.092 Y(m)=3089...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 92 @ CH.(m) 9...
X(m)=237...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 93 @ CH.(m) 9...
X(m)=237...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 94 @ CH.(m) 9...
X(m)=237...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 95 @ CH.(m) 9...
X(m)=237...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 96 @ CH.(m) 9...
X(m)=237...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 97 @ CH.(m) 9...
X(m)=237...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 99 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 100 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 101 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 102 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 103 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 104 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 105 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 106 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 107 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 108 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 109 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 110 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 111 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 112 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 113 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 114 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 115 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 116 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 117 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 118 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 119 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 120 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 121 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 122 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 123 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 124 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 125 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 126 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 127 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 128 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 129 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 130 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 131 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 132 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 133 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 134 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 135 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 136 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 137 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 138 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 139 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 140 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 141 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 142 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 143 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 144 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 145 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 146 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 147 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 148 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 149 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 150 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 151 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 152 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 153 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 154 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 155 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 156 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 157 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 158 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 159 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 160 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 161 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 162 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 163 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 164 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 165 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 166 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 167 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 168 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 169 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 170 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 171 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 172 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 173 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 174 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 175 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 176 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 177 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 178 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 179 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 180 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 181 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 182 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864 Ts(deg) 9.393
Ts(m) 68.427 D(deg) 91.439
Es(m) 66.822 e(%) 6.60%
21.108
Design Speed (V): 30 kmph

HIP NO. 183 @ CH.(m) 10...
X(m)=238...
R (m) 0 Ls (m) 20.000
Dc(deg) 6 S(m) 0.273
Lc(m) 66.864

LEGEND :

PLAN : EXISTING

- EXIST. ROAD
- K-I/R : KACHA RESIDENTIAL
- K-I/C : KACHA COMMERCIAL
- SP-I/R : SEMI PUCCA RESI.
- SP-I/C : SEMI PUCCA COMM.
- P-I/R : PUCCA RESIDENTIAL
- P-I/C : PUCCA COMMERCIAL
- 1000 CONTOUR

PROPOSED:

- TOE LINE / SH EDGE
- C/W EDGE
- CEN.LINE
- C/W EDGE
- SH EDGE / TOE LINE
- HOR. TANGENT POINT
- PROW — PROPOSED ROW
- BRIDGE
- BOX CULVERT
- DRAIN
- COVERED DRAIN
- RETAINING WALL
- BREAST WALL

PROFILE :

- PROP. LEVEL
- EXIST. GROUND @ RHS SHOULDER EDGE LVL
- EXIST. LEVEL AT PRO. CL
- EXIST. GROUND @ RHS SHOULDER EDGE LVL
- VER. TANGENT POINT

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Dir.
Managing Director

SUVADRA CONSULTANTS Reg. No. 111/2004-05 BHUBANESWAR

DEMWE ← BRAHMAKUND →

PROPOSED ROAD
EXISTING LEVEL AT PROP. CL
EXIST. GROUND @ RHS SHOULDER EDEG
EXIST. GROUND @ LHS SHOULDER EDEG

BOX CULVERT , (1x2mx2m) CHAINAGE=10518m
BOX CULVERT , (1x2mx2m) CHAINAGE=10617m
BOX CULVERT , (1x2mx2m) CHAINAGE=10773m
Chainage=10871.972m Level=786.099m
BOX CULVERT , (1x2mx2m) CHAINAGE=10921m
Chainage=10931.972m Level=790.266m

Level Datum(M) = 745

| | | |

LEGEND :

PLAN :

EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE

BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS BHUBANESWAR Regd. No. 111/2004-05

HILL

VALLEY

TBM 1A

TBM 2

GUARD WA

MATCHLINE 11000

MATCHLINE 11500

11100

11200

11300

11400

10600

HIP NO. 97 @ CH.(m) 11037.429			
X(m)=237940.707	Y(m)=3089320.275		
R (m)	150	Ls (m)	15.000
Dc(deg)	3.362	S(m)	0.063
Lc(m)	8.801	Ts(deg)	2.865
Ts(m)	19.430	D(deg)	9.091
Es(m)	0.536	e(%)	2.67%
Design Speed (V): 30 kmph			

CULVERT NO: 11/1
CHAINAGE(m): 11093
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

HIP NO. 98 @ CH.(m) 11189.237			
X(m)=238084.001	Y(m)=3089371.141		
R (m)	150	Ls (m)	15.000
Dc(deg)	12.597	S(m)	0.063
Lc(m)	32.978	Ts(deg)	2.865
Ts(m)	33.705	D(deg)	18.326
Es(m)	2.002	e(%)	2.67%
Design Speed (V): 30 kmph			

CULVERT NO: 11/2
CHAINAGE(m): 11253
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client :
NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer :
Glabal Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor :
Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant :
SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) Approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant :
SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant :
SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project:
DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH

Date: **SEP.-2022**

Title: **PLAN & LONGITUDINAL PROFILE**
(From Km 11+000 to Km 11+500)

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet)
Hor: 10 0 10 20
Ver: 1 0 1 2

Rev: **R4**

Drg. No: **VLE/DE-BR/HW/PNP/22**

LEGEND :

PLAN : EXISTING

- EXIST. ROAD
- K-I/R : KACHA RESIDENTIAL
- K-I/C : KACHA COMMERCIAL
- SP-I/R : SEMI PUCCA RESI.
- SP-I/C : SEMI PUCCA COMM.
- P-I/R : PUCCA RESIDENTIAL
- P-I/C : PUCCA COMMERCIAL
- 1000 CONTOUR

PROPOSED:

- TOE LINE / SH EDGE
- C/W EDGE
- CEN.LINE
- C/W EDGE
- SH EDGE / TOE LINE
- HOR. TANGENT POINT
- PROW — PROPOSED ROW
- BRIDGE
- BOX CULVERT
- DRAIN
- COVERED DRAIN
- RETAINING WALL
- BREAST WALL

PROFILE :

- PROP. LEVEL
- EXIST. GROUND @ RHS SHOULDER EDGE LVL
- EXIST. LEVEL AT PRO. CL
- EXIST. GROUND @ RHS SHOULDER EDGE LVL
- VER. TANGENT POINT

DEMWE ← → BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Dir.
Managing Director

SUVADRA CONSULTANTS BHUBANESWAR Regd. No- 11/2004-05

PROPOSED ROAD
EXISTING LEVEL AT PROP. CL
EXIST. GROUND @ RHS SHOULDER EDEG
EXIST. GROUND @ LHS SHOULDER EDEG

Chainage=11021.972m
Level=795.576m

Chainage=11081.972m
Level=795.474m

BOX CULVERT , (1x2mx2m)
CHAINAGE=11193m

BOX CULVERT , (1x2mx2m)
CHAINAGE=11253m

Chainage=11384.429m
Level=823.909m

Level Datum(M) = 785

| | | |

LEGEND :

PLAN :

EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE

BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Dir.
Managing Director

SUVARNA CONSULTANTS BHUBANESWAR Regd. No- 111/2004-05

MATCHLINE

MATCHLINE

11400 11500 11600 11700 11800 11900 12000 12600 12700 12800 12900

CULVERT NO: 11/3
CHAINAGE(m): 11657
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

CULVERT NO: 11/4
CHAINAGE(m): 11841
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

CULVERT NO: 12/5
CHAINAGE(m): 12600
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

CULVERT NO: 12/6
CHAINAGE(m): 12900
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

HIP NO: 99 @ CH.(m) 11575.971			
X(m)=2384777.233	Y(m)=3089379.499		
R (m)	61.952	S(m)	15.000
Dc(deg)	65.957	Ts(deg)	7.045
Lc(m)	55.310	e(deg)	76.044
Ls(m)	16.627	e(%)	6.563
Design Speed (V): 30 kmph			

HIP NO. 100 @ CH.(m) 11758.692			
X(m)=2385627.258	Y(m)=3089195.071		
R (m)	150	Ls (m)	15.000
Dc(deg)	7.215	Ts(deg)	0.063
Lc(m)	18.868	Te(deg)	2.865
Ts(m)	24.531	e(deg)	2.944
Es(m)	1.025	e(%)	2.678
Design Speed (V): 30 kmph			

HIP NO. 101 @ CH.(m) 11841.439			
X(m)=2385666.341	Y(m)=3089121.930		
R (m)	91.674	Ls (m)	15.000
Dc(deg)	6.502	S(m)	0.103
Lc(m)	10.327	Te(deg)	4.722
Ts(m)	20.259	D(deg)	15.947
Es(m)	0.992	e(%)	4.406
Design Speed (V): 30 kmph			

HIP NO. 102 @ CH.(m) 11912.428			
X(m)=2386816.194	Y(m)=3089070.435		
R (m)	0.000	Ts(deg)	0.000
Dc(deg)	0.000	Te(deg)	0.000
Lc(m)	0.000	e(deg)	0.000
Ts(m)	0.000	e(%)	0.000
Es(m)	0.000		
Design Speed (V): 30 kmph			

HIP NO. 103 @ CH.(m) 12004.086			
X(m)=2387078.237	Y(m)=3089039.701		
R (m)	70.000	S(m)	6.139
Dc(deg)	9.983	Ts(deg)	22.260
Lc(m)	12.198	D(deg)	5.709
Ts(m)	21.295	e(deg)	6.013
Es(m)	1.479	e(%)	6.567
Design Speed (V): 30 kmph			

HIP NO. 104 @ CH.(m) 12605.368			
X(m)=2387370.394	Y(m)=3089022.588		
R (m)	0.000	S(m)	15.000
Dc(deg)	0.000	Ts(deg)	15.000
Lc(m)	0.000	e(deg)	15.000
Ts(m)	0.000	e(%)	15.000
Es(m)	0.000		
Design Speed (V): 30 kmph			

HIP NO. 105 @ CH.(m) 12752.478			
X(m)=2387934.655	Y(m)=3088934.855		
R (m)	132.746	S(m)	20.000
Dc(deg)	46.337	Ts(deg)	0.837
Lc(m)	227.220	D(deg)	28.648
Ts(m)	258.050	e(deg)	190.042
Es(m)		e(%)	7.000
Design Speed (V): 30 kmph			

HIP NO. 106 @ CH.(m) 12900.000			
X(m)=2388019.195	Y(m)=3088879.499		
R (m)	61.952	S(m)	15.000
Dc(deg)	65.957	Ts(deg)	7.045
Lc(m)	55.310	D(deg)	76.044
Ts(m)	16.627	e(%)	6.563
Es(m)			
Design Speed (V): 30 kmph			

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : **Glabal Infra Solutions**
E-8/1A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : **Valecha Engineering Ltd**
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : **SPS Technocrats Pvt. Ltd.**
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: **DEMWE - BRAHMKUND (NH-13)**
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE** *(From Km 11+500 to Km 12+000)*
Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet)
Hor: 10 0 10 20
Ver: 1 0 1 2
Rev: R4
Drg. No: VLE/DE-BR/HW/PNP/23

