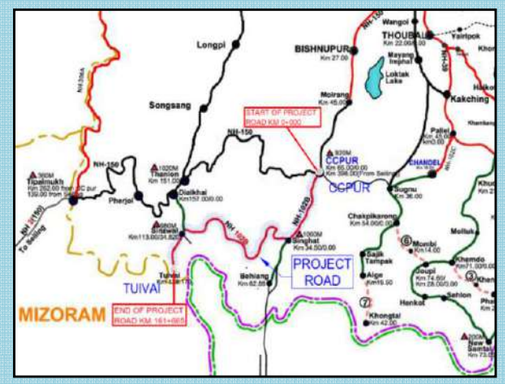
Consultancy Services for Carrying out Feasibility Study, Preparation of Detailed Project Report and providing pre-construction services in respect of 2 laning of Churachandpur – Tuivai road Section(length = 162 km) on NH-102B (Manipur) on Engineering, Procurement and Construction mode in the state of Manipur. (Package No. NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

Package – IVB
Design Ch. Km-130.000 to Km-141.029
Survey Ch. Km-149.630 to Km-161.440

Final Detailed Project Report

Volume IX – Drawing Volume
Part A : Road Works
Part B : Structural Works







National Highways & Infrastructure Development Corporation Ltd.
PTI Building, 3rd Floor, 4, Parliament Street, New Delhi-110001

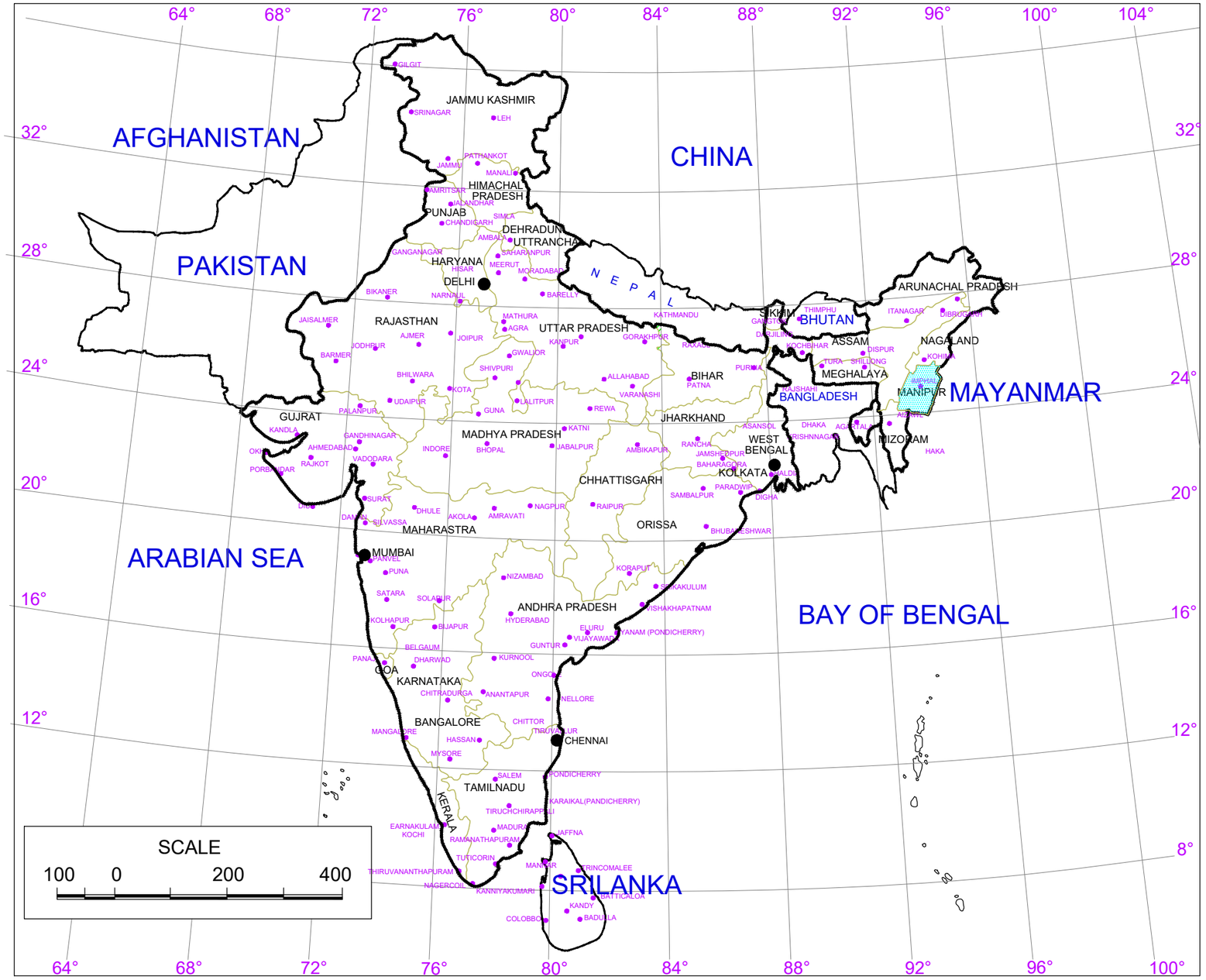
C. E. Testing Company Pvt. Ltd.
124-A, NSC Bose Road, Kolkata -92

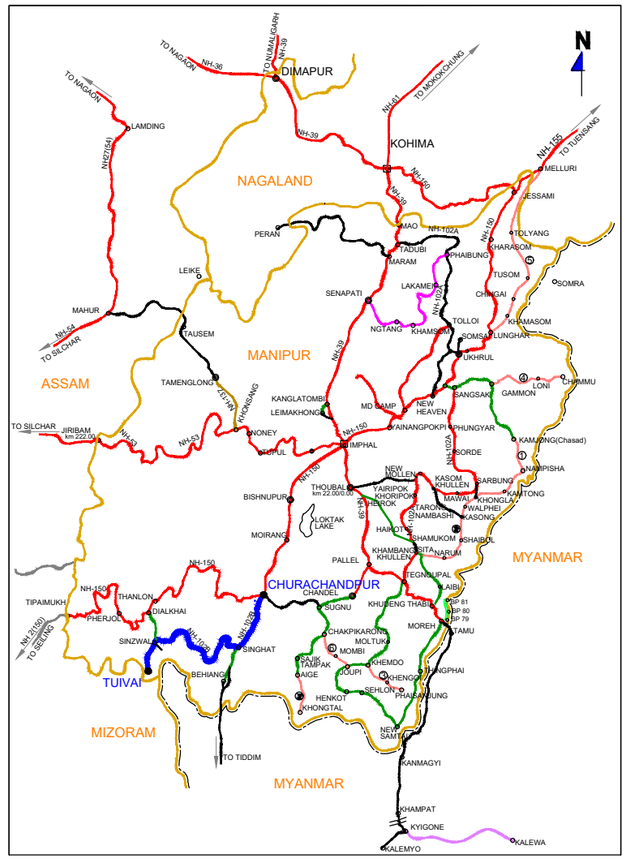
CET/4047/NHIDCL/NH-102B/FDPR **Rev: R0** **December, 2019**

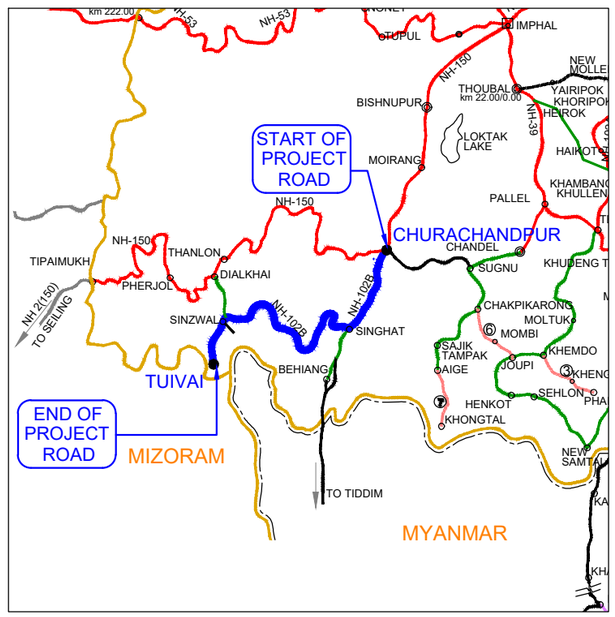
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02	KEY PLAN	CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/KP	01
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11	GENERAL ARRANGEMENT DRAWING OF BRIDGE		

LOCATION PLAN







LOCATION MAP

					Scale :- N.T.S	CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building,3rd Floor, 4 Parliament Street, New Delhi - 110001	LOCATION PLAN
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.	DATE: DECEMBER, 2019	PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)	SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT
REVISIONS							PACKAGE - IVB

CONSULTANT : CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092.