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

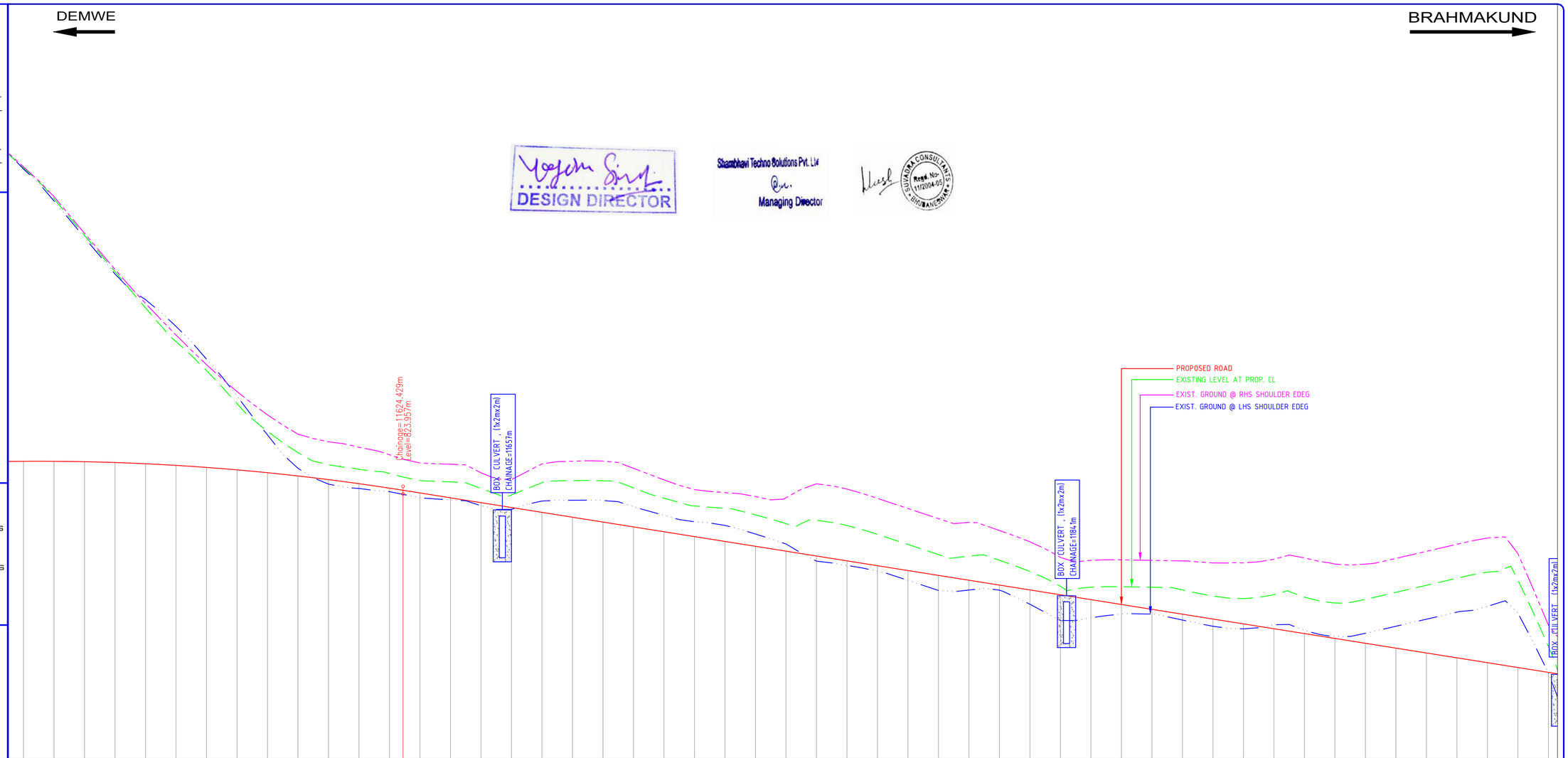
DEMWE

BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Dir.
Managing Director

SUVADRA CONSULTANTS Regd. No- 1112004-05 BHUBANESWAR



FINISHED ROAD LEVELS (M)	828.708 828.706 828.638 828.503 828.302 828.035 827.701 827.300 826.834 826.301 825.701 825.035 824.303 823.514 822.719 821.924 821.129 820.334 819.539 818.744 817.949 817.154 816.359 815.564 814.769 813.974 813.179 812.384 811.589 810.794 809.999 809.204 808.409 807.614 806.819 806.024 805.229 804.434 803.639 802.844 802.049 801.254 800.459 799.664 798.869 798.074 797.279 796.484 795.689 794.894 794.099
EXIST LEVELS AT PROP. CL (M)	876.793 871.739 865.739 859.781 853.859 848.345 843.575 838.182 833.619 830.124 828.125 827.389 826.702 825.571 825.323 824.264 823.188 825.196 825.539 825.508 824.345 822.654 821.377 820.988 819.925 818.487 819.020 818.182 816.724 815.074 813.421 813.146 812.470 810.643 808.203 808.065 808.144 808.056 807.614 806.607 806.195 806.836 806.430 805.475 806.071 807.223 808.379 809.536 810.539 809.228 798.363
EXISTING GROUND AT LHS SHOULDER EDGE LVL (M)	876.606 871.383 865.383 859.405 855.217 850.829 845.447 839.394 833.035 827.551 824.965 824.251 823.724 822.715 822.369 821.423 820.824 822.195 822.319 822.269 821.235 819.847 818.789 818.196 816.781 815.160 812.338 811.643 810.684 809.183 807.530 807.598 807.582 805.272 802.605 803.052 803.656 803.653 802.680 801.661 801.232 801.908 800.973 799.967 800.505 801.659 802.816 803.972 804.912 803.824 793.975
EXISTING GROUND AT RHS SHOULDER EDGE LVL (M)	876.980 872.095 866.098 860.170 854.591 849.414 844.554 840.149 836.316 833.159 831.900 831.000 829.771 828.432 828.228 826.817 825.707 828.285 828.720 828.747 827.557 825.655 824.074 823.575 822.931 822.729 825.019 824.151 822.634 820.964 819.311 818.695 817.358 815.505 812.946 812.465 812.548 812.460 812.372 812.044 812.052 812.652 812.868 811.857 811.851 812.786 813.943 815.099 816.123 813.571 801.851
HORIZONTAL SCHEMATIC (M)	L=15.000m, R=61.000m, L=65.957m, L=15.000m, L=15.000m, R=−150.000m, L=18.888m, L=15.000m, L=38.139m, L=15.000m, R, L=10.327m, L=15.000m, L=20.146m, L=15.000m, R=91.000m, L=31.464m, L=15.000m, L=27.678m, L=15.000m, R=−
VERTICAL SCHEMATIC (G=%) (L=m),(R=M)	R=−1505.646m L=240.000m
WIDENING SCHEMATIC (M) L R	3=4.400, 3=4.400, 3=3.500, 3.500, 4.100, 4.100, 3.500, 3.500, 4.400, 4.400, 3.500, 3.500, 4.400, 4.400, 3.500, 3.500, 4.400
SUPERELEVATION SCHEMATIC (e=%) L R	Q=6.600, Q=2.500, Q=2.700, Q=2.500, Q=4.400, Q=4.400, Q=
CHAINAGE (M)	11500 11510 11520 11530 11540 11550 11560 11570 11580 11590 11600 11610 11620 11630 11640 11650 11660 11670 11680 11690 11700 11710 11720 11730 11740 11750 11760 11770 11780 11790 11800 11810 11820 11830 11840 11850 11860 11870 11880 11890 11900 11910 11920 11930 11940 11950 11960 11970 11980 11990 12000

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : Glabal Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) Approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE** *(From Km 11+500 to Km 12+000)*

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet) Hor: 10 0 10 20 Ver: 1 0 1 2

Rev: R4

Drg. No: VLE/DE-BR/HW/PNP/23A

LEGEND :

PLAN :

EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT

PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd
Managing Director

SUVADRA CONSULTANTS Regd. No:- 11/2004-05 BHUBANESWAR

DEMWE ← → BRAHMAKUND

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : Glabal Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultants) approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: **DEMWE - BRAHMKUND (NH-13)**
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE** *(From Km 12+000 to Km 13+000)*
Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet)
Rev: R4
Drg. No: VLE/DE-BR/HW/PNP/24

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE ← → BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd
Managing Director

SUVADRA CONSULTANTS BHUBANESWAR Regd. No- 11/12004-05

BOX CULVERT , (1x2mx2m) CHAINAGE=12004m
BOX CULVERT , (1x2mx2m) CHAINAGE=12135m
BOX CULVERT , (1x2mx2m) CHAINAGE=12304m
BOX CULVERT , (1x2mx2m) CHAINAGE=12457m

PROPOSED ROAD
EXISTING LEVEL AT PROP. CL
EXIST. GROUND @ RHS SHOULDER EDEG
EXIST. GROUND @ LHS SHOULDER EDEG

Level Datum(M) = 745

| | | |

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE ← → BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd
Managing Director

SUVADRA CONSULTANTS Regd. No. 112004-05

PROPOSED ROAD
EXISTING LEVEL AT PROP. CL
EXIST. GROUND @ RHS SHOULDER EDEG
EXIST. GROUND @ LHS SHOULDER EDEG

BOX CULVERT , (1x3mx3m) CHAINAGE=12600m
Chainage=12663.384m Level=742.130m
Chainage=12713.584m Level=738.704m
Chainage=12795.266m Level=735.845m
Chainage=12855.266m Level=732.410m
BOX CULVERT , (1x3mx3m) CHAINAGE=12900m

Level Datum(M) = 710

FINISHED ROAD LEVELS (M)	754.349 753.554 752.759 751.964 751.169 750.374 749.579 748.784 747.989 747.194 746.399 745.604 744.809 744.014 743.219 742.424 741.644 740.934 740.288 739.736 739.248 738.834 738.480 738.130 737.780 737.430 737.080 736.730 736.380 736.030 735.671 735.249 734.753 734.182 733.538 732.819 732.034 731.239 730.444 729.649 728.854 728.059 727.264 726.469 725.674 724.879 724.084 723.289 722.494 721.699 720.904
EXIST LEVELS AT PROP. CL (M)	756.405 754.992 755.410 756.497 754.802 752.123 750.360 749.291 748.349 747.895 747.390 748.679 750.491 751.762 753.032 754.302 755.894 760.224 764.554 768.885 772.852 774.004 774.623 772.951 767.682 759.815 751.278 744.159 740.174 739.317 739.486 739.409 739.333 739.256 736.156 733.024 732.314 732.355 732.192 730.595 730.777 730.341 729.796 729.250 728.704 728.181 727.455 727.352 725.975 725.981 724.589
EXISTING GROUND AT LHS SHOULDER EDGE LVL (M)	762.499 760.990 760.023 760.324 760.193 760.513 757.568 755.483 753.850 752.610 751.668 750.967 751.063 753.264 754.679 755.949 757.219 758.489 760.782 765.113 769.443 773.773 777.870 778.985 778.875 774.927 766.863 756.402 746.106 738.495 735.270 735.102 735.056 734.979 734.902 734.527 731.395 728.530 728.571 728.329 727.194 726.929 727.152 726.888 726.342 725.797 725.251 724.127 723.301 723.161 722.235
EXISTING GROUND AT RHS SHOULDER EDGE LVL (M)	755.201 753.692 752.183 750.890 751.253 753.521 750.301 747.750 746.240 745.357 744.917 744.470 743.921 745.715 747.269 748.539 749.809 751.079 754.295 758.625 762.955 767.286 769.049 769.773 769.149 766.714 762.360 756.711 751.151 747.041 744.632 743.875 743.858 743.781 743.705 741.671 738.538 736.048 736.089 736.107 735.564 734.024 733.903 733.380 732.834 732.289 731.743 731.690 731.990 730.896 729.824
HORIZONTAL SCHEMATIC (M)	7m L=15.000m R=−70.000m L=39.656m L=15.000m L=19.615m R=500.000m L=30.956m L=88.463m L=20.000m R=20.000m L=46.337m L=20.000m L=72.363m L=15.000m R=−70.000m L=12.195m L=15.000m L=33.733m R=70.000m L=15.000m R=70.000m L=21.198m L=21.198m L=15.000m
VERTICAL (G=%) SCHEMATIC (L=m),(R=M)	R=1348.317m L=60.000m G=−3.500 L=81.681m R=−1348.317m L=60.000m G=−7.950 L=321.020m
WIDENING SCHEMATIC (M) L R	3.500 4.400 4.400 3.500 3.500 5.000 5.000 3.500 3.500 3.500 4.400 4.400 3.500 3.500 4.400 4.400 3.500
SUPERELEVATION SCHEMATIC (e=%) L R	e=5.700 e=2.500 e=7.000 e=2.500 e=2.500 e=5.700 e=2.500 e=5.700 e=5.700 e=5.700 e=2.500 e=7.000 e=2.500 e=5.700 e=2.500 e=2.500 e=5.700 e=5.700
CHAINAGE (M)	12500 12510 12520 12530 12540 12550 12560 12570 12580 12590 12600 12610 12620 12630 12640 12650 12660 12670 12680 12690 12700 12710 12720 12730 12740 12750 12760 12770 12780 12790 12800 12810 12820 12830 12840 12850 12860 12870 12880 12890 12900 12910 12920 12930 12940 12950 12960 12970 12980 12990 13000

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : **Glabal Infra Solutions**
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : **Valecha Engineering Ltd**
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) Approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : **SPS Technocrats Pvt. Ltd.**
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: **DEMWE - BRAHMKUND (NH-13)**
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE** *(From Km 12+500 to Km 13+000)*
Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet)
Hor: 10 0 10 20
Ver: 1 0 1 2
Rev: R4
Drg. No: VLE/DE-BR/HW/PNP/24B

DEMWE

BRAHMAKUND

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL
AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

DESIGN DIRECTOR

SUVADRA CONSULTANTS, BHUBANESWAR, Regd. No-1112/04-05

BRIDGE NO : 13/1
CHAINAGE(m): 13835
TYPE : MAJOR BRIDGE
SIZE : 1X100m
PROPOSAL : NEW

HIP NO. 118 @ CH.(m) 13755.425
X(m)=238758.099 Y(m)=3089096.477
R (m) 20 Ls (m) 20.000
Dc(deg) 37.294 S(m) 0.833
Lc(m) 13.018 Ts(deg) 28.648
Ts(m) 32.490 D(deg) 94.590
Es(m) 10.717 e(%) 7.00%
Design Speed (V): 20 kmph

13800

13700

HIP NO. 117 @ CH.(m) 13640.509
X(m)=238643.067 Y(m)=3089010.036
R (m) 70 Ls (m) 15.000
Dc(deg) 14.124 S(m) 0.134
Lc(m) 17.225 Ts(deg) 6.139
Ts(m) 23.948 D(deg) 26.402
Es(m) 2.038 e(%) 5.70%
Design Speed (V): 30 kmph

13600

HIP NO. 116 @ CH.(m) 13543.447
X(m)=238873.627 Y(m)=3088916.569
R (m) 41 Ls (m) 20.000
Dc(deg) 15.844 S(m) 0.407
Lc(m) 11.338 Ts(deg) 13.975
Ts(m) 26.623 D(deg) 43.794
Es(m) 3.626 e(%) 7.00%
Design Speed (V): 30 kmph

13500 MATCHLINE

HIP NO. 115 @ CH.(m) 13485.517
X(m)=238926.471 Y(m)=3088888.352
R (m) 60 Ls (m) 20.000
Dc(deg) 19.677 S(m) 0.333
Lc(m) 17.175 Ts(deg) 11.459
Ts(m) 29.608 D(deg) 42.596
Es(m) 4.023 e(%) 7.00%
Design Speed (V): 30 kmph

CULVERT NO: 13/3
CHAINAGE(m): 13390
TYPE : BOX CULVERT
SIZE : 1x3mx3m
PROPOSAL : NEW

13400

HIP NO. 110 @ CH.(m) 12889.108
X(m)=238718.237 Y(m)=3089044.768
R (m) 70 Ls (m) 15.000
Dc(deg) 9.983 S(m) 0.134
Lc(m) 12.196 Ts(deg) 6.139
Ts(m) 21.295 D(deg) 22.260
Es(m) 1.478 e(%) 5.70%
Design Speed (V): 30 kmph

CULVERT NO: 12/6
CHAINAGE(m): 12900
TYPE : BOX CULVERT
SIZE : 2mx3m
PROPOSAL : NEW

CULVERT NO: 13/1
CHAINAGE(m): 13060
TYPE : BOX CULVERT
SIZE : 1x3mx3m
PROPOSAL : NEW

CULVERT NO: 12/5
CHAINAGE(m): 12600
TYPE : BOX CULVERT
SIZE : 1x3mx3m
PROPOSAL : NEW

12900

13000 MATCHLINE

12500 MATCHLINE

CULVERT NO: 12/4
CHAINAGE(m): 12537
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

HIP NO. 106 @ CH.(m) 12455.373
X(m)=238765.154 Y(m)=3088892.715
R (m) 70 Ls (m) 15.000
Dc(deg) 24.519 S(m) 0.134
Lc(m) 20.069 Ts(deg) 6.139
Ts(m) 27.838 D(deg) 32.347
Es(m) 3.024 e(%) 5.70%
Design Speed (V): 30 kmph

12400

HIP NO. 113 @ CH.(m) 13167.698
X(m)=238912.212 Y(m)=3088850.833
R (m) 50 Ls (m) 20.000
Dc(deg) 17.809 S(m) 0.333
Lc(m) 15.541 Ts(deg) 11.459
Ts(m) 28.669 D(deg) 40.727
Es(m) 3.689 e(%) 7.00%
Design Speed (V): 30 kmph

13100

CULVERT NO: 13/2
CHAINAGE(m): 13225
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

13200

HIP NO. 114 @ CH.(m) 13310.407
X(m)=238876.502 Y(m)=3089031.007
R (m) 20 Ls (m) 20.000
Dc(deg) 130.798 S(m) 0.833
Lc(m) 45.657 Ts(deg) 28.648
Ts(m) -284.562 D(deg) 188.093
Es(m) -315.215 e(%) 7.00%
Design Speed (V): 20 kmph

13300

CULVERT NO: 12/1
CHAINAGE(m): 12004
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

12000

HIP NO. 107 @ CH.(m) 12525.447
X(m)=238760.489 Y(m)=3088974.765
R (m) 15 Ls (m) 15.000
Dc(deg) 32.459 S(m) 0.134
Lc(m) 17.810 Ts(deg) 6.139
Ts(m) 36.359 D(deg) 44.737
Es(m) 5.840 e(%) 5.70%
Design Speed (V): 30 kmph

CULVERT NO: 12/2
CHAINAGE(m): 12135
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

12100

HIP NO. 112 @ CH.(m) 13063.169
X(m)=238828.901 Y(m)=3089016.066
R (m) 105 Ls (m) 15.000
Dc(deg) 16.720 S(m) 0.062
Lc(m) 30.643 Ts(deg) 4.691
Ts(m) 30.706 D(deg) 54.906
Es(m) 2.622 e(%) 3.80%
Design Speed (V): 30 kmph

12300

12200

CULVERT NO: 12/3
CHAINAGE(m): 12304
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : Glabal Infra Solutions
E-4/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

E/PC Contractor : Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE – BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.446 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: PLAN & LONGITUDINAL PROFILE (From Km 13+000 to Km 13+500)
Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet) Hor: 10 0 10 20 Ver: 1 0 1 2
Rev: R4
Drg. No: VLE/DE-BR/HW/PNP/25

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE

BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd
Managing Director

SUVADRA CONSULTANTS Regd. No- 11/2004-05 BHUBANESWAR

PROPOSED ROAD
EXISTING LEVEL AT PROP. CL
EXIST. GROUND @ RHS SHOULDER EDEG
EXIST. GROUND @ LHS SHOULDER EDEG

BOX CULVERT , (1x6mx6m) CHAINAGE=13060m
BOX CULVERT , (1x2mx2m) CHAINAGE=13215m
BOX CULVERT , (1x3mx3m) CHAINAGE=13390m

Chainage=13176.286m Level=706.889m
Chainage=13236.286m Level=703.466m
Chainage=13355.230m Level=699.349m
Chainage=13415.230m Level=696.226m

Level Datum(M) = 680

| | | |

LEGEND :

PLAN :

EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE

BRAHMAKUND

12700
12800
12600
12900
13000
MATCHLINE
12500
MATCHLINE
13100
12400
13600
13700
13800
13900
14000
MATCHLINE
14100
14200
13500
MATCHLINE

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SHIVARPA CONSULTANTS
Regd. No. 1112004-05
BHUBANESWAR

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client :
NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer :
Glabal Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor :
Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant :
SUVADRA CONSULTANTS
(An ISO 9001 : 2008 Certified)
(Soil Testing Laboratory & Engineering Consultant)
Approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant :
SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant :
SPS Technocrats Pvt. Ltd.
 # 638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project:
DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE**
(From Km 13+500 to Km 14+000)

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet)
Hor: 10 0 10 20
Ver: 1 0 1 2