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/LP			
REVISION MKD. - R0		SHEET NO. - 01 OF 01	
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

KEY PLAN

MAYANMAR

INDO-MYANMAR BORDER

MANIPUR

MIZORAM

KAILAM WILDLIFE SANCTUARY AREA

ESZ AREA

KAILAM WILDLIFE SANCTUARY AREA

END OF PACKAGE-IVA
SURVEY CH:-149+630
DESIGN CH:-130+000

TUIVAI RIVER

END OF PACKAGE-IVB
SURVEY CH:-161+440
DESIGN CH:-141+029

SINZAWL VILLAGE

TUIVAI VILLAGE

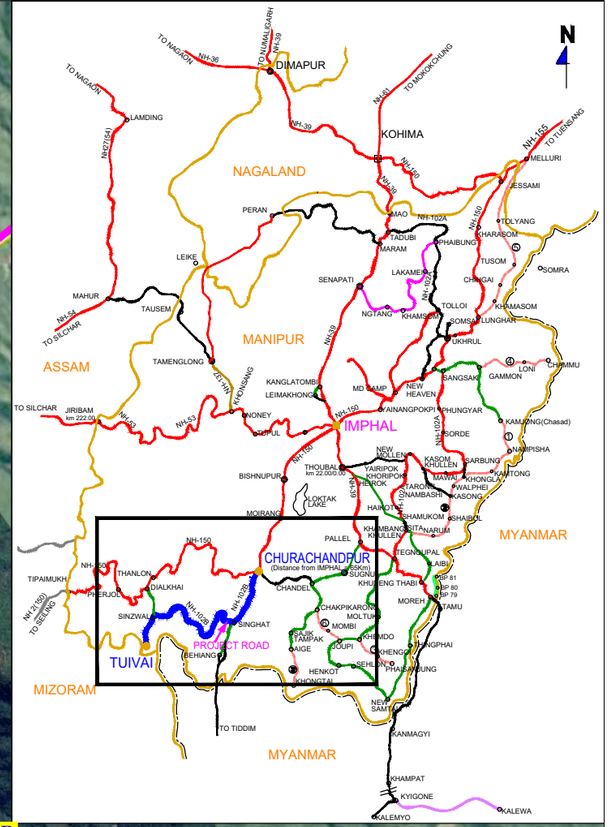
KAILAM WILDLIFE SANCTUARY AREA (ESZ AREA)

PROJECT ROAD

START OF PACKAGE-IVB
SURVEY CH:-149+630
DESIGN CH:-130+000

TERMINATING POINT AT TUIVAI
SURVEY CH:-161+445
DESIGN CH:-141+029

MIZORAM



LEGEND

- INTERNATIONAL BOUNDARY
- STATE BOUNDARY
- PROJECT ROAD
- EXISTING ROAD
- BUILT-UP AREA
- RIVER
- DESIGN CHAINAGE 0.000
- SURVEY CHAINAGE 0.000

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.	
REVISIONS					

Scale :- N.T.S

DATE: DECERBER, 2019

NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

KEY PLAN

SUBMISSION TYPE :

FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

CONSULTANT :

CETEST Engineering Consultants
An ISO 9001, 14001 & OHSAS 18001 Certified Company

CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road,
Kolkata - 700092.

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/KP

REVISION MKD. - R0 | SHEET NO. - 01

DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

LIST OF CONTROL PILLAR

TBM PILLAR LIST

TBM No.	Easting (m)	Northing (m)	R.L. (m)	Remarks
TBM–D20	570740.731	2692143.998	830.928	On the top of Slab
TBM–D19	570737.350	2692136.304	831.005	On the top of Slab
TBM–D21	570510.971	2691498.247	834.177	On the top of parapet
TBM–D22	570511.699	2691499.928	834.182	On the top of parapet
TBM–D24	570451.516	2691299.742	836.956	On the top of parapet
TBM–D23	570440.414	2691302.817	836.943	On the top of parapet
TBM–D37	570248.466	2690730.614	841.347	On the top of parapet
TBM–D38	570238.203	2690734.877	841.396	On the top of parapet
TBM–D7	570078.244	2689969.548	830.822	On the top of parapet
TBM–D8	570066.729	2689973.600	830.793	On the top of parapet
TBM–D5	569995.124	2689703.559	820.065	On the top of parapet
TBM–D6	569984.502	2689704.203	820.152	On the top of parapet
TBM–D4	570015.203	2689174.855	819.258	On the top of parapet
TBM–D3	570023.791	2689171.975	819.167	On the top of parapet
TBM–D2	569258.348	2687983.726	821.222	On the top of Slab
TBM–D1	569250.014	2687987.056	821.144	On the top of Slab
TBM–D35	569062.494	2687451.410	822.858	On the top of parapet
TBM–D36	569053.065	2687450.250	822.820	On the top of parapet
TBM–D9	568664.110	2687059.567	829.336	On the top of parapet
TBM–D10	568666.182	2687060.176	829.351	On the top of parapet
TBM–D11	568363.521	2686640.961	833.441	On the top of parapet
TBM–D12	568377.252	2686643.826	833.410	On the top of parapet
TBM–D13	568231.221	2686501.941	835.228	On the top of parapet
TBM–D14	568231.326	2686508.804	835.215	On the top of parapet
TBM–D15	567965.687	2686370.272	838.866	On the top of parapet
TBM–D16	567961.762	2686375.942	838.859	On the top of parapet
TBM–R2	567760.643	2685477.078	897.034	On the plinth level of waiting shed
TBM–R1	567760.344	2685474.949	897.049	On the plinth level of waiting shed
TBM–R4	567704.327	2685394.886	893.211	On the top of parapet
TBM–R3	567714.559	2685390.106	892.992	On the top of parapet
TBM–R6	567688.998	2685099.514	876.915	On the top of concrete structrue
TBM–R5	567676.868	2685087.598	876.760	On the top of concrete structrue
TBM–D18	567524.151	2685160.788	863.192	On the top of parapet
TBM–D17	567530.300	2685155.706	863.176	On the top of parapet
TBM–D25	567310.393	2684697.252	860.707	On the top of parapet
TBM–D26	567316.442	2684687.547	860.615	On the top of parapet
TBM–D27	567162.160	2684236.180	868.630	On the top of parapet
TBM–D28	567163.194	2684238.061	868.716	On the top of parapet
TBM–D29	566919.978	2683196.744	868.691	On the plinth level of waiting shed
TBM–D30	566921.138	2683198.506	868.704	On the plinth level of waiting shed
TBM–D31	566839.050	2682883.399	879.351	On the top of parapet
TBM–D32	566846.950	2682883.766	879.195	On the top of parapet
TBM–R7	566881.904	2682354.332	868.549	On the top of slab
TBM–R8	566887.125	2682348.977	868.532	On the top of slab
TBM–D33	566926.386	2682090.729	859.178	On the top of parapet
TBM–D34	566918.328	2682093.525	859.213	On the top of parapet
TBM–D39	566812.525	2681831.532	859.479	On the top of slab
TBM–D40	566819.949	2681829.371	859.535	On the top of slab
TBM–D41	566576.999	2681469.775	868.007	On the top of parapet
TBM–D42	566582.062	2681463.768	867.923	On the top of parapet
TBM–R14	566327.982	2680903.603	862.788	On the top of parapet
TBM–R13	566334.434	2680907.247	862.761	On the top of parapet
TBM–R12	566280.505	2680474.597	869.166	On the top of parapet
TBM–R11	566288.148	2680473.300	869.012	On the top of parapet
TBM–R9	566435.896	2680364.781	861.260	On the plinth level of waiting shed
TBM–R10	566437.008	2680367.675	861.261	On the plinth level of waiting shed
TBM–D44	566208.273	2680229.946	868.919	On the top of parapet
TBM–D43	566201.368	2680236.856	869.010	On the top of parapet
TBM–D45	566330.763	2679998.446	861.120	On the top of parapet
TBM–D46	566338.342	2680001.764	861.134	On the top of parapet
TBM–D47	566359.815	2679772.769	878.539	On the plinth level of waiting shed
TBM–D48	566361.108	2679774.020	878.539	On the plinth level of waiting shed
TBM–D49	566022.086	2679771.267	871.019	On the top of parapet
TBM–D50	566014.858	2679774.269	871.092	On the top of parapet
TBM–D51	565992.980	2679518.343	877.474	On the top of parapet
TBM–D52	566000.909	2679518.298	877.460	On the top of parapet
TBM–R16	565852.681	2679104.104	892.790	On the top of parapet
TBM–R15	565846.176	2679107.780	892.966	On the top of parapet
TBM–R18	565878.253	2678802.228	900.344	On the top of parapet
TBM–R17	565867.765	2678807.463	900.320	On the top of parapet
TBM–R19	566418.620	2678235.316	882.544	On the top of parapet
TBM–R20	566418.171	2678226.673	882.788	On the top of parapet
TBM–D55	566596.418	2677896.572	863.298	On the top of parapet
TBM–D56	566595.975	2677904.347	863.293	On the top of parapet
TBM–D53	566169.511	2677961.273	858.057	On the top of parapet
TBM–D54	566161.997	2677964.179	858.036	On the top of parapet

TBM PILLAR LIST

TBM No.	Easting (m)	Northing (m)	R.L. (m)	Remarks
TBM–D61	565225.564	2677732.422	869.813	On the top of parapet
TBM–D62	565229.635	2677725.574	869.795	On the top of parapet
TBM–D60	564754.013	2677412.197	912.126	On the top of parapet
TBM–D59	564761.825	2677414.786	912.153	On the top of parapet
TBM–D58	564501.184	2677365.599	939.469	On the top of parapet
TBM–D57	564499.227	2677377.035	939.675	On the top of parapet
TBM–D65	564395.943	2677099.229	956.614	On the top of parapet
TBM–D66	564387.820	2677099.998	956.621	On the top of parapet
TBM–D63	564195.670	2676620.411	1000.631	On the top of parapet
TBM–D64	564188.092	2676620.353	1000.547	On the top of parapet
TBM–D67	564033.708	2675905.963	986.242	On the plinth level of waiting shed
TBM–D68	564030.994	2675903.129	986.236	On the plinth level of waiting shed
TBM–D70	563027.645	2673537.708	979.131	On the top of parapet
TBM–D69	563030.250	2673527.808	979.129	On the top of parapet
TBM–D71	562822.782	2673294.365	982.999	On the plinth level of waiting shed
TBM–D72	562821.672	2673292.152	982.993	On the plinth level of waiting shed
TBM–R20	562661.427	2672325.237	1005.840	On the top of slab
TBM–R19	562656.389	2672330.716	1006.200	On the top of parapet
TBM–D78	562512.763	2672189.568	997.597	On the base level of memorial structrue
TBM–D77	562513.526	2672190.411	997.596	On the base level of memorial structrue
TBM–D80	562276.125	2672082.254	996.022	On the top of parapet
TBM–D79	562273.262	2672089.827	995.901	On the top of parapet
TBM–D181	562062.303	2671968.280	982.756	On the top of parapet
TBM–D182	562057.619	2671973.994	982.492	On the top of parapet
TBM–D84	561485.942	2671544.102	950.291	On the top of parapet
TBM–D83	561489.358	2671536.662	950.218	On the top of parapet
TBM–R31	561433.156	2671407.615	959.256	On the top of parapet
TBM–R32	561432.239	2671406.985	959.256	On the top of parapet
TBM–R30	561167.730	2671403.803	998.365	On the top of parapet
TBM–R29	561164.374	2671393.582	998.269	On the top of parapet
TBM–R28	560902.395	2671395.465	1006.968	On the top of parapet
TBM–R27	560901.004	2671395.931	1006.999	On the top of parapet
TBM–R26	560707.195	2671393.072	1016.589	On the top of parapet
TBM–R25	560706.024	2671393.629	1016.580	On the top of parapet
TBM–D86	560540.191	2671392.046	1037.007	On the top of parapet
TBM–D85	560542.968	2671381.863	1036.697	On the top of parapet
TBM–D88	560356.350	2671305.653	1056.162	On the top of parapet
TBM–D87	560359.956	2671296.544	1056.091	On the top of parapet
TBM–D90	560323.873	2671088.808	1062.147	On the top of parapet
TBM–D89	560333.474	2671088.803	1062.066	On the top of parapet
TBM–R35	559942.916	2670359.547	1020.227	On the top of foundation stone
TBM–R36	559942.425	2670358.218	1020.208	On the top of foundation stone
TBM–R33	559719.603	2670593.622	1009.745	On the top of guard wall
TBM–R34	559717.211	2670594.752	1009.708	On the top of guard wall
TBM–R22	559495.175	2670628.342	1002.044	On the top of parapet
TBM–R21	559495.034	2670620.293	1001.994	On the top of parapet
TBM–D75	558439.427	2670493.032	956.518	On the top of parapet
TBM–D76	558432.048	2670496.275	956.441	On the top of parapet
TBM–D73	557779.247	2670698.428	876.712	On the top of parapet
TBM–D74	557772.106	2670695.819	876.611	On the top of parapet
TBM–23	557907.488	2671501.696	799.487	On the top of parapet
TBM–24	557909.037	2671500.295	799.074	On the top of parapet
TBM–D92	558062.279	2671878.639	733.502	On the top of parapet
TBM–D91	558059.186	2671870.628	733.418	On the top of parapet
TBM–R38	557190.527	2672000.542	670.333	On the top of parapet
TBM–R37	557194.224	2671991.156	670.651	On the top of parapet
TBM–D94	556770.764	2671430.512	641.917	On the top of parapet
TBM–D93	556776.941	2671424.735	642.301	On the top of slab
TBM–R42	556588.048	2670807.288	629.122	On the top of guard wall
TBM–R41	556604.556	2670793.241	628.674	On the top of guard wall
TBM–R39	556700.355	2670553.913	620.478	On the top of parapet
TBM–R40	556700.067	2670551.936	620.471	On the top of parapet
TBM–D96	556397.609	2670428.724	609.402	On the top of parapet
TBM–D95	556396.493	2670420.491	609.283	On the top of parapet
TBM–D98	555446.187	2670071.458	623.080	On the top of parapet
TBM–D97	555444.791	2670078.611	623.189	On the top of parapet
TBM–R68	554651.608	2669459.120	595.403	On the top of concrete structrue
TBM–R67	554656.665	2669414.675	595.457	On the top of concrete structrue
TBM–R45	554361.841	2668901.873	605.388	On the top of parapet
TBM–R46	554366.679	2668895.521	605.384	On the top of parapet
TBM–R43	554280.223	2668485.588	603.830	On the top of parapet
TBM–R44	554287.941	2668483.711	603.752	On the top of parapet
TBM–R47	554102.432	2668031.065	605.821	On the top of parapet
TBM–R48	554109.116	2668027.785	605.760	On the top of parapet
TBM–R49	553489.881	2667353.580	614.798	On the top of parapet
TBM–R50	553497.066	2667351.360	614.804	On the top of parapet