Rev: **R4**

Drg. No: **VLE/DE-BR/HW/PNP/26**

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE

BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS Regd. No- 11120/04-05 BHUBANESWAR

PROPOSED ROAD
EXISTING LEVEL AT PROP. CL
EXIST. GROUND @ RHS SHOULDER EDEG
EXIST. GROUND @ LHS SHOULDER EDEG

BOX CULVERT (1x6mx6m) CHAINAGE=13565m

Chainage=13719.420m Level=671.085m

Chainage=13779.420m Level=673.000m

BRIDGE NO. : 14/1
CHAINAGE : 13835
PROP SPAN : 1x100m

Chainage=13889.394m Level=673.000m

Chainage=13949.394m Level=670.602m

Level Datum(M) = 640

FINISHED ROAD LEVELS (M)	690.335 689.640 688.945 688.250 687.555 686.860 686.165 685.470 684.775 684.080 683.385 682.690 681.995 681.300 680.605 679.910 679.215 678.520 677.825 677.130 676.435 675.740 675.045 674.415 673.900 673.501 673.218 673.051 673.000 673.000 673.000 673.000 673.000 673.000 673.000 673.000 673.000 673.000 673.000 673.000 672.925 672.717 672.376 671.901 671.294 670.553 669.754 668.954 668.155 667.355 666.556
EXIST LEVELS AT PROP. CL (M)	701.824 702.261 697.197 692.500 689.781 690.071 690.567 689.330 688.938 689.509 690.494 688.542 686.569 685.248 685.503 684.263 684.527 684.776 685.536 687.662 689.258 689.063 688.868 688.673 688.106 685.601 680.608 676.857 671.630 664.937 659.901 653.472 647.044 645.108 645.331 646.951 651.010 656.234 667.433 678.631 686.826 692.480 693.997 686.691 672.142 675.332 677.053 677.635 677.981 678.738 678.275
EXISTING GROUND AT LHS SHOULDER EDGE LVL (M)	698.495 701.185 705.884 704.297 699.393 695.235 694.304 695.867 693.007 693.472 693.619 694.446 695.446 689.771 689.056 689.203 689.530 689.631 689.962 689.518 690.937 692.686 692.491 692.297 692.102 691.871 690.660 686.221 681.193 675.364 669.282 663.901 659.122 652.800 646.371 646.459 647.555 650.269 655.174 662.243 673.441 681.984 690.558 698.145 698.648 683.218 677.417 680.087 681.059 681.846 682.436
EXISTING GROUND AT RHS SHOULDER EDGE LVL (M)	693.951 696.683 701.526 696.598 691.045 686.028 683.312 683.436 684.158 683.424 683.531 685.053 686.035 683.734 681.645 680.587 681.833 680.101 680.099 680.145 681.751 683.876 685.876 685.682 685.487 685.023 683.430 680.094 677.178 674.363 668.706 662.118 655.690 649.261 643.703 643.926 644.149 645.871 650.572 658.732 669.931 681.033 685.344 687.456 687.506 678.657 668.402 671.362 673.096 673.442 674.186
HORIZONTAL SCHEMATIC (M)	L=20.000m; L; L=20.000m; R=41.000m; L=11.338m; L=20.000m; L=47.766m; L=15.000m; L=17.256m; R=−70.000m; L=15.000m; L=64.779m; R=20.000m; L=20.000m; L=13.018m; L=20.000m; L=108.525m; R=30.000m; L=30.000m; L=13.108m; L=30.000m
VERTICAL (G=%) SCHEMATIC (L=m),(R=m)	G=−6.950; L=304.190m; R=863.309m; L=60.000m; G=−0.000; L=109.975m; R=−750.469m; L=60.000m
WIDENING SCHEMATIC (M) L R	3.500 3.500 4.700 4.700 3.500 3.500 4.400 4.400 3.500 3.500 5.000 5.000 3.500 3.500 5.000 5.000 3.500
SUPERELEVATION SCHEMATIC (e=%) L R	e=7.000 e=2.500 e=5.700 e=2.500 e=7.000 e=2.500 e=7.000 e=7.000 e=2.500 e=5.700 e=2.500 e=7.000 e=7.000
CHAINAGE (M)	13500 13510 13520 13530 13540 13550 13560 13570 13580 13590 13600 13610 13620 13630 13640 13650 13660 13670 13680 13690 13700 13710 13720 13730 13740 13750 13760 13770 13780 13790 13800 13810 13820 13830 13840 13850 13860 13870 13880 13890 13900 13910 13920 13930 13940 13950 13960 13970 13980 13990 14000

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : Glabal Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) Approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE** *(From Km 13+500 to Km 14+000)*

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet)

Rev: R4

Drg. No: VLE/DE-BR/HW/PNP/26A

LEGEND :

PLAN :

EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE

BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd
Managing Director

SUVADRA CONSULTANTS BHUBANESWAR Regd. No- 117/2004-05

CULVERT NO. 14/0
CHAINAGE(m): 14180
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

CULVERT NO. 14/2
CHAINAGE(m): 14340
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

CULVERT NO. 14/4
CHAINAGE(m): 14467
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

MATCHLINE 14000

MATCHLINE 14500

14100

14200

14300

14400

15600

HIP NO. 120 @ CH.(m) 14102.408			
X(m)=239032.98	Y(m)=3089091.275		
R (m)	50	Ls (m)	20.000
Dc(deg)	18.982	S(m)	0.333
Lc(m)	16.565	Ts(deg)	11.459
Ts(m)	29.258	D(deg)	41.900
Es(m)	3.896	e(%)	7.00%
Design Speed (V): 30 kmph			

HIP NO. 121 @ CH.(m) 14180.796			
X(m)=239116.492	Y(m)=3089080.529		
R (m)	40	Ls (m)	25.000
Dc(deg)	35.523	S(m)	0.635
Lc(m)	25.419	Ts(deg)	17.468
Ts(m)	16.041	D(deg)	70.458
Es(m)	8.864	e(%)	7.00%
Design Speed (V): 30 kmph			

HIP NO. 122 @ CH.(m) 14251.758			
X(m)=239141.708	Y(m)=3089017.424		
R (m)	40	Ls (m)	25.000
Dc(deg)	22.470	S(m)	0.635
Lc(m)	16.079	Ts(deg)	17.468
Ts(m)	35.259	D(deg)	57.406
Es(m)	6.468	e(%)	7.00%
Design Speed (V): 30 kmph			

HIP NO. 123 @ CH.(m) 14331.401			
X(m)=239222.712	Y(m)=3088997.882		
R (m)	70	Ls (m)	30.000
Dc(deg)	31.831	S(m)	0.134
Lc(m)	38.889	Ts(deg)	6.139
Ts(m)	35.911	D(deg)	44.109
Es(m)	5.671	e(%)	5.70%
Design Speed (V): 30 kmph			

HIP NO. 124 @ CH.(m) 14467.055			
X(m)=239297.988	Y(m)=3088879.723		
R (m)	33	Ls (m)	30.000
Dc(deg)	11.273	S(m)	1.136
Lc(m)	6.493	Ts(deg)	26.044
Ts(m)	35.964	D(deg)	63.360
Es(m)	7.114	e(%)	7.00%
Design Speed (V): 30 kmph			

HIP NO. 116 @ CH.(m) 13543.447			
X(m)=238873.627	Y(m)=3089		
R (m)			
Dc(deg)			
Lc(m)			
Ts(m)			
Es(m)			
Design Speed (V): 30 kmph			

HIP NO. 117 @ CH.(m) 13640.559			
X(m)=238813.067	Y(m)=3089010.036		
R (m)	70	Ls (m)	40.000
Dc(deg)	14.124	S(m)	0.134
Lc(m)	17.258	Ts(deg)	6.139
Ts(m)	23.944	D(deg)	26.402
Es(m)	2.038	e(%)	5.70%
Design Speed (V): 30 kmph			

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client :
NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer :
Global Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor :
Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant :
SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant :
SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant :
SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project:
DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE** *(From Km 14+000 to Km 14+500)*

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet)
Hor: 10 0 10 20
Ver: 1 0 1 2

Rev: **R4**

Drg. No: **VLE/DE-BR/HW/PNP/27**

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE

BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd
Managing Director

SUVADRA CONSULTANTS BHUBANESWAR Regd. No- 11720/04-05

PROPOSED ROAD
EXISTING LEVEL AT PROP. CL
EXIST. GROUND @ RHS SHOULDER EDEG
EXIST. GROUND @ LHS SHOULDER EDEG

BOX CULVERT 1x2mx2m CHAINAGE=14.182m
BOX CULVERT 1x2mx2m CHAINAGE=14.340m

Level Datum(M) = 620

FINISHED ROAD LEVELS (M)	666.556 665.756 664.957 664.157 663.358 662.558 661.759 660.959 660.160 659.360 658.561 657.761 656.962 656.162 655.363 654.563 653.764 652.964 652.165 651.365 650.566 649.766 648.967 648.167 647.368 646.568 645.769 644.969 644.170 643.370 642.571 641.771 640.972 640.172 639.373 638.573 637.774 636.974 636.175 635.375 634.576 633.776 632.977 632.177 631.378 630.578 629.779 628.979 628.180 627.380 626.581
EXIST LEVELS AT PROP. CL (M)	678.275 680.015 679.327 674.501 675.058 673.787 668.134 666.699 666.196 666.531 669.312 664.884 662.630 661.745 661.986 666.145 669.184 668.778 665.924 670.752 666.496 662.975 660.988 660.442 660.268 659.763 658.436 657.846 655.964 652.789 653.393 651.223 650.735 649.740 648.582 648.340 645.008 647.465 646.826 645.474 644.026 643.197 642.702 643.283 644.687 646.945 650.663 655.600 661.623 669.386 678.020
EXISTING GROUND AT LHS SHOULDER EDGE LVL (M)	682.436 682.383 683.702 682.617 681.532 678.305 678.855 674.124 672.684 671.304 671.480 673.559 672.774 669.877 668.145 666.940 667.432 673.210 674.835 672.592 676.750 681.231 671.520 667.764 666.617 665.042 663.703 664.083 663.169 661.707 659.706 657.271 657.663 655.828 654.670 652.392 651.681 651.462 650.217 651.903 650.520 649.457 647.522 645.516 645.306 646.644 648.361 651.448 655.192 659.480 665.036
EXISTING GROUND AT RHS SHOULDER EDGE LVL (M)	674.186 673.436 674.415 675.749 676.298 671.134 671.666 668.982 663.415 662.613 662.877 662.700 664.133 657.594 656.671 657.687 657.889 660.973 662.313 661.346 657.017 658.367 657.451 656.510 654.268 655.290 657.005 655.386 653.232 653.346 650.682 649.420 646.928 646.271 645.388 645.349 644.514 645.348 643.037 643.576 642.811 641.835 640.731 639.986 640.451 640.971 642.485 645.542 650.238 656.404 663.665
HORIZONTAL SCHEMATIC (M)	L=110.558m; L=20.000m; L=16.566m R=−50.000m; L=20.000m; L=12.396m; L=25.000m; R=41.000m L=25.418m; L=25.000m; L=25.000m; L=16.079m R=−41.000m; L=25.000m; L=12.160m; R=70.000m L=15.000m; L=38.890m; L=15.000m; L=67.961m; L=30.000m; L R; L=30.000m
VERTICAL SCHEMATIC (G=%) (L=m),(R=M)	G=−7.995 L=838.687m
WIDENING SCHEMATIC (M) L R	3.500 4.700 4.700 3.500 3.500 4.700 4.700 3.500 3.500 4.700 4.700 3.500 3.500 4.400 4.400 3.500 3.500 5.000 5.000 3.500
SUPERELEVATION SCHEMATIC (e=%) L R	e=2.500 e=7.000 e=7.000 e=7.000 e=7.000 e=5.700 e=5.700 e=2.500 e=7.000 e=7.000 e=7.000 e=7.000 e=7.000 e=7.000 e=7.000 e=7.000
CHAINAGE (M)	14000 14010 14020 14030 14040 14050 14060 14070 14080 14090 14100 14110 14120 14130 14140 14150 14160 14170 14180 14190 14200 14210 14220 14230 14240 14250 14260 14270 14280 14290 14300 14310 14320 14330 14340 14350 14360 14370 14380 14390 14400 14410 14420 14430 14440 14450 14460 14470 14480 14490 14500

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : **Glabal Infra Solutions**
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : **Valecha Engineering Ltd**
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) Approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : **SPS Technocrats Pvt. Ltd.**
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project:
DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE** *(From Km 14+000 to Km 14+500)*

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet)

Rev: R4

Drg. No: VLE/DE-BR/HW/PNP/27A

LEGEND :

PLAN :

EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL
AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE

BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd
Managing Director

SUVADRA CONSULTANTS Regd. No. 111/2004-05 BHUBANESWAR

HIP NO. 130 @ CH.(m) 14937.011			
X(m)=239410.729	Y(m)=3089221.478		
R (m)	20	Ls (m)	20.000
Dc(deg)	58.407	S(m)	0.833
Lc(m)	20.388	Ts(deg)	28.648
Ts(m)	43.066	D(deg)	115.703
Es(m)	19.152	e(%)	7.00%
Design Speed (V): 20 kmph			

HIP NO. 124 @ CH.(m) 11446.795			
X(m)=239287.588	Y(m)=3088879.723		
R (m)	30	Ls (m)	30.000
Dc(deg)	11.273	S(m)	1.136
Lc(m)	6.493	Ts(deg)	26.044
Ts(m)	35.964	D(deg)	63.360
Es(m)	7.114	e(%)	7.00%
Design Speed (V): 30 kmph			

HIP NO. 125 @ CH.(m) 12362.774			
X(m)=239227.742	Y(m)=3088960.882		
R (m)	70	Ls (m)	15.000
Dc(deg)	31.883	S(m)	0.134
Lc(m)	38.889	Ts(deg)	6.139
Ts(m)	55.911	e(%)	5.70%
Es(m)	35.911		
Design Speed (V): 40 kmph			

CULVERT NO. 14/2
CHAINAGE(m): 14340
TYPE : BOX CULVERT
SIZE : 1x2m x2m
PROPOSAL : NEW

HIP NO. 126 @ CH.(m) 14796.247			
X(m)=239486.843	Y(m)=3089088.871		
R (m)	50	Ls (m)	20.000
Dc(deg)	6.121	S(m)	0.333
Lc(m)	5.342	Ts(deg)	11.459
Ts(m)	23.822	D(deg)	29.040
Es(m)	1.994	e(%)	7.00%
Design Speed (V): 30 kmph			

BRIDGE NO :14/1
CHAINAGE(m): 14886
TYPE : MINOR BRIDGE
SIZE : 1X10m
PROPOSAL : NEW

HIP NO. 128 @ CH.(m) 14486.944			
X(m)=239374.429	Y(m)=3089128.211		
R (m)	70	Ls (m)	15.000
Dc(deg)	4.603	S(m)	0.214
Lc(m)	5.622	Ts(deg)	6.139
Ts(m)	17.383	D(deg)	16.858
Es(m)	0.803	e(%)	5.70%
Design Speed (V): 30 kmph			

CULVERT NO. 14/5
CHAINAGE(m): 14741
TYPE : BOX CULVERT
SIZE : 1x3mx3m
PROPOSAL : NEW

CULVERT NO. 14/4
CHAINAGE(m): 14599
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

HIP NO. 126 @ CH.(m) 14582.017			
X(m)=239415.948	Y(m)=3088861.522		
R (m)	40	Ls (m)	25.000
Dc(deg)	13.643	S(m)	0.625
Lc(m)	9.763	Ts(deg)	17.468
Ts(m)	31.252	D(deg)	48.580
Es(m)	4.658	e(%)	7.00%
Design Speed (V): 30 kmph			

HIP NO. 127 @ CH.(m) 14738.897			
X(m)=239475.269	Y(m)=3089032.366		
R (m)	10	Ls (m)	15.000
Dc(deg)	1.143	S(m)	0.093
Lc(m)	2.015	Ts(deg)	4.256
Ts(m)	16.034	D(deg)	9.652
Es(m)	0.453	e(%)	4.00%
Design Speed (V): 30 kmph			

HIP NO. 126 @ CH.(m) 14678.195			
X(m)=239473.223	Y(m)=3088971.14		
R (m)	50	Ls (m)	20.000
Dc(deg)	10.900	S(m)	0.333
Lc(m)	9.512	Ts(deg)	11.459
Ts(m)	25.288	D(deg)	33.818
Es(m)	2.608	e(%)	7.00%
Design Speed (V): 30 kmph			

HIP NO. 131 @ CH.(m) 15178.590			
X(m)=239661.756	Y(m)=3089430.958		
R (m)	15	Ls (m)	15.000
Dc(deg)	19.215	S(m)	0.643
Lc(m)	7.345	Ts(deg)	7.344
Ts(m)	24.859	D(deg)	19.215
Es(m)	1.047	e(%)	4.00%
Design Speed (V): 40 kmph			

HIP NO. 132 @ CH.(m) 15227.954			
X(m)=239674.438	Y(m)=3089478.219		
R (m)	70	Ls (m)	15.000
Dc(deg)	12.605	S(m)	0.075
Lc(m)	15.834	Ts(deg)	5.428
Ts(m)	19.523	D(deg)	12.605
Es(m)	3.120	e(%)	5.70%
Design Speed (V): 40 kmph			

CULVERT NO. 15/4
CHAINAGE(m): 15048
TYPE : BOX CULVERT
SIZE : 1x2m x2m
PROPOSAL : NEW

MATCHLINE 14500

MATCHLINE 14900

MATCHLINE 15000

MATCHLINE 14600

MATCHLINE 14700

MATCHLINE 14800

MATCHLINE 15100

MATCHLINE 15200

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : Global Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified)
(Soil Testing Laboratory & Engineering Consultant) Approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: PLAN & LONGITUDINAL PROFILE (From Km 14+500 to Km 15+000)

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet) Hor: 10 0 10 20 Ver: 1 0 1 2

Revi: R4

Drg. No: VLE/DE-BR/HW/PNP/28

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE

BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS Regd. No: 111/2004-05 BHUBANESWAR

BOX CULVERT , (1x2mx2m) CHAINAGE=14514m

BOX CULVERT , (1x2mx2m) CHAINAGE=14599m

BOX CULVERT , (1x3mx3m) CHAINAGE=14744m

PROPOSED ROAD
EXISTING LEVEL AT PROP. CL
EXIST. GROUND @ RHS SHOULDER EDEG
EXIST. GROUND @ LHS SHOULDER EDEG

Chainage=14788.081m
Level=603.446m

Chainage=14848.081m
Level=601.150m

BRIDGE NO. : 15/1
CHAINAGE : 14886
PROP SPAN : 1x40m

Chainage=14991.959m
Level=601.150m

Level Datum(M) = 570

FINISHED ROAD LEVELS (M)	626.581 625.781 624.982 624.182 623.383 622.583 621.784 620.984 620.185 619.385 618.586 617.786 616.987 616.187 615.388 614.588 613.789 612.989 612.190 611.390 610.591 609.791 608.992 608.192 607.393 606.593 605.794 604.994 604.195 603.398 602.690 602.116 601.675 601.368 601.194 601.150 601.150 601.150 601.150 601.150 601.150 601.150 601.150 601.150 601.150 601.150 601.150 601.150 601.150 601.150 601.150 601.150 601.188
EXIST LEVELS AT PROP. CL (M)	678.020 686.648 686.786 674.942 661.828 648.196 637.430 626.665 618.938 611.592 610.335 610.527 614.027 624.129 633.288 629.339 623.294 618.462 615.401 614.911 615.001 613.407 611.814 611.886 612.169 612.920 615.611 618.043 618.425 619.239 618.709 618.787 617.795 612.241 607.828 603.270 596.339 587.137 579.366 574.066 578.811 597.889 608.840 619.983 630.382 633.744 630.061 623.394 614.519 609.950 605.351
EXISTING GROUND AT LHS SHOULDER EDGE LVL (M)	665.036 672.525 681.072 690.427 682.449 668.618 654.786 643.430 632.737 623.037 615.089 612.900 611.714 612.682 621.963 631.271 634.190 629.881 624.657 621.562 619.324 617.810 617.149 617.574 617.999 618.247 619.208 619.702 619.985 621.521 622.661 623.953 624.265 624.601 621.957 616.814 612.661 604.986 594.977 587.890 579.455 575.646 587.096 608.805 615.964 630.609 631.285 622.724 615.313 610.685
EXISTING GROUND AT RHS SHOULDER EDGE LVL (M)	663.665 672.800 681.509 690.018 681.846 670.124 658.281 644.781 633.645 623.111 615.092 609.175 609.124 608.504 614.493 624.343 629.693 624.201 618.074 613.562 613.005 613.177 612.247 610.655 609.044 607.244 607.615 610.587 613.336 614.841 615.450 615.416 613.945 614.467 610.738 605.171 601.261 595.835 588.919 581.699 576.495 572.290 581.899 600.270 610.113 616.771 621.807 614.866 609.156 604.588 600.017
HORIZONTAL SCHEMATIC (M)	L=51.834m; L=25.000m; L=9.763m; R; L=25.000m; L=41.541m; L=20.000m; L=9.511m; R; L=20.000m; L=19.939m; L=15.000m; R; L; L=15.000m; L=18.672m; L=20.000m; L; R; L=20.000m; L=15.000m; L; R; L=15.000m; L=52.012m; L=20.000m; R=20.000m; L=20.388m; L=20.000m; L=25.946m; L=15.0
VERTICAL (G=%) SCHEMATIC (L=m),(R=M)	G=-7.995; L=838.687m; R=750.469m; L=60.000m; G=0.000; L=143.878m; G=0.000; L=143.878m
WIDENING SCHEMATIC (M) L R	3.500 3.500 4.700 4.700 3.500 3.500 4.700 4.700 3.500 3.500 4.100 4.100 3.500 3.500 4.700 4.700 4.400 4.400 3.500 3.500 5.000 5.000 3.500 3.500
SUPERELEVATION SCHEMATIC (e=%) L R	e=2.500 e=7.000 e=2.500 e=7.000 e=4.000 e=7.000 e=2.500 e=5.700 e=2.500 e=2.500 e=7.000 e=2.500
CHAINAGE (M)	14500 14510 14520 14530 14540 14550 14560 14570 14580 14590 14600 14610 14620 14630 14640 14650 14660 14670 14680 14690 14700 14710 14720 14730 14740 14750 14760 14770 14780 14790 14800 14810 14820 14830 14840 14850 14860 14870 14880 14890 14900 14910 14920 14930 14940 14950 14960 14970 14980 14990 15000

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : **Glabal Infra Solutions**
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : **Valecha Engineering Ltd**
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) Approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : **SPS Technocrats Pvt. Ltd.**
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: **DEMWE - BRAHMKUND (NH-13)**
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE** *(From Km 14+500 to Km 15+000)*

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet) Hor: 10 0 10 20 Ver: 1 0 1 2

Rev: **R4**

Drg. No: **VLE/DE-BR/HW/PNP/ 28A**

LEGEND :

PLAN :

EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE

BRAHMAKUND

CONCRETE ROAD END

HILL

VALLEY

GUARD WALL

H T LINE

HT TOWER

MATCHLINE

HIP NO. 133 @ CH.(m) 15257.125
X(m)=2397748.374 Y(m)=3089209.913
R (m) 50 Ls (m) 20.000
Dc(deg) 59.393 Ts(m) 0.333
Lc(m) 51.830 Ts(deg) 13.459
Ts(m) 33.981 D(deg) 82.99
Es(m) 16.850 e(%) 66.7 7.00%
Design Speed (V): 30 kmph

HIP NO. 132 @ CH.(m) 15178.590
X(m)=2396671.756 Y(m)=3089208.598
R (m) 150 Ls (m) 15.000
Dc(deg) 7.341 Ts(m) 0.062
Lc(m) 19.220 Ts(deg) 2.865
Ts(m) 24.691 D(deg) 13.07
Es(m) 1.044 e(%) 4.70%
Design Speed (V): 40 kmph

HIP NO. 131 @ CH.(m) 14821.364
X(m)=2396607.638 Y(m)=3089236.219
R (m) 125 Ls (m) 15.000
Dc(deg) 12.653 Ts(m) 0.075
Lc(m) 6580.27 604 Ts(deg) 3.143
Ts(m) 28.023 D(deg) 19.552
Es(m) 1.971 e(%) 8.70%
Design Speed (V): 40 kmph

HIP NO. 134 @ CH.(m) 15564.465
X(m)=2397666.6 Y(m)=3089103.028
R (m) 50 Ls (m) 20.000
Dc(deg) 16.247 Ts(m) 0.333
Lc(m) 6545.178 Ts(deg) 3.459
Ts(m) 27.890 D(deg) 114.59
Es(m) 1.421 e(%) 39.1 7.00%
Design Speed (V): 30 kmph

HIP NO. 136 @ CH.(m) 15565.393
X(m)=2398373.329 Y(m)=3088978.895
R (m) 30 Ls (m) 1.250
Dc(deg) 23.071 Ts(m) 28.648
Lc(m) 12.080 Ts(deg) 80.367
Ts(m) 41.269 D(deg) 7.00%
Es(m) 6.710 e(%) 10.904
Design Speed (V): 30 kmph

HIP NO. 135 @ CH.(m) 15424.327
X(m)=2397756.866 Y(m)=3089034.648
R (m) 30 Ls (m) 20.000
Dc(deg) 62.531 Ts(m) 17.250
Lc(m) 41.153 Ts(deg) 28.648
Ts(m) 51.097 D(deg) 88.428
Es(m) 17.830 e(%) 7.00%
Design Speed (V): 30 kmph

CULVERT NO: 15/2
CHAINAGE(m): 15222
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

CULVERT NO: 15/3
CHAINAGE(m): 15356
TYPE : BOX CULVERT
SIZE : 1x3mx3m
PROPOSAL : NEW

CULVERT NO: 15/1
CHAINAGE(m): 15048
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

BRIDGE NO : 14/1
CHAINAGE(m): 14886
TYPE : MINOR BRIDGE
SIZE : 1X40M
PROPOSAL : NEW

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS Regd. No- 11/2004-05 BHUBANESWAR

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : Glabal Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: PLAN & LONGITUDINAL PROFILE (From Km 15+000 to Km 15+500)
Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet) Hor: 10 0 10 20 Ver: 1 0 1 2
Rev: R4
Drg. No: VLE/DE-BR/HW/PNP/29

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE ← → BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS Regd. No-1/12004-05 BHUBANESWAR

PROPOSED ROAD
EXISTING LEVEL AT PROP. CL
EXIST. GROUND @ RHS SHOULDER EDEG
EXIST. GROUND @ LHS SHOULDER EDEG

BOX CULVERT, (1x2mx2m) CHAINAGE=15048m
Chainage=15051.359m
Level=603.247m
BOX CULVERT, (1x2mx2m) CHAINAGE=15222m
BOX CULVERT, (1x3mx3m) CHAINAGE=15356m

Level Datum(M) = 590

FINISHED ROAD LEVELS (M)	601.188 601.340 601.608 601.993 602.494 603.112 603.809 604.508 605.207 605.906 606.605 607.304 608.003 608.702 609.401 610.100 610.799 611.498 612.197 612.896 613.595 614.294 614.993 615.692 616.391 617.090 617.789 618.488 619.187 619.886 620.585 621.284 621.983 622.682 623.381 624.080 624.779 625.478 626.177 626.876 627.575 628.274 628.973 629.672 630.371 631.070 631.769 632.468 633.167 633.866 634.565
EXIST LEVELS AT PROP. CL (M)	605.351 603.710 601.853 603.918 602.209 605.022 609.115 612.128 615.053 616.849 616.123 612.561 608.999 608.191 608.894 609.561 610.237 611.064 612.228 615.598 617.764 621.722 620.163 621.805 623.059 625.957 628.290 626.886 623.199 623.037 625.395 628.844 629.951 629.366 628.322 624.543 623.717 629.300 634.445 637.645 637.868 637.505 630.712 627.404 628.166 632.292 635.018 635.673 637.200 638.548 639.523
EXISTING GROUND AT LHS SHOULDER EDGE LVL (M)	610.685 609.129 610.938 612.220 608.699 606.632 610.725 614.111 616.730 618.186 618.759 615.197 612.053 611.007 611.674 612.341 613.015 613.821 616.100 619.311 620.919 624.809 625.899 628.342 629.584 633.494 633.917 634.106 632.521 629.191 629.505 632.283 633.803 633.426 632.537 628.546 626.905 633.087 638.403 644.461 644.662 641.234 636.313 633.607 634.256 637.509 638.697 639.528 641.590 645.447 649.151
EXISTING GROUND AT RHS SHOULDER EDGE LVL (M)	600.017 598.419 596.113 598.735 601.311 603.791 607.504 610.451 613.377 615.539 613.487 610.006 607.700 606.789 605.884 606.565 607.292 608.203 609.506 611.351 614.673 616.987 614.587 613.889 613.612 615.704 622.489 619.584 615.953 616.531 622.623 626.529 626.433 625.527 624.175 620.176 620.521 625.604 630.648 630.830 632.659 634.807 627.619 622.367 622.076 626.612 630.865 631.818 633.116 631.749 632.621
HORIZONTAL SCHEMATIC (M)	L=15.000m · R=125.000m L=27.604m · L=15.000m · L=103.225m · L=15.000m · R=−150.000m L=19.220m · L · L=20.000m · R=50.000m L=51.830m · L=20.000m · L=24.336m · L=20.000m · R=50.000m L=14.179m · L=20.000m · L · L=30.000m · R=−30.000m L=21.537m · L=30.000m · L=64.257m
VERTICAL SCHEMATIC (G=%) (L=m),(R=M)	R=858.369m L=60.000m · G=6.990 L=904.936m
WIDENING SCHEMATIC (M) L R	4.100 4.100 3.500 · 3.500 4.100 4.100 3.500 · 3.500 4.700 4.700 3.500 · 3.500 4.700 4.700 3.500 3.500 3.500 · 5.000 5.000 3.500
SUPERELEVATION SCHEMATIC (e=%) L R	e=5.700 e=5.700 · e=2.500 e=2.500 · e=4.700 e=4.700 · e=7.000 e=7.000 · e=2.500 e=2.500 · e=7.000 e=7.000 · e=2.500 e=2.500
CHAINAGE (M)	15000 15010 15020 15030 15040 15050 15060 15070 15080 15090 15100 15110 15120 15130 15140 15150 15160 15170 15180 15190 15200 15210 15220 15230 15240 15250 15260 15270 15280 15290 15300 15310 15320 15330 15340 15350 15360 15370 15380 15390 15400 15410 15420 15430 15440 15450 15460 15470 15480 15490 15500

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : **Glabal Infra Solutions**
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

E/PC Contractor : **Valecha Engineering Ltd**
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : **SPS Technocrats Pvt. Ltd.**
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: **DEMWE - BRAHMKUND (NH-13)**
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE** *(From Km 15+000 to Km 15+500)*
Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet) Hor: 10 0 10 20 Ver: 1 0 1 2
Rev: **R4**
Drg. No: **VLE/DE-BR/HW/PNP/29A**

LEGEND :

PLAN :

EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE

BRAHMAKUND

HT TOWER
HILL
VALLEY
GUARD WALL
H T LINE
TBM @ CH
MATCHLINE
15500
15600
15700
15800
15900

BRIDGE NO : 15/1
CHAINAGE(m): 15568
TYPE : MINOR BRIDGE
SIZE : 2X10m
PROPOSAL : NEW

CULVERT NO: 15/4
CHAINAGE(m): 15622
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

CULVERT NO: 15/5
CHAINAGE(m): 15881
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : NEW