TBM PILLAR LIST

TBM No.	Easting (m)	Northing (m)	R.L. (m)	Remarks
TBM–D123	553382.656	2666882.222	619.706	On the top of parapet
TBM–D124	553384.605	2666886.767	619.706	On the top of parapet
TBM–D100	553280.892	2666543.708	651.198	On the top of slab
TBM–D99	553284.067	2666537.176	651.565	On the top of parapet
TBM–D101	552697.148	2666275.722	738.908	On the top of parapet
TBM–D102	552700.901	2666268.638	738.394	On the top of parapet
TBM–D103	552118.103	2665907.425	805.968	On the top of parapet
TBM–D104	552124.576	2665908.389	805.642	On the top of parapet
TBM–D105	552317.041	2665589.754	825.112	On the top of parapet
TBM–D106	552322.908	2665594.291	825.160	On the top of parapet
TBM–D107	551985.183	2665368.718	871.108	On the top of parapet
TBM–D108	551980.517	2665374.141	871.114	On the top of parapet
TBM–R54	551908.535	2665176.264	883.983	On the top of parapet
TBM–R53	551908.765	2665175.064	884.005	On the top of parapet
TBM–R51	551407.823	2664958.982	919.724	On the top of parapet
TBM–R52	551407.917	2664957.726	919.727	On the top of parapet
TBM–R56	551295.023	2664997.281	944.644	On the top of parapet
TBM–R55	551287.344	2664992.788	944.680	On the top of parapet
TBM–R58	551067.763	2665272.145	970.134	On the top of parapet
TBM–R57	551068.733	2665264.958	970.068	On the top of parapet
TBM–R59	550395.551	2666448.721	1073.100	On the top of parapet
TBM–R60	550388.843	2666446.319	1073.111	On the top of parapet
TBM–D109	549706.504	2665812.980	1051.981	On the top of parapet
TBM–D110	549705.464	2665821.280	1051.991	On the top of parapet
TBM–R61	549125.150	2665221.326	981.204	On the top of parapet
TBM–R62	549130.271	2665216.419	981.197	On the top of parapet
TBM–D111	548949.402	2663995.023	970.112	On the top of parapet
TBM–D112	548957.167	2663997.643	969.864	On the top of parapet
TBM–D113	548879.507	2663761.147	967.289	On the plinth level of waiting shed
TBM–D114	548878.103	2663761.134	967.288	On the plinth level of waiting shed
TBM–D115	548585.658	2665458.594	841.613	On the top of guard wall
TBM–D116	548583.960	2665456.838	841.632	On the top of guard wall
TBM–R63	548741.563	2666475.614	790.140	On the top of guard wall
TBM–R64	548732.948	2666475.110	790.343	On the top of guard wall
TBM–2	548443.149	2666938.461	749.194	On the top of foundation stone
TBM–1	548488.904	2666940.242	750.623	On the top of foundation stone
TBM–R66	548372.957	2667153.844	755.708	On the top of parapet
TBM–R65	548368.636	2667147.296	756.218	On the top of parapet
TBM–D122	548498.246	2667818.491	789.568	On the top of guard wall
TBM–D123	548498.812	2667814.812	790.254	On the top of guard wall
TBM–D119	548347.389	2668174.371	812.956	On the top of parapet
TBM–D120	548341.852	2668167.757	813.061	On the top of parapet
TBM–D117	548416.086	2668290.458	818.893	On the top of slab
TBM–D118	548409.232	2668293.521	819.376	On the top of parapet
TBM–J/19	548510.398	2668382.028	820.548	
TBM–J/20	548406.253	2668508.147	827.420	On the top of parapet
TBM–J/21	548331.986	2668534.138	826.286	
TBM–J/22	548136.306	2668488.807	821.435	On the top of parapet
TBM–J/23	548132.908	2668495.188	821.355	On the top of parapet
TBM–J/24	547924.205	2668606.172	813.701	
TBM–J/25	547799.787	2668598.660	809.890	On the top of parapet
TBM–J/26	547693.895	2668608.822	805.765	On the top of parapet
TBM–S/10	548044.297	2668819.157	788.997	On the top of parapet
TBM–S/11	548042.996	2668827.212	788.923	On the top of parapet
TBM–S/12	548305.752	2668807.354	770.940	On the top of guard wall
TBM–S/13	548300.603	2668805.831	771.016	On the top of guard wall
TBM–S/15	548454.583	2668943.951	751.562	On the top of parapet
TBM–S/14	548460.226	2668948.431	751.453	On the top of parapet
TBM–S/34	547631.334	2669913.164	799.681	On the top of ground water tank
TBM–S/35	548203.631	2669194.457	723.014	On the top of parapet
TBM–S/36	548055.169	2669579.036	736.892	On the top of parapet
TBM–S/37	548061.484	2669582.772	736.792	On the top of parapet
TBM–J/35	547796.498	2669911.063	759.346	On the top of parapet
TBM–J/33	547623.063	2669910.807	800.235	On the top of parapet
TBM–S/34	548235.807	2669309.517	727.383	On the top of parapet
TBM–S/32	547724.758	2669832.779	841.160	On the top of retaining wall
TBM–S/33	547726.790	2669832.113	841.008	On the top of retaining wall
TBM–S/30	547472.663	2669933.979	865.380	On the top of retaining wall
TBM–S/31	547471.265	2669932.762	865.245	On the top of retaining wall
TBM–S/28	547362.304	2670162.272	934.430	On the top of parapet
TBM–S/29	547354.490	2670166.635	933.726	On the top of parapet
TBM–S/26	547270.758	2669867.904	951.727	On the top of parapet
TBM–S/27	547265.451	2669872.970	951.649	On the top of parapet
TBM–S/20	547119.278	2669937.297	957.645	On the top of parapet
TBM–S/21	547129.438	2669952.509	958.070	On the top of guard wall
TBM–S/22	547083.122	2670094.381	965.881	On the 11 kV electric post

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: DECEMBER, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

LIST OF CONTROL PILLAR

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

CONSULTANT : CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road,
Kolkata - 700092.

CETEST Engineering Consultants — An ISO 9001, 14001 & OHSAS18001 Certified Company

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/PILLAR

REVISION MKD. - R0 | SHEET NO. - 01 OF 10

DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

TBM PILLAR LIST

TBM No.	Easting (m)	Northing (m)	R.L. (m)	Remarks
TBM–S/25	546933.311	2670051.616	973.358	On the top of parapet
TBM–S/24	546910.093	2670057.585	973.919	On the top of guard wall
TBM–S/23	546898.449	2670058.275	974.480	On the top of parapet
TBM–S/19	546868.177	2670349.096	998.873	On the top of parapet
TBM–S/18	546887.710	2670373.982	1000.583	On the top of retaining wall
TBM–S/16	546664.814	2670637.078	1033.561	On the top of parapet
TBM–S/17	546669.677	2670631.735	1033.659	On the top of parapet
TBM–J/06	546141.358	2670158.782	1079.021	On the top of parapet
TBM–J/05	546134.486	2670157.852	1079.093	On the top of parapet
TBM–J/04	546052.138	2670253.236	1076.784	On the top of memorial structre
TBM–J/03	545779.896	2670313.438	1066.540	On the top of parapet
TBM–J/18	545778.801	2670305.428	1066.929	On the top of parapet
TBM–J/01	545633.266	2670402.232	1062.065	
TBM–J/18	545374.681	2670271.244	1051.376	On the top of parapet
TBM–J/16	545104.673	2670390.078	1038.350	On the top of parapet
TBM–J/17	545098.495	2670384.789	1038.680	On the top of parapet
TBM–J/14	545074.178	2670447.453	1037.354	On the top of parapet
TBM–J/15	545065.471	2670447.853	1036.363	On the top of parapet
TBM–J/12	545006.787	2670680.765	1034.170	On the top of parapet
TBM–J/13	545000.995	2670676.650	1034.405	On the top of parapet
TBM–J/11	544937.857	2670955.899	1023.209	On the top of parapet
TBM–J/10	544932.201	2670950.135	1023.354	On the top of parapet
TBM–J/8	544851.866	2670958.490	1019.140	On the top of guard wall
TBM–J/9	544849.761	2670952.227	1019.080	On the top of guard wall
TBM–J/7	544824.515	2670401.130	996.678	On the top of parapet
TBM–S/4	544809.044	2670236.993	984.802	On the top of memorial structre
TBM–S/5	544815.791	2670217.023	983.957	On the top of parapet
TBM–S/3	544692.656	2670073.095	973.663	On the top of memorial structre
TBM–S/2	544515.401	2669955.951	953.686	On the top of parapet
TBM–S/1	544382.371	2669971.888	946.054	On the 11 kV electric post
TBM–S/6	542781.089	2669325.935	761.513	On the top of guard wall
TBM–S/7	542850.760	2669321.004	758.156	On the top of guard wall
TBM–S/8	543036.301	2669277.587	751.195	On the top of parapet
TBM–S/9	543028.151	2669279.239	750.954	On the top of parapet
TBM–J/32	542163.600	2668881.665	687.285	On the top of parapet
TBM–J/30	542052.966	2668893.562	689.490	On the top of parapet
TBM–J/31	542044.799	2668895.494	689.460	On the top of parapet
TBM–J/29	541998.792	2669039.709	698.630	On the top of guard wall
TBM–J/28	541992.011	2669043.428	699.060	On the top of guard wall
TBM–J/27	541861.068	2669114.488	704.414	On the top of guard wall
TBM–J/37	541997.558	2669450.509	729.210	On the top of guard wall
TBM–J/36	541999.746	2669445.181	728.885	On the top of guard wall
TBM–J/39	541948.508	2669728.149	751.935	On the top of parapet
TBM–J/38	541940.597	2669729.372	752.355	On the top of parapet
TBM–J/41	541837.709	2669719.006	759.444	On the top of guard wall
TBM–J/40	541831.316	2669716.677	759.560	On the top of parapet
TBM–J/42	541633.124	2669778.793	774.723	On the top of parapet
TBM–J/43	541639.469	2669783.580	774.485	On the top of parapet
TBM–S/43	541649.864	2669887.814	780.938	On the top of parapet
TBM–S/42	541643.835	2669884.529	780.994	On the top of parapet
TBM–S/41	541529.328	2670082.041	794.550	On the top of guard wall
TBM–S/40	541494.304	2670079.798	796.973	On the top of guard wall
TBM–S/38	541143.938	2670312.168	823.994	On the top of parapet
TBM–S/39	541150.707	2670316.923	823.843	On the top of parapet
TBM–J/44	541072.510	2670454.279	833.562	On the top of parapet
TBM–J/45	541080.668	2670454.002	833.557	On the top of parapet
TBM–J/47	541103.873	2670525.307	836.840	On the top of parapet
TBM–J/46	541097.997	2670531.202	836.874	On the top of parapet
TBM–J/48	541328.616	2670468.058	851.070	On the top of parapet
TBM–J/49	541498.895	2670424.921	863.245	On the top of parapet
TBM–J/50	541504.592	2670418.964	863.230	On the top of parapet
TBM–S/44	540974.646	2670954.405	933.552	On the top of parapet
TBM–S/45	540966.489	2670953.960	933.363	On the top of parapet
TBM–J/51	540913.562	2671134.712	943.583	On the top of parapet
TBM–J/52	540905.998	2671137.780	943.567	On the top of parapet
TBM–J/53	540883.883	2671328.669	954.680	On the top of parapet
TBM–J/54	540891.286	2671325.101	954.195	On the top of parapet
TBM–J/56	540901.638	2671522.359	966.445	On the top of parapet
TBM–S/48	541024.813	2671994.997	996.036	On the top of parapet
TBM–S/49	541016.992	2671992.405	996.190	On the top of parapet
TBM–S/46	540904.250	2672086.876	1003.930	On the top of parapet
TBM–S/47	540900.019	2672079.998	1004.119	On the top of parapet
TBM–S/51	540628.377	2672155.437	1019.168	On the top of parapet
TBM–S/50	540622.999	2672161.533	1020.314	On the top of parapet
TBM–S/52	540398.376	2672265.022	1036.291	On the top of guard wall
TBM–S/53	540387.058	2672277.346	1036.852	On the top of parapet

TBM PILLAR LIST

TBM No.	Easting (m)	Northing (m)	R.L. (m)	Remarks
TBM–J/61	540457.531	2672420.397	1043.993	On the top of guard wall
TBM–J/60	540536.403	2672501.209	1050.967	On the top of parapet
TBM–J/59	540530.352	2672504.385	1051.094	On the top of parapet
TBM–J/58	540582.164	2672524.456	1052.819	On the top of guard wall
TBM–J/57	540606.199	2672560.261	1053.510	On the top of parapet
TBM–J/56	540778.020	2672756.149	1069.892	On the top of parapet
TBM–S/54	540467.478	2673038.819	1088.642	On the top of parapet
TBM–S/55	540475.063	2673038.596	1088.151	On the top of parapet
TBM–S/56	540455.637	2673251.481	1088.963	On the top of parapet
TBM–S/57	540454.367	2673256.706	1089.239	On the top of parapet
TBM–S/58	540550.621	2673435.389	1095.842	On the top of parapet
TBM–S/59	540548.940	2673432.289	1095.822	On the top of guard wall
TBM–J/66	540972.090	2673795.288	1110.156	On the top of parapet
TBM–J/65	541101.652	2673874.523	1114.910	On the top of parapet
TBM–J/64	541101.570	2673882.576	1115.065	On the top of parapet
TBM–J/63	540868.385	2674019.022	1121.625	On the top of parapet
TBM–J/62	540950.357	2674200.046	1121.579	On the top of parapet
TBM–J/67	540726.676	2674356.796	1124.563	On the top of parapet
TBM–J/68	540917.136	2674545.178	1126.645	On the top of parapet
TBM–J/69	541040.677	2674668.629	1128.615	On the top of parapet
TBM–J/70	540916.723	2674824.864	1146.065	On the top of parapet
TBM–J/71	540915.052	2674816.919	1146.290	On the top of parapet
TBM–J/72	540835.245	2674868.738	1150.635	On the plinth level of semi pucca hutment
TBM–J/73	540833.896	2674872.413	1150.630	On the plinth level of semi pucca hutment
TBM–J/74	540738.167	2674820.379	1153.955	On the top of parapet
TBM–J/75	540743.087	2674826.748	1153.834	On the top of parapet
TBM–S/63	540548.232	2674903.522	1159.643	On the top of parapet
TBM–S/62	540552.288	2674896.285	1159.708	On the top of parapet
TBM–S/60	540134.313	2674949.151	1173.465	On the top of parapet
TBM–S/61	540130.530	2674941.504	1173.466	On the top of parapet
TBM–S/64	539822.702	2675442.296	1196.713	On the top of guard wall
TBM–S/65	539818.693	2675444.125	1196.714	On the top of guard wall
TBM–S/66	539529.650	2675957.824	1214.771	On the top of parapet
TBM–S/67	539529.356	2675949.740	1214.728	On the top of parapet
TBM–J/78	539405.920	2675939.014	1220.924	On the top of parapet
TBM–J/77	539348.498	2675838.865	1219.295	On the top of parapet
TBM–J/76	539346.636	2675845.412	1219.150	On the top of parapet
TBM–J/79	539260.512	2675703.422	1213.860	On the top of parapet
TBM–J/80	539267.251	2675698.219	1213.480	On the top of parapet
TBM–J/81	539193.876	2675450.182	1203.342	On the top of ground water tank
TBM–J/82	539192.525	2675453.155	1203.001	On the top of parapet
TBM–J/83	539068.625	2675279.301	1193.270	On the top of parapet
TBM–J/84	538998.573	2675194.384	1190.925	On the top of ground water tank
TBM–J/85	538991.489	2675183.466	1190.582	On the top of parapet
TBM–S/73	539126.784	2674999.046	1184.618	On the top of guard wall
TBM–S/74	539127.548	2675004.298	1184.889	On the top of guard wall
TBM–S/71	539053.048	2674877.472	1177.561	On the top of parapet
TBM–S/72	539047.299	2674883.932	1177.708	On the top of guard wall
TBM–S/70	539145.584	2674551.369	1167.643	On the top of parapet
TBM–S/68	539130.452	2674531.292	1167.338	On the top of guard wall
TBM–S/69	539124.130	2674526.661	1167.277	On the top of guard wall
TBM–S/76	539253.480	2674285.963	1175.768	On the top of parapet
TBM–S/75	539246.032	2674281.981	1174.179	On the top of parapet
TBM–S/78	539381.270	2674058.157	1194.147	On the top of parapet
TBM–S/77	539389.589	2674057.434	1194.462	On the top of parapet
TBM–J/91	539347.713	2673844.035	1205.670	On the top of parapet
TBM–J/92	539338.030	2673819.079	1206.779	On the top of parapet
TBM–J/93	539273.729	2673609.229	1220.147	On the top of parapet
TBM–J/94	539281.450	2673608.482	1220.010	On the top of parapet
TBM–J/95	539255.305	2673559.714	1222.980	On the top of parapet
TBM–J/96	539261.204	2673554.411	1222.990	On the top of parapet
TBM–J/97	539216.464	2673492.143	1226.521	On the top of parapet
TBM–J/89	539206.916	2673390.685	1232.115	On the top of guard wall
TBM–J/90	539206.480	2673383.555	1232.610	On the top of guard wall
TBM–J/87	539213.371	2673179.432	1244.375	On the top of parapet
TBM–J/88	539206.059	2673182.348	1243.860	On the top of parapet
TBM–J/86	539206.583	2673096.085	1248.160	On the top of parapet
TBM–S/79	539211.113	2672857.063	1262.452	On the top of parapet
TBM–S/80	539204.271	2672862.650	1262.074	On the top of parapet
TBM–S/81	539104.270	2672798.851	1269.449	On the top of parapet
TBM–S/82	539102.383	2672807.037	1269.304	On the top of parapet
TBM–J/100	538834.019	2672989.498	1262.835	On the top of guard wall
TBM–J/98	538725.381	2673113.531	1255.834	On the top of guard wall
TBM–J/99	538734.583	2673102.833	1256.055	On the top of guard wall
TBM–J/101	538619.571	2673015.933	1249.635	On the top of parapet
TBM–J/102	538622.696	2673008.169	1250.144	On the top of parapet