BRIDGE NO : 16/1
CHAINAGE(m): 16020
TYPE : MINOR BRIDGE
SIZE : 1X4m
PROPOSAL : NEW

HIP NO. 136 @ CH.(m) 15545.323	
X(m)=239871.328	Y(m)=3089078.885
R (m)	30.000
Dc(deg)	1.250
Lc(m)	28.648
Ts(m)	85.369
Es(m)	7.005%
Design Speed (V): 30 kmph	

HIP NO. 137 @ CH.(m) 15651.512	
X(m)=239857.898	Y(m)=3089001.132
R (m)	20.000
Dc(deg)	0.331
Lc(m)	52.742
Ts(m)	7.005%
Es(m)	670.
Design Speed (V): 30 kmph	

HIP NO. 138 @ CH.(m) 15743.344	
X(m)=239743.876	Y(m)=3088845.498
R (m)	30.000
Dc(deg)	1.250
Lc(m)	58.163
Ts(m)	28.648
Es(m)	115.459
Design Speed (V): 30 kmph	7.00%

HIP NO. 139 @ CH.(m) 15814.564	
X(m)=239814.565	Y(m)=3088789.209
R (m)	15.000
Dc(deg)	0.065
Lc(m)	2.865
Ts(m)	7.194
Es(m)	4.70%
Design Speed (V): 40 kmph	

HIP NO. 140 @ CH.(m) 15879.853	
X(m)=239870.447	Y(m)=3088755.173
R (m)	15.000
Dc(deg)	0.117
Lc(m)	5.371
Ts(m)	18.780
Es(m)	5.00%
Design Speed (V): 30 kmph	

HIP NO. 141 @ CH.(m) 15972.884	
X(m)=239930.703	Y(m)=3088683.055
R (m)	20.000
Dc(deg)	0.556
Lc(m)	19.099
Ts(m)	44.433
Es(m)	5.90%
Design Speed (V): 20 kmph	

HIP NO. 142 @ CH.(m) 16021.85	
X(m)=239922.778	Y(m)=3088583
R (m)	15.
Dc(deg)	0.
Lc(m)	2.
Ts(m)	11.
Es(m)	2.
Design Speed (V): 30 kmph	

HIP NO. 136 @ CH.(m) 15424.327	
6.988	Y(m)=3089034.648
30	Ls (m) 30.000
1.133	S(m) 1.250
1.537	Ts(deg) 28.648
.097	D(deg) 98.428
.639	e(%) 7.00%
V): 30 kmph	

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS Regd. No. 11/2004-05 BHUBANESWAR

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client :
NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer :
Glabal Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

E/PC Contractor :
Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant :
SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified)
(Soil Testing Laboratory & Engineering Consultant) approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant :
SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant :
SPS Technocrats Pvt. Ltd.
 # 638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project:
DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE**
(From Km 15+500 to Km 16+000)

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet)
Hor: 10 0 10 20
Ver: 1 0 1 2

Rev: **R4**

Drg. No: **VLE/DE-BR/HW/PNP/30**

LEGEND :

PLAN : EXISTING

- EXIST. ROAD
- K-I/R : KACHA RESIDENTIAL
- K-I/C : KACHA COMMERCIAL
- SP-I/R : SEMI PUCCA RESI.
- SP-I/C : SEMI PUCCA COMM.
- P-I/R : PUCCA RESIDENTIAL
- P-I/C : PUCCA COMMERCIAL
- 1000 CONTOUR

PROPOSED:

- TOE LINE / SH EDGE
- C/W EDGE
- CEN.LINE
- C/W EDGE
- SH EDGE / TOE LINE
- HOR. TANGENT POINT
- PROW — PROPOSED ROW
- BRIDGE
- BOX CULVERT
- DRAIN
- COVERED DRAIN
- RETAINING WALL
- BREAST WALL

PROFILE :

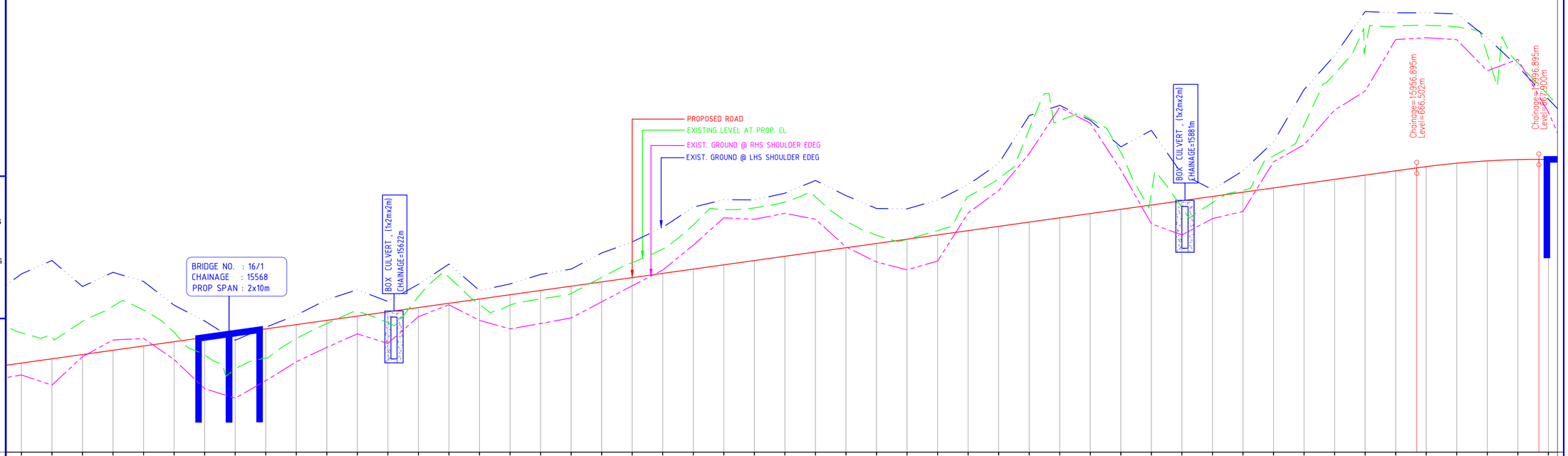
- PROP. LEVEL
- EXIST. GROUND @ RHS SHOULDER EDGE LVL
- EXIST. LEVEL AT PRO. CL
- EXIST. GROUND @ RHS SHOULDER EDGE LVL
- VER. TANGENT POINT

DEMWE ← → BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd
Managing Director

SUVADRA CONSULTANTS Regd. No. 112/2004-05 BHUBANESWAR



Level Datum(M) = 620

FINISHED ROAD LEVELS (M)	634.565 635.264 635.963 636.662 637.361 638.060 638.759 639.458 640.157 640.856 641.555 642.254 642.953 643.652 644.351 645.050 645.749 646.448 647.147 647.846 648.545 649.244 649.943 650.642 651.341 652.040 652.739 653.438 654.137 654.836 655.535 656.234 656.933 657.632 658.331 659.030 659.729 660.428 661.127 661.826 662.525 663.224 663.923 664.622 665.321 666.020 666.711 667.268 667.651 667.858 667.900
EXIST LEVELS AT PROP. CL (M)	639.523 638.891 641.371 643.879 643.254 639.594 635.914 633.567 635.414 638.589 641.046 643.045 641.189 645.452 648.618 644.187 644.036 645.057 645.946 648.576 650.995 653.220 657.149 659.686 659.948 660.926 661.769 657.772 655.483 654.815 656.246 661.831 664.771 672.811 674.241 674.520 669.049 662.379 660.035 660.822 662.841 668.452 673.487 681.923 686.024 689.637 689.940 689.587 685.083 683.686 678.389
EXISTING GROUND AT LHS SHOULDER EDGE LVL (M)	649.151 651.345 647.097 649.412 647.917 644.033 641.455 638.304 640.433 642.405 644.951 646.558 644.648 647.458 650.760 646.434 647.512 649.075 649.944 652.574 654.392 656.771 660.085 661.292 661.267 662.354 664.442 661.969 659.859 659.802 661.231 663.752 667.213 675.055 676.737 674.286 669.950 672.641 665.521 662.941 666.022 670.767 679.308 684.877 692.080 691.870 691.885 691.690 687.776 683.104 677.762
EXISTING GROUND AT RHS SHOULDER EDGE LVL (M)	632.621 630.961 635.614 638.347 638.592 635.155 630.373 628.830 631.678 634.774 637.140 639.342 637.784 642.168 644.095 641.553 640.145 641.040 641.947 644.578 647.213 649.786 653.851 658.325 658.106 659.069 658.104 653.574 651.107 649.829 651.260 659.127 662.791 668.840 676.406 673.814 666.171 657.352 655.533 658.204 659.376 667.498 670.285 675.951 679.069 687.501 687.796 687.484 682.390 684.269 675.609
HORIZONTAL SCHEMATIC (M)	64.257m; L=30.000m; R=30.000m; L=12.081m; L=30.000m; L; L=20.000m; R=50.000m; L=26.048m; L=20.000m; L=27.570m; L=30.000m; L=30.453m; R=−30.000m; L=30.000m; L=9.077m; L=15.000m; L; R; L=15.000m; L=21.465m; L=15.000m; R=70.000m; L=21.649m; L=15.000m; L=11.600m; L=20.000m; R=−250.000m; L=27.311m; L; L=20.000m; L=20.000m
VERTICAL SCHEMATIC (G=%) (L=m),(R=M)	G=6.990; L=904.936m; R=−572.246m L=40.000m
WIDENING SCHEMATIC (M) L R	3.500 5.000 5.000 3.500 4.700 4.700 3.500 3.500 5.000 5.000 4.100 4.100 3.500 3.500 4.400 4.400 3.500 3.500 5.000 5.000 3.500
SUPERELEVATION SCHEMATIC (e=%) L R	e=7.000 e=2.500 e=7.000 e=7.000 e=2.500 e=4.700 e=5.000 e=2.500 e=5.900
CHAINAGE (M)	15500 15510 15520 15530 15540 15550 15560 15570 15580 15590 15600 15610 15620 15630 15640 15650 15660 15670 15680 15690 15700 15710 15720 15730 15740 15750 15760 15770 15780 15790 15800 15810 15820 15830 15840 15850 15860 15870 15880 15890 15900 15910 15920 15930 15940 15950 15960 15970 15980 15990 16000

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : **Glabal Infra Solutions**
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : **Valecha Engineering Ltd**
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) Approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : **SPS Technocrats Pvt. Ltd.**
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: **DEMWE - BRAHMKUND (NH-13)**
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE** *(From Km 15+500 to Km 16+000)*
Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet) Hor: 10 0 10 20 Ver: 1 0 1 2
Rev: **R4**
Drg. No: **VLE/DE-BR/HW/PNP/30A**

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE

BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUJAMMA CONSULTANTS Regd. No: 1112004-05 BHUBANESWAR

HILL
VALLEY
H T LINE
GUARD WALL
Guard Wall
MATCHLINE
PCC ROAD START
GPS
PROW
MOW

BRIDGE NO : 16/1
CHAINAGE(m): 16120
TYPE : MINOR BRIDGE
SIZE : 1X4.1m
PROPOSAL : NEW

CULVERT NO: 16/1
CHAINAGE(m): 16164
TYPE : BOX CULVERT
SIZE : 1x3mx3m
PROPOSAL : RECONST.

CULVERT NO: 16/2
CHAINAGE(m): 16377
TYPE : BOX CULVERT
SIZE : 1x3mx3m
PROPOSAL : RECONST.

PILLAR GPS4
X(m)=239822.615
Y(m)=3088242.193
Z(m)=668.153

PILLAR GPS3
X(m)=239959.545
Y(m)=3088250.554
Z(m)=670.412

16100

HIP NO. 142 @ CH.(m) 16071.812			
X(m)=239922.778		Y(m)=3088583.575	
R (m)	150	Ls (m)	15.000
Dc(deg)	5.833	S(m)	0.063
Lc(m)	15.279	Ts(deg)	2.865
Ts(m)	22.697	D(deg)	11.566
Es(m)	0.833	e(%)	2.70%
Design Speed (V): 30 kmph			

16200

HIP NO. 143 @ CH.(m) 16245.682			
X(m)=239944.023		Y(m)=3088410.825	
R (m)	150	Ls (m)	20.000
Dc(deg)	7.334	S(m)	0.117
Lc(m)	19.201	Ts(deg)	3.820
Ts(m)	29.726	D(deg)	14.974
Es(m)	1.402	e(%)	4.70%
Design Speed (V): 40 kmph			

16300

HIP NO. 144 @ CH.(m) 16320.258			
X(m)=239933.564		Y(m)=3088336.052	
R (m)	660.55	Ls (m)	20.000
Dc(deg)	17.284	S(m)	0.303
Lc(m)	16.591	Ts(deg)	10.417
Ts(m)	29.095	D(deg)	38.118
Es(m)	3.510	e(%)	7.00%
Design Speed (V): 30 kmph			

16400

HIP NO. 145 @ CH.(m) 16368.039			
X(m)=239958.019		Y(m)=3088293.958	
R (m)	70	Ls (m)	15.000
Dc(deg)	5.211	S(m)	0.134
Lc(m)	6.367	Ts(deg)	6.139
Ts(m)	18.285	D(deg)	17.489
Es(m)	0.959	e(%)	5.70%
Design Speed (V): 30 kmph			

16500

HIP NO. 146 @ CH.(m) 16425.181			
X(m)=239971.489		Y(m)=3088234.025	
R (m)	41	Ls (m)	25.000
Dc(deg)	35.688	S(m)	0.630
Lc(m)	25.538	Ts(deg)	17.468
Ts(m)	41.954	D(deg)	70.625
Es(m)	10.023	e(%)	7.00%
Design Speed (V): 30 kmph			

HIP NO. 147 @ CH.(m) 16651.400			
X(m)=240151.568		Y(m)=3088312.860	
R (m)	125	Ls (m)	15.000
Dc(deg)	22.918	S(m)	0.804
Lc(m)	38.665	Ts(deg)	23.308
Ts(m)	44.031	D(deg)	27.504
Es(m)	4.441	e(%)	2.70%
Design Speed (V): 30 kmph			

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : **Glabal Infra Solutions**
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : **Valecha Engineering Ltd**
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) Approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : **SPS Technocrats Pvt. Ltd.**
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project:
DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE** *(From Km 16+000 to Km 16+500)*

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet)
Hor: 10 0 10 20
Ver: 1 0 1 2

Rev: **R4**

Drg. No: **VLE/DE-BR/HW/PNP/31**

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE ← → BRAHMKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS Regd. No-111/2004-05 BHUBANESWAR

PROPOSED ROAD
EXISTING LEVEL AT PROP. CL
EXIST. GROUND @ RHS SHOULDER EDEG
EXIST. GROUND @ LHS SHOULDER EDEG

Chainage=16090.500m Level=669.298m
Chainage=16150.500m Level=667.900m
BRIDGE NO. : 16/2
CHAINAGE : 16020
PROP SPAN : 1x41m
Chainage=16197.505m Level=676.778m
BOX CULVERT , (1x3mx3m) CHAINAGE=16164m
Chainage=16257.505m Level=677.394m
Chainage=16337.173m Level=673.460m
BOX CULVERT , (1x3mx3m) CHAINAGE=16377m
Chainage=16437.173m Level=669.457m

Level Datum(M) = 660

| | | |

LEGEND :

PLAN :

EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

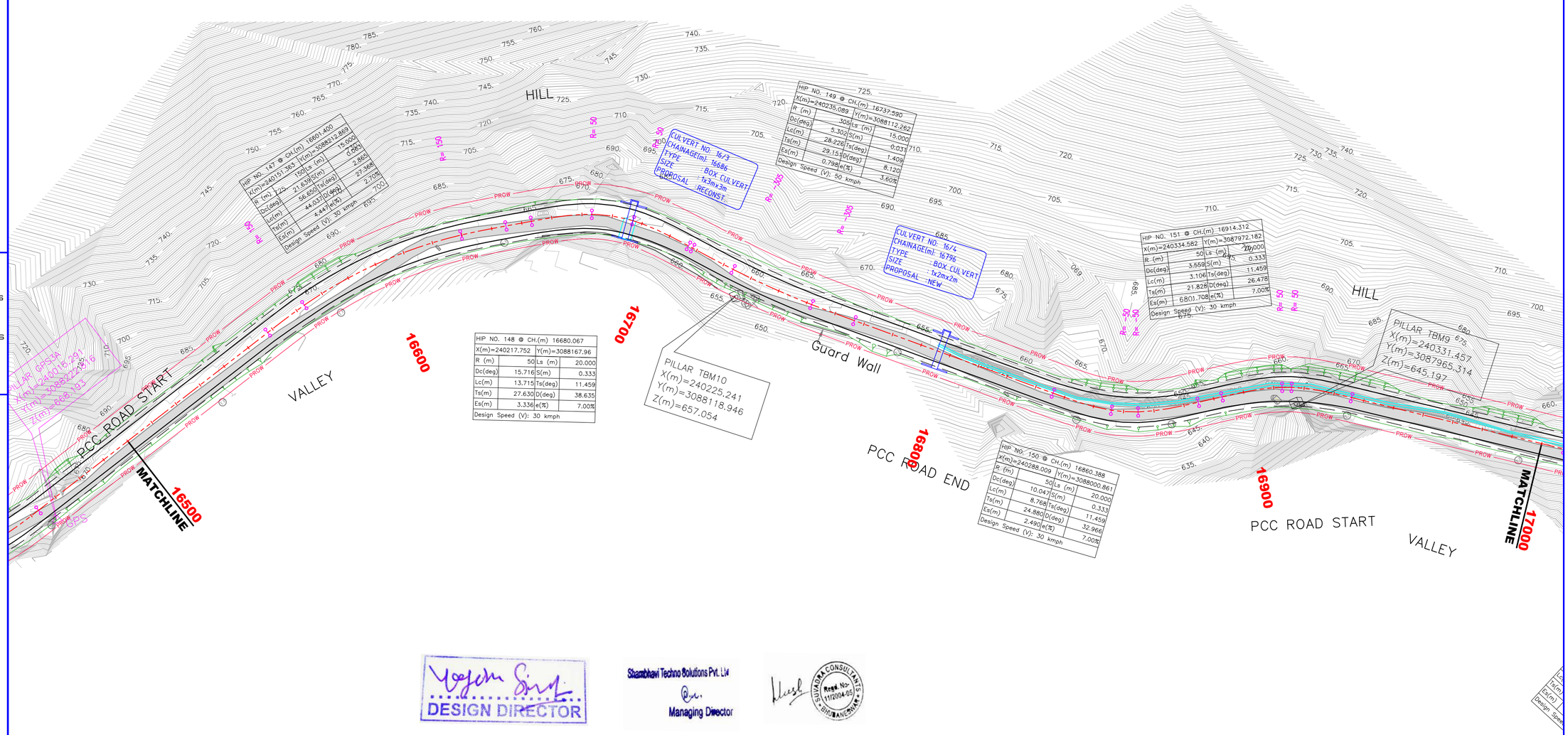
TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE

BRAHMAKUND



DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd
Managing Director

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client :
NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer :
Glabal Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

E/PC Contractor :
Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant :
SUVADRA CONSULTANTS
(An ISO 9001 : 2008 Certified)
(Soil Testing Laboratory & Engineering Consultant) approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant :
SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant :
SPS Technocrats Pvt. Ltd.
 # 638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project:
DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE – BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	**SEP.-2022**

Title: **PLAN & LONGITUDINAL PROFILE**
(From Km 16+500 to Km 17+000)

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet)
Hor: 10 0 10 20
Ver: 1 0 1 2

Rev: **R4**

Drg. No: **VLE/DE-BR/HW/PNP/32**

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE ← → BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS BHUBANESWAR Regd. No. 111/2004-05

Chainage=16540.999m
Level=666.269m

Chainage=16620.999m
Level=665.134m

Chainage=16670.572m
Level=660.771m

BOX CULVERT , (1x3m x3m)
CHAINAGE=16686m

Chainage=16730.572m
Level=657.445m

BOX CULVERT , (1x2m x2m)
CHAINAGE=16796m

PROPOSED ROAD
EXISTING LEVEL AT PROP. CL
EXIST. GROUND @ RHS SHOULDER EDEG
EXIST. GROUND @ LHS SHOULDER EDEG

Level Datum(M) = 630

| | | |

LEGEND :

PLAN :

EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE

BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd
Dir.
Managing Director

SUVADRA CONSULTANTS Regd. No- 117004-05 BHUBANESWAR

HIP NO. 152 @ CH.(m) 17033.473			
X(m)=240398.227		Y(m)=3087869.927	
R (m)	41	Ls (m)	20.000
Dc(deg)	16.708	S(m)	0.407
Lc(m)	11.956	Ts(deg)	13.975
Ts(m)	26.986	D(deg)	44.657
Es(m)	3.763	e(%)	6.80%
Design Speed (V): 25 kmph			

CULVERT NO: 17/1
CHAINAGE(m): 17044
TYPE : BOX CULVERT
SIZE : 1x6mx6m
PROPOSAL : RECONST.

PILLAR TBM8
X(m)=240394.278
Y(m)=3087787.891
Z(m)=635.285

CULVERT NO: 17/2
CHAINAGE(m): 17128
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : RECONST.

CULVERT NO: 17/3
CHAINAGE(m): 17314
TYPE : BOX CULVERT
SIZE : 1x3mx3m
PROPOSAL : RECONST.

PILLAR TBM7
X(m)=240466.717
Y(m)=3087612.820
Z(m)=625.352

CULVERT NO: 17/4
CHAINAGE(m): 17375
TYPE : BOX CULVERT
SIZE : 1x3mx3m
PROPOSAL : RECONST.

HIP NO. 153 @ CH.(m) 17082.659			
X(m)=240387.021		Y(m)=3087820.443	
R (m)	41	Ls (m)	20.000
Dc(deg)	7.774	S(m)	0.407
Lc(m)	5.563	Ts(deg)	13.975
Ts(m)	23.323	D(deg)	35.723
Es(m)	2.503	e(%)	6.80%
Design Speed (V): 25 kmph			

HIP NO. 154 @ CH.(m) 17132.414			
X(m)=240407.014		Y(m)=3087773.265	
R (m)	41	Ls (m)	20.000
Dc(deg)	15.689	S(m)	0.407
Lc(m)	11.227	Ts(deg)	13.975
Ts(m)	26.558	D(deg)	43.638
Es(m)	3.602	e(%)	6.80%
Design Speed (V): 25 kmph			

HIP NO. 155 @ CH.(m) 17215.639			
X(m)=240373.55		Y(m)=3087684.58	
R (m)	50	Ls (m)	20.000
Dc(deg)	66.090	S(m)	0.333
Lc(m)	57.674	Ts(deg)	11.459
Ts(m)	59.456	D(deg)	89.008
Es(m)	20.574	e(%)	7.00%
Design Speed (V): 30 kmph			

HIP NO. 156 @ CH.(m) 17295.074			
X(m)=240458.18		Y(m)=3087650.86	
R (m)	50	Ls (m)	20.000
Dc(deg)	19.936	S(m)	0.333
Lc(m)	17.032	Ts(deg)	11.459
Ts(m)	29.522	D(deg)	42.424
Es(m)	3.991	e(%)	7.00%
Design Speed (V): 30 kmph			

HIP NO. 157 @ CH.(m) 17382.202			
X(m)=240498.024		Y(m)=3087568.941	
R (m)	41	Ls (m)	25.000
Dc(deg)	28.852	S(m)	0.635
Lc(m)	20.646	Ts(deg)	17.468
Ts(m)	38.371	D(deg)	63.788
Es(m)	8.039	e(%)	7.00%
Design Speed (V): 30 kmph			

HIP NO. 158 @ CH.(m) 17454.423			
X(m)=240460.967		Y(m)=3087508.43	
R (m)	41	Ls (m)	25.000
Dc(deg)	13.945	S(m)	0.635
Lc(m)	9.972	Ts(deg)	17.468
Ts(m)	31.36	D(deg)	48.875
Es(m)	4.334	e(%)	7.00%
Design Speed (V): 30 kmph			

HIP NO. 159 @ CH.(m) 17511.134			
X(m)=240462.181		Y(m)=3087450.678	
R (m)	41	Ls (m)	20.000
Dc(deg)	11.870	S(m)	0.407
Lc(m)	8.494	Ts(deg)	13.975
Ts(m)	26.877	D(deg)	39.819
Es(m)	3.039	e(%)	6.80%
Design Speed (V): 25 kmph			

HIP NO. 160 @ CH.(m) 17569.176			
X(m)=240435.497		Y(m)=3087403.835	
R (m)	50	Ls (m)	20.000
Dc(deg)	6.314	S(m)	0.333
Lc(m)	5.516	Ts(deg)	11.459
Ts(m)	23.113	D(deg)	29.232
Es(m)	2.017	e(%)	7.00%
Design Speed (V): 30 kmph			

PCC ROAD END

Guard Wall

HILL

TEMPLE

VALLEY

MATCHLINE 17000

MATCHLINE 17500

17100

17200

17300

17400

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client :
NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer :
Glabal Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor :
Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant :
SUVADRA CONSULTANTS
(An ISO 9001 : 2008 Certified)
(Soil Testing Laboratory & Engineering Consultant)
Approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant :
SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant :
SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project:
DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH 0.000 TO CH 18.444 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE**
(From Km 17+000 to Km 17+500)

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet)
Hor: 10 0 10 20
Ver: 1 0 1 2

Rev: R4

Drg. No: VLE/DE-BR/HW/PNP/33

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE ← → BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS Regd. No. 11/2004-05 BHUBANESWAR

PROPOSED ROAD
EXISTING LEVEL AT PROP. CL
EXIST. GROUND @ RHS SHOULDER EDEG
EXIST. GROUND @ LHS SHOULDER EDEG

Chainage=17042.966m
Level=637.711m
BOX CULVERT , (1x6mx6m)
CHAINAGE=17044m

Chainage=17102.966m
Level=635.547m
Chainage=17107.056m
Level=635.511m

BOX CULVERT , (1x2mx2m)
CHAINAGE=17128m

BOX CULVERT , (1x3mx3m)
CHAINAGE=17314m
Chainage=17317.056m
Level=626.225m

BOX CULVERT , (1x3mx3m)
CHAINAGE=17375m

Chainage=17409.151m
Level=618.903m

Level Datum(M) = 600

FINISHED ROAD LEVELS (M)	640.425 639.793 639.162 638.530 637.898 637.289 636.766 636.333 635.991 635.739 635.578 635.483 635.367 635.217 635.034 634.817 634.567 634.283 633.965 633.614 633.229 632.810 632.358 631.872 631.353 630.800 630.214 629.594 628.940 628.253 627.532 626.777 625.991 625.196 624.401 623.606 622.811 622.016 621.221 620.426 619.631 618.836 618.054 617.293 616.555 615.838 615.143 614.470 613.819 613.189 612.582
EXIST LEVELS AT PROP. CL (M)	644.692 641.521 638.974 638.409 637.827 637.161 636.899 639.219 640.953 636.611 636.090 635.477 635.167 634.836 634.837 634.872 634.940 637.215 637.047 635.928 634.329 634.070 633.519 635.703 634.901 636.779 636.111 629.988 628.421 627.737 627.051 626.594 626.162 625.777 627.359 625.420 623.716 622.956 621.610 620.738 619.647 618.692 617.966 617.617 617.312 617.287 615.242 613.690 614.147 612.914 612.169
EXISTING GROUND AT LHS SHOULDER EDGE LVL (M)	645.703 643.751 642.394 640.577 638.698 639.697 643.696 646.957 647.025 642.092 640.563 640.156 636.868 637.052 637.448 639.817 640.488 646.419 644.992 640.948 640.169 638.167 639.541 639.567 638.861 641.872 642.997 636.327 635.704 635.613 629.819 627.001 626.814 636.421 637.304 635.458 630.010 625.094 626.232 623.530 620.488 620.282 620.363 622.360 624.129 621.625 627.275 622.941 629.107 622.153 622.994
EXISTING GROUND AT RHS SHOULDER EDGE LVL (M)	640.241 639.549 638.409 638.224 637.761 637.226 636.448 635.951 635.671 635.526 635.369 635.332 634.790 634.809 634.770 634.883 634.855 634.828 634.692 634.439 634.725 634.873 633.794 632.922 632.059 631.302 630.280 629.194 628.883 627.933 624.963 626.459 626.353 625.443 624.662 624.176 623.169 620.649 620.946 620.359 619.525 618.471 617.657 616.921 615.909 614.932 614.054 613.288 612.527 611.968 611.621
HORIZONTAL SCHEMATIC (M)	L=71.630m; L=20.000m; R=41.000m; L=11.956m; L=20.000m; L; L=20.000m; R; L; L=20.000m; R=41.000m; L=11.227m; L=20.000m; L; L=20.000m; L=57.674m; R=−50.000m; L=20.000m; L; L=20.000m; R=50.000m; L=17.022m; L=20.000m; L=23.294m; L=25.000m; R=41.000m; L=20.646m; L=25.000m; L; L=25.000m; L=25.000m; L=9.975m; R
VERTICAL (G=%) SCHEMATIC (L=m),(R=M)	G=−6.317; L=312.395m; R=1106.340m; L=60.000m; G; L; R=−2976.156m; L=210.000m; G=−7.950; L=92.095m; R=4580.622m; L=170.000m; R=4580.622m; L=170.000m
WIDENING SCHEMATIC (M) L R	3.500 4.700 4.700 3.500 3.500 4.700 4.700 3.500 3.500 4.700 4.700 3.500 3.500 4.700 4.700 3.500 3.500 4.700 4.700 3.500 3.500 4.700 4.700 3.500
SUPERELEVATION SCHEMATIC (e=%) L R	e=6.800; e=6.800; e=6.800; e=6.800; e=6.800; e=6.800; e=7.000; e=7.000; e=7.000; e=7.000; e=2.500; e=2.500; e=2.500; e=2.500; e=7.000; e=7.000
CHAINAGE (M)	17000 17010 17020 17030 17040 17050 17060 17070 17080 17090 17100 17110 17120 17130 17140 17150 17160 17170 17180 17190 17200 17210 17220 17230 17240 17250 17260 17270 17280 17290 17300 17310 17320 17330 17340 17350 17360 17370 17380 17390 17400 17410 17420 17430 17440 17450 17460 17470 17480 17490 17500

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client :
NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer :
Glabal Infra Solutions
E-811A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor :
Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant :
SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified)
(Soil Testing Laboratory & Engineering Consultant) approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant :
SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant :
SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project:
DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE – BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH

Date: **SEP.-2022**

Title: **PLAN & LONGITUDINAL PROFILE**
(From Km 17+000 to Km 17+500)

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet)
Hor: 10 0 10 20
Ver: 1 0 1 2

Ref: **R4**

Drg. No: **VLE/DE-BR/HW/PNP/33A**

LEGEND :

PLAN :

EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE

BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS Regd. No-111/2004-05 BHUBANESWAR

CULVERT NO: 18/1
CHAINAGE(m): 18036
TYPE : BOX CULVERT
SIZE : 1x3mx3m
PROPOSAL : RECONST.

HIP NO. 166 @ CH.(m) 17878.202			
X(m)=240610.402		Y(m)=3087035.897	
R (m)		41 Ls (m)	20.000
Dc(deg)	21.566	S(m)	0.407
Lc(m)	15.434	Ts(deg)	13.975
Ts(m)	29.577	D(deg)	49.517
Es(m)	4.598	e(%)	6.80%
Design Speed (V): 25 kmph			

PILLAR TBM5
X(m)=240550.129
Y(m)=3087457.938
Z(m)=593.943

HILL

MATCHLINE 18000

Guard Wall

CULVERT NO: 17/6
CHAINAGE(m): 17841
TYPE : BOX CULVERT
SIZE : 1x3mx3m
PROPOSAL : RECONST.