TBM PILLAR LIST

TBM No.	Easting (m)	Northing (m)	R.L. (m)	Remarks
TBM–J/103	538452.624	2673101.465	1237.041	On the top of parapet
TBM–J/104	538455.573	2673093.548	1237.357	On the top of parapet
TBM–J/105	538444.506	2673292.787	1229.499	On the top of guard wall
TBM–J/106	538443.491	2673288.298	1229.830	On the top of guard wall
TBM–S/89	538364.111	2673588.052	1216.016	On the top of guard wall
TBM–S/90	538368.093	2673579.306	1216.691	On the top of guard wall
TBM–S/87	538273.829	2673655.078	1213.603	On the top of guard wall
TBM–S/88	538267.081	2673656.274	1213.687	On the top of parapet
TBM–S/85	538255.542	2673760.722	1209.311	On the top of guard wall
TBM–S/86	538247.943	2673752.891	1209.012	On the top of guard wall
TBM–S/83	538247.557	2674002.574	1193.395	On the top of guard wall
TBM–S/84	538258.466	2673998.253	1193.376	On the top of guard wall
TBM–C87	537978.530	2674381.371	1179.089	On the top of parapet
TBM–C88	537984.895	2674384.279	1179.178	On the top of parapet
TBM–C89	537763.998	2674257.558	1160.787	On the top of parapet
TBM–C90	537770.853	2674254.677	1160.840	On the top of parapet
TBM–B67	537848.943	2673983.627	1161.194	On the top of parapet
TBM–B68	537856.393	2673985.609	1161.375	On the top of parapet
TBM–B65	538025.031	2673676.071	1178.206	On the top of parapet
TBM–B66	538029.400	2673683.369	1178.397	On the top of parapet
TBM–B63	537959.770	2673290.109	1189.911	On the top of parapet
TBM–B64	537969.939	2673295.323	1190.296	On the top of parapet
TBM–B69	537791.507	2672926.624	1207.990	On the top of parapet
TBM–B70	537796.971	2672921.054	1208.107	On the top of parapet
TBM–B71	537603.124	2672569.627	1213.058	On the top of parapet
TBM–B72	537597.018	2672575.280	1212.916	On the top of parapet
TBM–C93	537319.402	2672240.764	1185.662	On the top of parapet
TBM–C94	537311.373	2672241.330	1185.240	On the top of parapet
TBM–C91	537123.449	2672489.590	1166.224	On the top of concrete structrue
TBM–C92	537122.770	2672468.973	1168.041	On the top of concrete structrue
TBM–C95	537361.942	2672686.808	1150.194	On the top of parapet
TBM–C96	537354.739	2672690.963	1149.969	On the top of parapet
TBM–C97	537368.196	2673070.725	1112.136	On the top of parapet
TBM–C98	537372.480	2673064.347	1112.119	On the top of parapet
TBM–C99	537142.560	2672880.430	1096.061	On the top of parapet
TBM–C100	537149.386	2672875.839	1096.546	On the top of parapet
TBM–C101	536624.510	2672755.280	1069.226	On the top of parapet
TBM–C102	536623.803	2672747.725	1069.060	On the top of parapet
TBM–B77	536479.594	2672784.333	1061.282	On the top of parapet
TBM–B78	536480.890	2672791.673	1061.272	On the top of parapet
TBM–B75	536225.130	2672792.060	1044.313	On the top of parapet
TBM–B76	536224.295	2672799.481	1044.153	On the top of parapet
TBM–B73	535938.113	2672752.390	1020.388	On the top of parapet
TBM–B74	535944.184	2672747.373	1020.325	On the top of parapet
TBM–B79	536041.293	2672535.872	1008.601	On the top of parapet
TBM–B80	536033.421	2672538.132	1008.489	On the top of parapet
TBM–B81	536012.802	2672282.876	995.637	On the top of parapet
TBM–B82	536020.196	2672284.479	995.489	On the top of parapet
TBM–C105	535835.796	2671914.009	975.859	On the top of parapet
TBM–C106	535839.097	2671907.226	975.807	On the top of parapet
TBM–C103	535817.294	2672516.111	933.175	On the top of parapet
TBM–C104	535810.255	2672516.375	932.973	On the top of parapet
TBM–C69	535746.271	2672521.288	912.540	On the top of parapet
TBM–C70	535737.980	2672520.279	912.124	On the top of parapet
TBM–C71	535649.336	2672293.199	888.910	On the top of parapet
TBM–C72	535648.081	2672300.296	888.802	On the top of parapet
TBM–B53	535433.552	2671995.090	866.426	On the top of parapet
TBM–B54	535428.524	2672000.966	866.303	On the top of parapet
TBM–B51	535223.994	2671468.565	825.760	On the top of parapet
TBM–B52	535231.907	2671468.805	826.699	On the top of parapet
TBM–B55	534482.795	2670846.574	765.026	On the top of parapet
TBM–B56	534476.273	2670852.049	764.583	On the top of parapet
TBM–C75	534385.984	2670481.709	731.966	On the top of parapet
TBM–C76	534380.039	2670477.286	731.625	On the top of parapet
TBM–C73	534232.684	2670334.107	721.654	On the top of parapet
TBM–C74	534225.731	2670335.718	721.625	On the top of parapet
TBM–C77	534293.120	2669964.009	676.069	On the top of parapet
TBM–C78	534300.241	2669957.821	676.023	On the top of parapet
TBM–B57	535528.333	2670192.792	626.154	On the top of parapet
TBM–B58	535534.016	2670191.745	626.017	On the top of parapet
TBM–B59	535564.913	2670371.962	611.204	On the top of parapet
TBM–B60	535574.356	2670392.450	610.353	On the top of guard wall
TBM–B61	535697.857	2670476.200	621.687	On the top of parapet
TBM–B62	535706.330	2670476.310	621.788	On the top of parapet
TBM–C85	535787.848	2670164.388	628.237	On the top of parapet
TBM–C86	535780.998	2670162.221	628.320	On the top of parapet

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: DECEMBER, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

LIST OF CONTROL PILLAR

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

CONSULTANT : CETEST Engineering Consultants — An ISO 9001, 14001 & OHSAS18001 Certified Company

CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092.

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/PILLAR

REVISION MKD. - R0 | SHEET NO. - 02 OF 10

DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

TBM PILLAR LIST

TBM No.	Easting (m)	Northing (m)	R.L. (m)	Remarks
TBM–C84	535942.838	2670013.605	633.780	On the top of parapet
TBM–C83	535972.664	2669979.991	634.614	On the top of parapet
TBM–C81	536204.589	2669633.895	610.803	On the top of parapet
TBM–C82	536200.209	2669626.533	610.683	On the top of parapet
TBM–C79	535914.206	2669761.956	620.826	On the top of parapet
TBM–C80	535910.638	2669754.615	621.045	On the top of parapet
TBM–C45	535790.487	2669711.102	618.564	On the top of parapet
TBM–C46	535796.920	2669706.674	618.676	On the top of parapet
TBM–C47	535494.042	2669198.758	623.378	On the top of safe guard
TBM–C48	535500.004	2669191.755	623.612	On the top of parapet
TBM–B35	535499.848	2668820.541	631.995	On the top of retaining wall
TBM–B36	535498.995	2668814.099	632.053	On the top of retaining wall
TBM–B33	535286.503	2669225.718	631.667	On the top of parapet
TBM–B34	535293.620	2669227.789	631.543	On the top of parapet
TBM–B38	535113.173	2669342.878	633.030	On the top of retaining wall
TBM–B37	535106.484	2669331.819	633.251	On the top of retaining wall
TBM–B39	534965.981	2669471.627	633.172	On the top of retaining wall
TBM–B40	534959.444	2669476.828	632.968	On the top of retaining wall
TBM–C51	534477.804	2669450.125	609.209	On the top of parapet
TBM–C52	534482.297	2669444.624	609.336	On the top of parapet
TBM–C49	533993.132	2669323.022	589.098	On the top of parapet
TBM–C50	533986.424	2669325.945	588.682	On the top of parapet
TBM–C53	533923.898	2669245.761	583.971	On the top of parapet
TBM–C54	533921.882	2669252.519	583.805	On the top of parapet
TBM–C55	533581.585	2668970.550	548.660	On the top of parapet
TBM–C56	533574.468	2668969.353	548.338	On the top of parapet
TBM–B45	533588.550	2668911.652	544.879	On the top of parapet
TBM–B46	533596.466	2668914.256	544.941	On the top of parapet
TBM–B43	533515.789	2668751.757	536.387	On the top of parapet
TBM–B44	533523.484	2668748.870	536.264	On the top of parapet
TBM–B41	533341.465	2668567.013	525.624	On the top of parapet
TBM–B42	533349.773	2668570.390	525.565	On the top of parapet
TBM–C57	533390.472	2668331.553	513.610	On the top of parapet
TBM–C58	533381.374	2668331.867	513.441	On the top of parapet
TBM–C59	533116.000	2668155.583	497.974	On the top of parapet
TBM–C60	533123.893	2668160.700	498.261	On the top of parapet
TBM–B47	533563.513	2667656.862	470.495	On the top of parapet
TBM–B48	533556.769	2667652.063	470.264	On the top of parapet
TBM–C61	533292.344	2667615.099	487.709	On the top of parapet
TBM–C62	533297.014	2667621.555	487.457	On the top of parapet
TBM–C63	533105.071	2667471.071	514.398	On the top of parapet
TBM–C64	533027.518	2667396.101	523.695	On the top of parapet
TBM–C65	532936.610	2667279.604	532.371	On the top of parapet
TBM–C66	532930.981	2667284.705	532.309	On the top of parapet
TBM–C67	532800.316	2667153.557	546.640	On the top of parapet
TBM–C68	532792.403	2667157.267	546.512	On the top of parapet
TBM–B49	532545.217	2666281.553	604.927	On the top of parapet
TBM–B50	532542.603	2666289.528	604.841	On the top of parapet
TBM–C6	532505.020	2666022.606	626.910	On the top of parapet
TBM–C7	532481.804	2665957.367	634.363	On the top of parapet
TBM–C8	532291.962	2665888.787	656.333	On the top of parapet
TBM–C10	532229.699	2665845.329	660.283	On the top of parapet
TBM–C9	532183.966	2665836.587	663.126	On the top of parapet
TBM–C12	531213.785	2665043.406	710.716	On the top of parapet
TBM–C11	531216.769	2665036.856	710.671	On the top of parapet
TBM–C13	530909.977	2664927.245	723.977	On the top of parapet
TBM–C14	530906.788	2664933.651	723.719	On the top of parapet
TBM–C15	530687.321	2664983.069	716.518	On the top of parapet
TBM–C16	530695.498	2664982.604	716.640	On the top of parapet
TBM–C17	530901.665	2665256.141	731.349	On the top of parapet
TBM–C18	530909.182	2665252.345	730.718	On the top of parapet
TBM–C19	530849.612	2665362.734	738.471	On the top of retaining wall
TBM–C20	530834.049	2665363.659	740.011	On the top of parapet
TBM–B12	530857.998	2665294.921	759.070	On the top of parapet
TBM–B11	530865.242	2665295.708	759.008	On the top of parapet
TBM–B10	530418.170	2665427.838	786.893	On the top of parapet
TBM–B9	530422.280	2665418.836	787.006	On the top of retaining wall
TBM–B8	530344.372	2665179.567	808.802	On the top of parapet
TBM–B7	530348.051	2665160.193	809.701	On the top of retaining wall
TBM–B6	530104.492	2664899.667	840.893	On the top of parapet
TBM–B5	530111.551	2664898.741	840.851	On the top of parapet
TBM–B4	530545.179	2664411.222	892.457	On the top of parapet
TBM–B3	530495.429	2664411.192	894.562	On the top of parapet
TBM–C5	530215.292	2664626.816	898.816	On the top of concrete structrue
TBM–C4	530274.279	2664562.663	900.293	On the top of parapet
TBM–C2	530176.576	2663975.460	871.100	On the top of parapet

TBM PILLAR LIST

TBM No.	Easting (m)	Northing (m)	R.L. (m)	Remarks
TBM–C1	530174.714	2663966.004	870.309	On the top of parapet
TBM–C3	530350.958	2663994.618	863.621	On the top of parapet
TBM–B1	530208.483	2663800.307	835.515	On the top of parapet
TBM–B2	530207.521	2663791.590	835.340	On the top of parapet
TBM–B13	529958.494	2663431.724	804.617	On the top of parapet
TBM–B14	529963.521	2663426.701	804.800	On the top of parapet
TBM–C23	529896.806	2662870.731	755.730	On the top of parapet
TBM–C24	529902.111	2662866.591	755.795	On the top of parapet
TBM–C21	529472.843	2662805.902	719.486	On the top of parapet
TBM–C22	529466.788	2662802.718	719.305	On the top of parapet
TBM–C25	529523.722	2662587.648	707.214	On the top of parapet
TBM–C26	529520.294	2662594.953	707.247	On the top of parapet
TBM–C27	527948.945	2660597.054	763.614	On the top of parapet
TBM–C28	527944.121	2660601.560	763.510	On the top of parapet
TBM–C29	527737.725	2660324.361	758.008	On the top of parapet
TBM–C30	527737.530	2660331.357	757.741	On the top of parapet
TBM–C31	527580.345	2660226.029	748.754	On the top of parapet
TBM–C32	527575.144	2660223.080	748.796	On the top of parapet
TBM–B21	527481.230	2660108.392	743.598	On the top of parapet
TBM–B22	527478.284	2660114.965	743.514	On the top of parapet
TBM–B19	527409.648	2660037.587	738.768	On the top of parapet
TBM–B20	527405.647	2660043.305	738.638	On the top of parapet
TBM–B18	527222.116	2659913.085	730.119	On the top of parapet
TBM–B17	527186.636	2659904.294	728.233	On the top of parapet
TBM–B15	526986.732	2659756.939	710.768	On the top of parapet
TBM–B16	526992.362	2659754.267	710.907	On the top of parapet
TBM–C35	526948.754	2659600.650	703.183	On the top of parapet
TBM–C36	526945.780	2659606.780	703.103	On the top of parapet
TBM–C33	526861.493	2659406.060	684.933	On the top of parapet
TBM–C34	526863.477	2659413.791	685.336	On the top of parapet
TBM–C37	526615.878	2659163.301	659.991	On the top of parapet
TBM–C38	526608.293	2659160.186	659.571	On the top of parapet
TBM–C39	526532.579	2658812.327	637.376	On the top of parapet
TBM–C40	526535.676	2658819.195	637.275	On the top of parapet
TBM–B31	526288.028	2658877.737	616.316	On the top of parapet
TBM–B32	526281.008	2658881.540	616.173	On the top of parapet
TBM–B27	526249.695	2658673.436	596.777	On the top of parapet
TBM–B28	526245.178	2658678.955	596.585	On the top of parapet
TBM–B25	526028.330	2658582.070	580.711	On the top of parapet
TBM–B26	526022.173	2658584.960	580.576	On the top of parapet
TBM–B23	526029.913	2658439.703	564.920	On the top of parapet
TBM–B24	526036.760	2658441.695	565.047	On the top of parapet
TBM–B29	525774.357	2657842.815	505.795	On the top of parapet
TBM–B30	525762.579	2657814.814	504.499	On the top of parapet
TBM–C43	526091.451	2657501.253	475.430	On the top of parapet
TBM–C44	526087.682	2657495.439	475.342	On the top of parapet
TBM–C41	525929.994	2657015.484	440.235	On the top of parapet
TBM–C42	525936.761	2657013.725	440.297	On the top of parapet
TBM–V1	525765.605	2656755.561	426.521	On the top of rcc bridge
TBM–V2	525719.842	2656780.063	426.524	On the top of rcc bridge
TBM–J/1	554613.817	2669406.006	592.692	On the top of parapet
TBM–J/2	554620.171	2669400.778	592.710	On the top of parapet
TBM–J/3	554277.129	2669559.804	671.045	On the top of parapet
TBM–J/4	554276.114	2669563.305	671.000	On the top of parapet
TBM–S/7	554027.901	2669670.561	711.790	On the top of parapet
TBM–S/8	554026.561	2669665.661	711.561	On the top of parapet
TBM–J/5	553404.729	2669790.239	810.500	On the top of parapet
TBM–J/6	553401.940	2669794.568	810.550	On the top of parapet
TBM–S/9	552877.182	2670154.373	883.683	On the top of parapet
TBM–S/10	552873.728	2670150.794	883.477	On the top of parapet
TBM–S/11	552186.335	2670109.769	951.567	On the top of parapet
TBM–S/12	552183.711	2670114.029	952.993	On the top of parapet
TBM–J/7	551787.977	2669877.582	1004.736	On the top of parapet
TBM–J/8	551786.024	2669879.719	1004.735	On the top of parapet
TBM–S/4	550797.004	2669379.656	1026.149	On the top of parapet
TBM–S/5	550799.370	2669375.276	1026.284	On the top of parapet
TBM–J/11	550485.094	2669204.102	1012.275	On the top of parapet
TBM–J/12	550485.404	2669196.145	1012.920	On the top of water tank
TBM–J/9	550386.767	2669288.338	1019.384	On the plinth level of semi pucca hutment
TBM–J/10	550391.609	2669284.674	1019.370	On the plinth level of semi pucca hutment
TBM–S/1	549491.057	2669731.158	924.294	On the top of parapet
TBM–S/2	549491.294	2669730.326	924.314	On the top of parapet
TBM–S/3	548841.715	2670450.368	862.057	On the plinth level of hutment
TBM–S/6	548841.489	2670447.573	862.028	On the plinth level of hutment

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: DECEMBER, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

LIST OF CONTROL PILLAR

SUBMISSION TYPE :

FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

CONSULTANT :

CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092.