VALLEY

17900

HIP NO. 165 @ CH.(m) 17932.193			
X(m)=240591.777		Y(m)=3087079.541	
R (m)		70 Ls (m)	15.000
Dc(deg)	4.050	S(m)	0.134
Lc(m)	4.948	Ts(deg)	16.329
Ts(m)	17.558	D(deg)	6.139
Es(m)	0.852	e(%)	5.70%
Design Speed (V): 30 kmph			

PILLAR TBM6
X(m)=240434.206
Y(m)=3087359.411
Z(m)=606.776

HILL

CULVERT NO: 17/5
CHAINAGE(m): 17636
TYPE : BOX CULVERT
SIZE : 1x3mx3m
PROPOSAL : RECONST.

Guard Wall

MATCHLINE 17500

17600

17700

17800

HIP NO. 159 @ CH.(m) 17511.134			
X(m)=240462.181		Y(m)=3087450.678	
R (m)		41 Ls (m)	20.000
Dc(deg)	11.870	S(m)	0.407
Lc(m)	8.494	Ts(deg)	13.975
Ts(m)	24.977	D(deg)	39.819
Es(m)	3.039	e(%)	6.80%
Design Speed (V): 25 kmph			

HIP NO. 160 @ CH.(m) 17559.178			
X(m)=240438.497		Y(m)=3087407.635	
R (m)		50 Ls (m)	20.000
Dc(deg)	6.314	S(m)	0.333
Lc(m)	5.510	Ts(deg)	11.459
Ts(m)	23.113	D(deg)	29.232
Es(m)	2.017	e(%)	7.00%
Design Speed (V): 30 kmph			

HIP NO. 161 @ CH.(m) 17611.924			
X(m)=240438.882		Y(m)=3087368.874	
R (m)		50 Ls (m)	20.000
Dc(deg)	13.557	S(m)	0.333
Lc(m)	11.831	Ts(deg)	11.459
Ts(m)	26.572	D(deg)	36.476
Es(m)	2.996	e(%)	7.00%
Design Speed (V): 30 kmph			

HIP NO. 162 @ CH.(m) 17662.808			
X(m)=240469.875		Y(m)=3087312.576	
R (m)		105 Ls (m)	15.000
Dc(deg)	6.980	S(m)	0.089
Lc(m)	12.791	Ts(deg)	4.093
Ts(m)	21.488	D(deg)	15.165
Es(m)	1.016	e(%)	3.80%
Design Speed (V): 30 kmph			

HIP NO. 163 @ CH.(m) 17751.074			
X(m)=240502.631		Y(m)=3087230.357	
R (m)		50 Ls (m)	15.000
Dc(deg)	4.536	S(m)	0.188
Lc(m)	3.958	Ts(deg)	8.594
Ts(m)	17.125	D(deg)	21.724
Es(m)	1.103	e(%)	5.60%
Design Speed (V): 25 kmph			

HIP NO. 164 @ CH.(m) 17792.654			
X(m)=240502.628		Y(m)=3087187.921	
R (m)		41 Ls (m)	20.000
Dc(deg)	11.493	S(m)	0.407
Lc(m)	8.224	Ts(deg)	13.975
Ts(m)	24.823	D(deg)	39.442
Es(m)	2.986	e(%)	6.80%
Design Speed (V): 25 kmph			

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : **Glabal Infra Solutions**
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : **Valecha Engineering Ltd**
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) Approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : **SPS Technocrats Pvt. Ltd.**
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project:
DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE** *(From Km 17+500 to Km 18+000)*

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet) Hor: 10 0 10 20 Ver: 1 0 1 2

Rev: R4

Drg. No: VLE/DE-BR/HW/PNP/34

LEGEND :

PLAN : EXISTING

- EXIST. ROAD
- K-I/R : KACHA RESIDENTIAL
- K-I/C : KACHA COMMERCIAL
- SP-I/R : SEMI PUCCA RESI.
- SP-I/C : SEMI PUCCA COMM.
- P-I/R : PUCCA RESIDENTIAL
- P-I/C : PUCCA COMMERCIAL
- 1000 CONTOUR

PROPOSED:

- TOE LINE / SH EDGE
- C/W EDGE
- CEN.LINE
- C/W EDGE
- SH EDGE / TOE LINE
- HOR. TANGENT POINT
- PROW — PROPOSED ROW
- BRIDGE
- BOX CULVERT
- DRAIN
- COVERED DRAIN
- RETAINING WALL
- BREAST WALL

PROFILE :

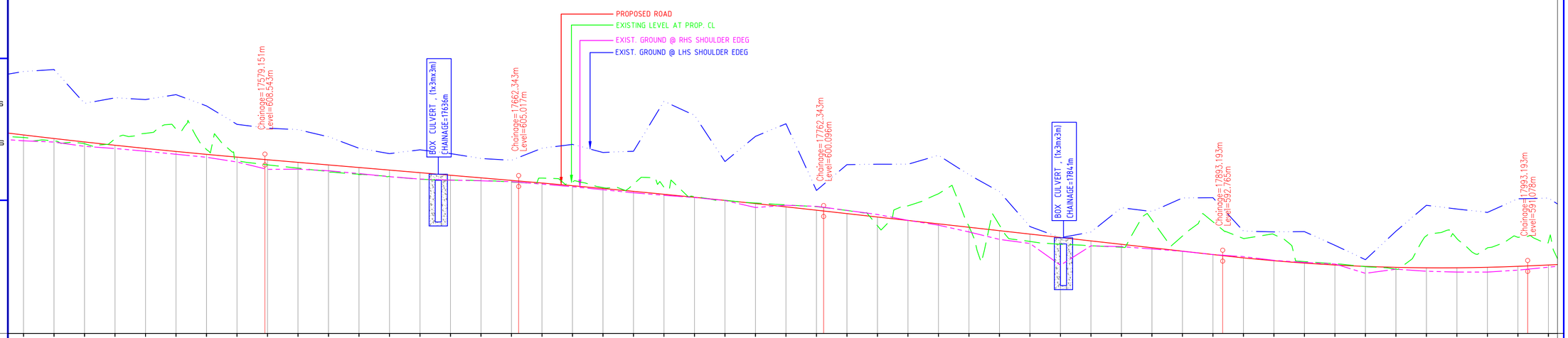
- PROP. LEVEL
- EXIST. GROUND @ RHS SHOULDER EDGE LVL
- EXIST. LEVEL AT PRO. CL
- EXIST. GROUND @ RHS SHOULDER EDGE LVL
- VER. TANGENT POINT

DEMWE ← → BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd. Dir. Managing Director

SUVADRA CONSULTANTS Regd. No- 117/2004-05 BHUBANESWAR



FINISHED ROAD LEVELS (M)	612.582 611.996 611.432 610.890 610.370 609.871 609.395 608.940 608.507 608.083 607.659 607.235 606.811 606.387 605.964 605.540 605.116 604.688 604.247 603.792 603.324 602.842 602.346 601.837 601.314 600.777 600.227 599.667 599.107 598.547 597.986 597.426 596.866 596.306 595.745 595.185 594.625 594.065 593.504 592.944 592.402 591.934 591.545 591.234 591.001 590.846 590.770 590.772 590.852 591.011 591.229
EXIST LEVELS AT PROP. CL (M)	612.169 611.601 611.139 611.952 612.838 613.538 610.174 608.328 607.671 607.136 606.573 606.062 605.773 605.319 605.166 605.086 604.855 605.502 604.859 603.942 604.498 603.985 602.458 601.850 601.407 601.099 600.806 600.179 597.670 600.939 602.924 597.597 597.778 595.097 594.639 594.392 594.139 598.620 595.981 598.321 595.585 596.230 591.786 591.436 590.957 590.551 596.016 595.558 594.026 595.773 595.051
EXISTING GROUND AT LHS SHOULDER EDGE LVL (M)	622.994 623.318 617.762 618.674 618.388 619.196 617.347 614.320 613.695 613.450 612.276 610.395 609.511 610.139 609.522 608.714 608.422 610.403 611.027 609.703 609.903 618.104 615.797 608.214 612.347 614.418 603.468 607.708 607.776 607.768 609.236 606.051 603.269 597.541 595.715 596.633 600.631 600.007 602.229 602.278 596.787 596.665 596.706 594.464 592.103 596.771 601.028 600.420 599.864 602.102 602.199
EXISTING GROUND AT RHS SHOULDER EDGE LVL (M)	611.621 611.414 610.712 610.354 609.911 609.412 608.918 608.139 606.926 606.969 606.699 606.236 605.731 605.336 605.166 605.055 604.908 604.511 604.080 603.587 603.089 602.668 602.308 601.822 600.666 601.032 600.860 600.201 599.522 598.558 597.771 596.660 595.433 594.763 591.200 594.373 594.247 593.865 593.479 592.944 592.606 591.998 591.644 591.399 589.864 590.542 590.207 590.069 590.067 590.390 590.872
HORIZONTAL SCHEMATIC (M)	L=25.000m; L=20.000m; L=20.000m; L=20.000m; L=20.000m; L=20.000m; L=11.831m; R=−50.000m; L=20.000m; L=15.000m; R=105.000m; L=12.790m; L=15.000m; L=49.891m; L=15.000m; L=15.000m; L=20.000m; L=97.953m; L=15.000m; L=15.000m; L=20.000m
VERTICAL SCHEMATIC (G=%) (L=m),(R=M)	G=−4.239; L=83.192m; R=−7333.256m; L=100.000m; G=−5.602; L=130.850m; R=1277.184m; L=100.000m; R=1277.184m; L=100.000m
WIDENING SCHEMATIC (M) L R	3.500 4.700 4.100 4.400
SUPERELEVATION SCHEMATIC (e=%) L R	e=6.800 e=7.000 e=2.500 e=3.800 e=5.600 e=6.800 e=5.700
CHAINAGE (M)	17500 17510 17520 17530 17540 17550 17560 17570 17580 17590 17600 17610 17620 17630 17640 17650 17660 17670 17680 17690 17700 17710 17720 17730 17740 17750 17760 17770 17780 17790 17800 17810 17820 17830 17840 17850 17860 17870 17880 17890 17900 17910 17920 17930 17940 17950 17960 17970 17980 17990 18000

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : Glabal Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039) Tel.-0755-4045216

EPC Contractor : Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) (opened By Govt. of Orissa Regd. No. 11 of 2004-05)
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE – BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: PLAN & LONGITUDINAL PROFILE (From Km 17+500 to Km 18+000)

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet) Hor: 10 0 10 20 Ver: 1 0 1 2

Rev: R4

Drg. No: VLE/DE-BR/HW/PNP/34A

LEGEND :

PLAN :

EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE

BRAHMAKUND

MATCHLINE 18000

MATCHLINE 18500

18100

18200

18300

18400

VALLEY

HILL

Guard Wall

PILLAR TBM4
X(m)=240687.514
Y(m)=3086943.511
Z(m)=592.267

CULVERT NO. 18/1
CHAINAGE(m): 18036
TYPE : BOX CULVERT
SIZE : 1x2m x2m
PROPOSAL : RECONST.

CULVERT NO: 18/2
CHAINAGE(m): 18303
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL :RECONST.

CULVERT NO. 18/3
CHAINAGE(m): 18453
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : RECONST.

HIP NO. 166 @ CH.(m) 17978.202
X(m)=240810.402 Y(m)=3087035.897
R (m) 4 Ls (m) 20.000
Dc(deg) 21.540 S(m) 0.407
Lc(m) 15.434 Ts(deg) 13.975
Ts(m) 28.077 D(deg) 49.513
Es(m) 4.558 e(%) 6.800
Design Speed (V): 25 kmph

HIP NO. 167 @ CH.(m) 18039.513
X(m)=240672.988 Y(m)=3087016.318
R (m) 30 Ls (m) 25.000
Dc(deg) 19.097 S(m) 0.868
Lc(m) 10.457 Ts(deg) 23.873
Ts(m) 32.136 D(deg) 67.778
Es(m) 7.172 e(%) 7.000
Design Speed (V): 25 kmph

HIP NO. 168 @ CH.(m) 18098.105
X(m)=240678.42 Y(m)=3086951.09
R (m) 30 Ls (m) 25.000
Dc(deg) 11.463 S(m) 0.868
Lc(m) 6.000 Ts(deg) 23.873
Ts(m) 29.967 D(deg) 59.218
Es(m) 5.503 e(%) 7.000
Design Speed (V): 25 kmph

HIP NO. 169 @ CH.(m) 18184.270
X(m)=240757.895 Y(m)=3086914.531
R (m) 70 Ls (m) 15.000
Dc(deg) 10.407 S(m) 0.134
Lc(m) 12.719 Ts(deg) 6.139
Ts(m) 18.059 D(deg) 11.477
Es(m) 1.531 e(%) 3.80%
Design Speed (V): 30 kmph

HIP NO. 170 @ CH.(m) 18098.105
X(m)=240799.848 Y(m)=3086912.189
R (m) 105 Ls (m) 15.000
Dc(deg) 3.292 S(m) 0.089
Lc(m) 6.032 Ts(deg) 4.093
Ts(m) 18.059 D(deg) 11.477
Es(m) 0.619 e(%) 3.80%
Design Speed (V): 30 kmph

HIP NO. 171 @ CH.(m) 18315.788
X(m)=240886.814 Y(m)=3086889.419
R (m) 70 Ls (m) 15.000
Dc(deg) 5.329 S(m) 0.134
Lc(m) 6.510 Ts(deg) 6.139
Ts(m) 18.358 D(deg) 17.606
Es(m) 0.970 e(%) 5.70%
Design Speed (V): 30 kmph

HIP NO. 172 @ CH.(m) 18365.295
X(m)=240929.533 Y(m)=3086862.436
R (m) 50 Ls (m) 20.000
Dc(deg) 18.097 S(m) 0.333
Lc(m) 15.793 Ts(deg) 11.459
Ts(m) 28.813 D(deg) 41.016
Es(m) 3.739 e(%) 7.00%
Design Speed (V): 30 kmph

HIP NO. 173 @ CH.(m) 18426.761
X(m)=240993.805 Y(m)=3086872.314
R (m) 30 Ls (m) 1.250
Dc(deg) 6.736 S(m) 28.648
Lc(m) 3.527 Ts(deg) 64.032
Ts(m) 34.415 D(deg) 7.00%
Es(m) 6.856 e(%)
Design Speed (V): 30 kmph

HIP NO. 174 @ CH.(m) 18511.101
X(m)=241024.763 Y(m)=3086798.03
R (m) 15.000 Ls (m) 5.000
Dc(deg) 19.098 S(m) 2.500
Lc(m) 16.299 Ts(deg) 25.353
Ts(m) 28.813 D(deg) 41.016
Es(m) 3.739 e(%) 5.70%
Design Speed (V): 30 kmph

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

DESIGN DIRECTOR

SUVADRA CONSULTANTS Regd. No- 11/12004-05 BHUBANESWAR

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client :
NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer :
Glabal Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor :
Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant :
SUVADRA CONSULTANTS
(An ISO 9001 : 2008 Certified)
(Soil Testing Laboratory & Engineering Consultant) approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant :
SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant :
SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project:
DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH 0.000 TO CH 18.644 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE**
(From Km 18+000 to Km 18+500)

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet)
Hor: 10 0 10 20
Ver: 1 0 1 2

Rev: **R4**

Drg. No: **VLE/DE-BR/HW/PNP/35**

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE ← → BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS BHUBANESWAR Regd. No: 11/2004-05

PROPOSED ROAD
EXISTING LEVEL AT PROP. CL
EXIST. GROUND @ RHS SHOULDER EDEG
EXIST. GROUND @ LHS SHOULDER EDEG

Chainage=18019.450m
Level=591.663m
BOX CULVERT, (1x3mx3m)
CHAINAGE=18036m

Chainage=18199.450m
Level=590.871m

BOX CULVERT, (1x2mx2m)
CHAINAGE=18303m

BOX CULVERT, (1x2mx2m)
CHAINAGE=18453m

Level Datum(M) = 560

FINISHED ROAD LEVELS (M)	591.229 591.452 591.675 591.881 592.058 592.205 592.322 592.410 592.468 592.496 592.495 592.464 592.404 592.314 592.194 592.045 591.866 591.657 591.419 591.151 590.853 590.543 590.232 589.921 589.610 589.300 588.989 588.678 588.368 588.057 587.746 587.435 587.125 586.814 586.503 586.192 585.882 585.571 585.260 584.949 584.639 584.328 584.017 583.706 583.396 583.085 582.774 582.463 582.153 581.842 581.531
EXIST LEVELS AT PROP. CL (M)	595.051 583.122 588.487 591.779 591.985 591.396 593.591 595.667 594.005 584.208 591.820 591.775 591.889 585.479 586.429 590.529 591.217 590.883 587.113 582.916 585.792 590.019 590.487 590.766 581.475 584.185 589.463 588.987 588.967 588.428 587.554 590.127 587.929 590.256 580.749 588.176 592.821 592.459 585.061 590.178 581.683 585.078 587.092 586.940 584.882 581.691 585.405 581.668 581.529 581.359 581.092
EXISTING GROUND AT LHS SHOULDER EDGE LVL (M)	602.199 599.038 597.396 597.420 594.346 595.468 604.298 600.779 597.696 596.684 597.594 597.435 600.052 600.229 596.684 598.070 598.240 603.113 602.753 596.281 595.477 594.309 593.523 593.715 595.037 596.657 598.163 598.741 601.934 607.410 600.737 600.762 601.524 598.303 596.805 596.566 599.340 602.560 593.355 591.847 590.179 592.548 594.186 594.099 593.797 589.797 590.998 587.429 587.560 587.463 583.024
EXISTING GROUND AT RHS SHOULDER EDGE LVL (M)	590.872 591.349 591.446 591.690 591.861 591.966 592.204 592.123 592.017 592.064 591.966 592.157 591.940 591.863 591.692 591.657 591.627 591.586 591.352 590.999 590.720 590.373 589.384 589.454 589.173 588.806 588.511 588.274 587.985 587.703 587.499 587.308 587.313 587.074 586.593 586.193 585.476 585.014 584.702 584.456 584.370 583.923 583.646 583.407 583.038 582.603 581.478 582.186 582.116 580.844 581.014
HORIZONTAL SCHEMATIC (M)	0.000m L=15.434m R=−41.000m L=20.000m L L=25.000m R=30.000m L=10.457m L=25.000m L L=25.000m L R L=25.000m L=36.806m L=15.000m L=12.715m R=−70.000m L=15.000m L L=15.000m L L=15.000m L=53.481m R L=15.000m L R L=15.000m L L=20.000m L=15.792m R=−50.000m L=20.000m L L=30.000m L R L=30.000m L L=15
VERTICAL (G=%) SCHEMATIC (L=m),(R=M)	G=2.227 L=26.257m R=−3374.052m L=180.000m G=−3.107 L=382.060m
WIDENING SCHEMATIC (M) L R	3.500 3.500 5.000 5.000 3.500 3.500 3.500 4.400 4.400 3.500 3.500 4.100 4.100 3.500 3.500 3.500 4.400 4.400 3.500 3.500 4.700 4.700 5.000 5.000 4.400 4.400
SUPERELEVATION SCHEMATIC (e=%) L R	e=7.000 e=7.000 e=2.500 e=5.700 e=3.800 e=2.500 e=5.700 e=7.000 e=2.500 e=7.000 e=2.500 e=5.700
CHAINAGE (M)	18000 18010 18020 18030 18040 18050 18060 18070 18080 18090 18100 18110 18120 18130 18140 18150 18160 18170 18180 18190 18200 18210 18220 18230 18240 18250 18260 18270 18280 18290 18300 18310 18320 18330 18340 18350 18360 18370 18380 18390 18400 18410 18420 18430 18440 18450 18460 18470 18480 18490 18500

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : **Glabal Infra Solutions**
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : **Valecha Engineering Ltd**
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) Approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : **SPS Technocrats Pvt. Ltd.**
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: **DEMWE - BRAHMKUND (NH-13)**
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.44 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH

Title: **PLAN & LONGITUDINAL PROFILE** *(From Km 18+000 to Km 18+500)*

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet) Hor: 10 0 10 20 Ver: 1 0 1 2

Rev: **R4**

Date: **SEP.-2022**

Drg. No: **VLE/DE-BR/HW/PNP/35A**

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE

BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS Regd No- 111/2004-05 BHUBANESWAR

HIP NO. 178 @ CH.(m) 18738.334			
X(m)=240956.569		Y(m)=3087182.566	
R (m)	30	Ls (m)	30.000
Dc(deg)	22.573	S(m)	1.250
Lc(m)	11.819	Ts(deg)	28.648
Ts(m)	41.037	D(deg)	79.868
Es(m)	10.755	e(%)	7.000
Design Speed (V): 30 kmph			

CULVERT NO. 18/4
CHAINAGE(m) : 18751
TYPE : BOX CULVERT
SIZE : 1x2mx2m
PROPOSAL : RECONST.

HIP NO. 177 @ CH.(m) 18671.907			
X(m)=240977.844		Y(m)=3087114.256	
R (m)	45	Ls (m)	15.000
Dc(deg)	0.438	S(m)	0.021
Lc(m)	3.442	D(deg)	0.969
Ts(m)	16.725	D(deg)	2.548
Es(m)	0.115	e(%)	NIL
Design Speed (V): 50 kmph			

18700

HIP NO. 176 @ CH.(m) 18582.136			
HIP-N604096		Y(m)=3087027.457	
X(m)=241001.028		Ls (m)	15.000
R (m)	80	S(m)	0.104
Dc(deg)	6.074	D(deg)	4.775
Lc(m)	9.54	D(deg)	15.629
Ts(m)	19.860	e(%)	4.405
Es(m)	0.948		
Design Speed (V): 30 kmph			

VALLEY

18600

HIP NO. 175 @ CH.(m) 18542.615			
X(m)=241000.564		Y(m)=3086987.781	
R (m)	105	Ls (m)	15.000
Dc(deg)	3.823	S(m)	0.089
Lc(m)	7.068	D(deg)	4.093
Ts(m)	18.552	D(deg)	12.008
Es(m)	0.669	e(%)	3.804
Design Speed (V): 30 kmph			

MATCHLINE

18500

HIP NO. 174 @ CH.(m) 18485.037			
X(m)=241011.971		Y(m)=3086930.884	
R (m)	70	Ls (m)	15.000
Dc(deg)	16.290	S(m)	0.134
Lc(m)	19.902	D(deg)	6.139
Ts(m)	25.353	D(deg)	28.568
Es(m)	2.371	e(%)	5.705
Design Speed (V): 30 kmph			

PILLAR TBM2
X(m)=241019.616
Y(m)=3087193.265
Z(m)=569.366

HIP NO. 179 @ CH.(m) 18804.691			
X(m)=241020.984		Y(m)=3087215.999	
R (m)	45	Ls (m)	25.000
Dc(deg)	9.965	S(m)	0.635
Lc(m)	7.133	Ts(deg)	17.468
Ts(m)	29.665	D(deg)	44.902
Es(m)	4.050	e(%)	7.000
Design Speed (V): 30 kmph			

18800

CULVERT NO. 18/5
CHAINAGE(m) : 18896
TYPE : BOX CULVERT
SIZE : 1x3mx3m
PROPOSAL : NEW

HIP NO. 180 @ CH.(m) 18896.028			
X(m)=241051.295		Y(m)=3087311.032	
R (m)	30	Ls (m)	30.000
Dc(deg)	30.977	S(m)	1.250
Lc(m)	16.188	Ts(deg)	28.648
Ts(m)	45.186	D(deg)	98.213
Es(m)	13.523	e(%)	7.000
Design Speed (V): 30 kmph			

18900

HIP NO. 181 @ CH.(m) 18962.200			
X(m)=241121.576		Y(m)=3087239.036	
R (m)	70	Ls (m)	15.000
Dc(deg)	7.652	S(m)	0.134
Lc(m)	6.283	D(deg)	6.139
Ts(m)	18.943	D(deg)	18.344
Es(m)	1.062	e(%)	5.705
Design Speed (V): 30 kmph			

VALLEY

R= 70

R= 70

END- 18.960

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : Glabal Infra Solutions
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : Valecha Engineering Ltd
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) (Approved By Govt. of Orissa Regd. No. 11 of 2004-05)
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : SPS Technocrats Pvt. Ltd.
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: DEMWE - BRAHMKUND (NH-13)
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE – BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE** (From Km 18+500 to Km 19+000)

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet) Hor: 10 0 10 20 Ver: 1 0 1 2

Rev: R4

Drg. No: VLE/DE-BR/HW/PNP/36

LEGEND :

PLAN : EXISTING

EXIST. ROAD

K-I/R : KACHA RESIDENTIAL
K-I/C : KACHA COMMERCIAL
SP-I/R : SEMI PUCCA RESI.
SP-I/C : SEMI PUCCA COMM.
P-I/R : PUCCA RESIDENTIAL
P-I/C : PUCCA COMMERCIAL

1000 CONTOUR

PROPOSED:

TOE LINE
SH EDGE
C/W EDGE
CEN.LINE
C/W EDGE
SH EDGE
TOE LINE
HOR. TANGENT POINT
PROW PROPOSED ROW
BRIDGE
BOX CULVERT
DRAIN
COVERED DRAIN
RETAINING WALL
BREAST WALL

PROFILE :

PROP. LEVEL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
EXIST. LEVEL AT PRO. CL
EXIST. GROUND @ RHS SHOULDER EDGE LVL
VER. TANGENT POINT

DEMWE

BRAHMAKUND

DESIGN DIRECTOR

Shambhavi Techno Solutions Pvt. Ltd.
Managing Director

SUVADRA CONSULTANTS Regd. No- 111/2004-05 BHUBANESWAR

PROPOSED ROAD
EXISTING LEVEL AT PROP. CL
EXIST. GROUND @ RHS SHOULDER EDEG
EXIST. GROUND @ LHS SHOULDER EDEG

Chainage=18581.510m
Level=578.998m

Chainage=18731.510m
Level=571.977m

BOX CULVERT , (1x2m x2m)
CHAINAGE=18754m

BOX CULVERT , (1x3m x3m)
CHAINAGE=18896m

Chainage=18911.350m
Level=566.733m

END- 18.960

Level Datum(M) = 540

FINISHED ROAD LEVELS (M)	581.531 581.220 580.910 580.599 580.288 579.977 579.667 579.356 579.045 578.727 578.388 578.028 577.647 577.245 576.822 576.378 575.913 575.427 574.920 574.392 573.844 573.274 572.683 572.071 571.446 570.821 570.195 569.570 568.945 568.319 567.694 567.068 566.443 565.818 565.192 564.567 563.941 563.316 562.691 562.065 561.440 560.814 560.199 559.609 559.045 558.508 557.996
EXIST LEVELS AT PROP. CL (M)	581.092 584.135 589.584 585.777 581.752 581.800 579.846 579.858 579.385 581.123 577.687 577.760 577.003 577.459 576.915 576.458 576.027 573.046 572.866 574.050 572.485 575.358 574.986 573.721 571.375 570.742 570.452 578.417 582.090 578.319 576.104 574.558 566.563 566.051 565.522 567.884 564.808 563.855 563.217 562.715 561.882 560.409 559.672 559.078 558.517 557.925 557.416
EXISTING GROUND AT LHS SHOULDER EDGE LVL (M)	583.024 584.189 585.914 589.108 586.164 587.577 585.593 587.039 586.898 588.506 581.386 580.730 580.035 580.164 582.706 582.117 579.936 578.688 578.533 581.852 576.498 581.182 582.147 581.236 573.822 570.461 575.087 579.517 582.216 578.586 584.740 589.157 580.617 570.574 571.260 572.622 572.823 579.834 567.537 562.310 561.433 561.550 565.538 565.175 563.662 568.168 561.132
EXISTING GROUND AT RHS SHOULDER EDGE LVL (M)	581.014 580.857 580.635 580.291 580.123 580.037 579.727 579.337 578.769 578.264 577.851 577.437 576.976 576.637 576.418 576.172 575.825 575.397 575.161 574.507 573.662 572.933 572.336 571.823 570.582 569.780 570.345 573.100 581.492 577.956 568.267 567.272 566.580 564.560 564.978 565.243 564.722 564.171 563.212 560.753 559.467 558.973 559.824 559.304 558.544 557.487 557.099
HORIZONTAL SCHEMATIC (M)	L=15.000m; L=19.901m, R=−70.000m; L=15.000m; L=14.125m; L=15.000m; R; L; L=15.000m; L=9.540m, R; L=15.000m; L=53.280m; L=15.000m; R; L; L=15.000m; L=13.797m; L=30.000m; R=30.000m; L=11.819m; L=30.000m; L; L=25.000m; L; R; L=25.000m; L=24.918m; L=30.000m; R=30.000m; L=16.188m; L=30.000m
VERTICAL (G=%) SCHEMATIC (L=m),(R=M)	G=−3.107; L=382.060m; R=−4767.246m; L=150.000m; G=−6.254; L=179.840m; R=3831.034m; L=100.000m
WIDENING SCHEMATIC (M) L R	4.400 3.500 3.500 4.100 4.100 3.500 3.500 4.400 4.400 3.500 3.500 5.000 5.000 3.500 3.500 3.500 3.500 4.700 4.700 3.500 3.500 5.000 5.000 4.400
SUPERELEVATION SCHEMATIC (e=%) L R	e=3.800 e=4.400 e=2.500 e=7.000 e=7.000 e=2.500 e=5.7
CHAINAGE (M)	18500 18510 18520 18530 18540 18550 18560 18570 18580 18590 18600 18610 18620 18630 18640 18650 18660 18670 18680 18690 18700 18710 18720 18730 18740 18750 18760 18770 18780 18790 18800 18810 18820 18830 18840 18850 18860 18870 18880 18890 18900 18910 18920 18930 18940 18950 18960

Rev.	Date	Description
R4	SEP.-2022	As Per Site Condition

Client : NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
3rd Floor, PTI Building,4-Parliament Street, New Delhi-110001

Authority Engineer : **Glabal Infra Solutions**
E-8/11A,F-2, Global Tower , Trilanga Main Road , Akashganga Colony, Shahpura, Bhopal (462039)
Tel.-0755-4045216

EPC Contractor : **Valecha Engineering Ltd**
Valecha Chambers, 4th Floor, Plot No B-6, New Link Road, Andheri West, Mumbai - 400053

Safety Consultant : SUVADRA CONSULTANTS (An ISO 9001 : 2008 Certified) (Soil Testing Laboratory & Engineering Consultant) Approved By Govt. of Orissa Regd. No. 11 of 2004-05
PP-97, Tankapani Road, BBSR-18, Odisha

Proof Consultant : SHAMBHAVI TECHNO SOLUTIONS PVT.LTD.
E-82, Rajesh Kumar Path, S.k.Puri, Boring Road, Patna-800001

Design Consultant : **SPS Technocrats Pvt. Ltd.**
638 & 641, Sixth Floor, JMD Megapolis, Sector 48, Gurgaon, Haryana 122018

Project: **DEMWE - BRAHMKUND (NH-13)**
CONSTRUCTION OF TWO LANING WITH HARD SHOULDERS OF DEMWE - BRAHMKUND SECTION OF NH-13 FROM CH. 0.000 TO CH 18.464 IN THE STATE OF ARUNACHAL PRADESH ON EPC MODE UNDER NH(O)-NE

Drawn	PRADEEP
Designed	KRISHNA
Checked	YOGESH
Date:	SEP.-2022

Title: **PLAN & LONGITUDINAL PROFILE** *(From Km 18+500 to Km 19+000)*

Scale: (Hor - 1 : 1000, Ver - 1 : 500 at A2 Size Sheet) Hor: 10 0 10 20 Ver: 1 0 1 2

Rev: **R4**

Drg. No: **VLE/DE-BR/HW/PNP/36A**