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/PILLAR

REVISION MKD. - R0 | SHEET NO. - 03 OF 10

DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

CONTROL POINT LIST

Point No.	Esating (m)	Northing (m)	R.L. (m)
A42	570991.760	2692676.788	821.773
A41	570904.081	2692467.105	826.131
A40	570850.746	2692352.652	827.967
A39	570807.818	2692261.225	828.970
A38	570802.040	2692246.041	829.049
A37	570796.157	2692236.879	829.145
A36	570746.964	2692132.595	830.421
A35	570724.201	2692084.596	831.103
A34	570687.026	2692004.116	831.683
A33	570643.473	2691915.380	831.504
A32	570588.184	2691746.094	829.739
A31	570550.486	2691642.318	831.531
A30	570503.231	2691497.189	833.601
A29	570469.495	2691385.585	836.897
A28	570452.602	2691333.440	836.820
A27	570410.970	2691177.258	839.175
A26	570377.333	2691072.244	841.556
A25	570325.263	2690935.263	841.371
A24	570256.138	2690743.450	840.717
A23	570188.513	2690663.721	840.241
A22	570179.464	2690507.541	837.575
A21	570149.694	2690347.419	833.723
A20	570159.960	2690278.767	832.724
A19	570167.409	2690049.774	832.516
A18	570097.609	2690007.870	830.235
A17	570047.683	2689939.734	827.911
A16	569998.847	2689841.011	821.925
A15	569996.076	2689731.963	820.125
A14	569989.055	2689621.836	820.738
A13	569980.764	2689558.486	821.560
A12	569991.479	2689418.471	826.745
A11	569993.130	2689287.784	823.349
A10	570027.134	2689215.293	819.130
A9	570007.657	2689115.867	819.478
A8	569940.000	2689016.045	819.300
A7	569878.150	2688919.295	820.729
A6	569773.755	2688761.280	821.818
A5	569720.576	2688682.468	821.737
A4	569577.968	2688453.182	818.543
A3	569470.464	2688289.780	817.008
A2	569304.023	2688074.905	820.904
A1	569253.506	2687978.432	820.946
B–1	569068.553	2687465.617	822.52
B–2	569005.847	2687366.926	822.681
B–3	568955.815	2687241.95	825.73
B4	568897.765	2687193.231	828.703
B–5	568645.596	2687062.133	829.022
B–6	568605.147	2687022.054	831.287
B–7	568526.224	2686934.329	831.387
B–8	568457.366	2686793.756	831.819
B–9	568349.007	2686537.573	834.131
B–10	568292.759	2686491.041	834.248
B–11	567801.127	2686183.883	847.701
B–12	567758.588	2686109.176	851.545
B–13	567732.172	2685807.232	872.839
B14	567710.191	2685717.778	879.46
B–15	567709.409	2685662.391	883.318
B–16	567677.615	2685598.709	887.744
B–17	567745.08	2685508.544	896.082
B–18	567753.921	2685474.179	896.393
B–19	567716.957	2685355.898	893.722
B–20	567703.227	2685298.856	892.038
B–21	567770	2685246.099	888.375
B–22	567542.367	2685165.212	863.375
B–23	567507.347	2685105.351	862.873
B–24	567526.979	2685038.802	864.576
B–25	567515.047	2684969.195	862.374
B–26	567392.779	2684664.148	864.292
B–27	567364.232	2684656.046	863.164
B–28	567262.939	2684499.05	869.73
B29	567217.615	2684346.154	876.651
B–30	567091.258	2684059.234	865.053
B–31	567016.195	2684041.027	864.289

CONTROL POINT LIST

Point No.	Esating (m)	Northing (m)	R.L. (m)
B–32	566998.302	2683949.263	865.55
B–33	567242.443	2683769.141	860.528
B–34	567129.125	2683645.29	856.755
B–35	567074.416	2683292.359	861.76
B–36	567062.485	2683253.143	862.579
B–37	567007.863	2683221.305	864.216
B–38	566944.424	2683028.188	873.05
B–39	566838.755	2682892.24	878.269
B–40	567009.685	2682512.128	867.169
B–41	566934.329	2682457.83	868.778
B–42	566939.865	2682253.025	864.945
B–43	566978.093	2682233.563	863.56
B–44	566980.381	2682174.167	863.106
B–45	566931.937	2681952.721	859.626
B–46	566890.438	2681922.865	859.271
B–47	566854.94	2681914.466	858.817
B–48	566813.243	2681826.654	859.389
B–49	566807.529	2681756.797	860.521
B–50	566618.459	2681596.409	865.949
B–51	566602.628	2681495.846	867.643
B–52	566548.285	2681433.978	868.805
B–53	566509.843	2681384.208	870.022
B–54	566459.593	2681321.769	870.692
B–55	566444.198	2681229.476	871.165
B–56	566424.397	2680833.538	866.124
B–57	566418.157	2680751.99	865.825
B–58	566346.639	2680715.667	865.68
B–59	566363.944	2680662.76	869.157
B–60	566355.926	2680560.815	872.844
B–61	566315.347	2680510.213	872.05
B–62	566358.393	2680243.484	867.733
B–63	566282.829	2680248.426	868.629
B–64	566273.344	2680140.157	866.415
B–65	566335.070	2680099.336	862.357
B–66	566351.810	2680064.049	861.988
B–67	566318.652	2680018.525	860.499
B–68	566343.884	2679992.821	860.950
B–69	566416.143	2679853.506	871.216
B–70	566351.280	2679780.833	877.723
B–71	566221.278	2679765.199	873.981
B–72	566190.207	2679732.839	875.134
B–73	566155.812	2679735.896	874.756
B–74	566090.538	2679778.608	873.049
B–75	566046.956	2679683.486	874.700
B–76	566066.362	2679571.861	878.541
B–77	566001.053	2679533.746	877.929
B–78	566002.794	2679490.021	878.388
B–79	566107.279	2679447.482	880.358
B–80	566106.969	2679378.127	881.228
B–81	565996.146	2679370.464	882.280
B–82	566008.505	2679332.189	884.263
B–83	566046.060	2679284.699	886.849
B–84	565978.025	2679207.438	893.784
B–85	565937.894	2679167.537	893.756
B–86	566066.963	2679014.081	898.943
B–87	566020.406	2678964.810	897.956
B–88	565966.369	2678882.862	901.725
B–89	565932.539	2678834.034	902.682
B–90	565870.115	2678805.740	900.121
B–91	565871.996	2678635.735	902.178
B–92	565835.464	2678516.046	892.073
B–93	565879.974	2678457.138	891.916
B–94	565949.353	2678407.158	894.511
B–95	565986.183	2678371.281	895.561
B–96	566116.465	2678307.019	898.296
B–97	566183.645	2678273.038	899.638
B–98	566278.242	2678235.006	894.562
B–99	566307.785	2678206.339	890.943
B–100	566374.479	2678234.156	885.929
B–101	566420.768	2678229.041	882.376
B–102	566461.406	2678239.970	879.350
B–103	566536.071	2678231.098	872.800
B–104	566559.238	2678180.979	869.115
B–105	566647.958	2678142.942	866.602

CONTROL POINT LIST

Point No.	Esating (m)	Northing (m)	R.L. (m)
B–106	566722.978	2678124.514	865.386
B–107	566707.237	2678066.261	862.326
B–108	566736.934	2678051.325	862.829
B–109	566799.423	2678059.527	863.646
B–110	566818.378	2678022.737	865.097
B–111	566804.303	2677966.074	864.277
C–1	566543.896	2677898.461	865.013
C–2	566452.254	2677910.566	863.683
C–3	566392.903	2677891.180	864.613
C–4	566325.327	2677882.958	864.214
C–5	566284.821	2677920.544	862.920
C–6	566179.367	2677974.859	858.645
C–7	566260.458	2677734.013	864.363
C–8	566236.013	2677672.692	863.827
C–9	565793.457	2677726.902	859.951
C–10	565689.288	2677734.354	861.846
C–11	565585.533	2677808.527	864.401
C–12	565550.021	2677801.469	864.560
C–13	565453.392	2677763.535	866.567
C–14	565084.830	2677673.054	875.689
C–15	564995.398	2677681.033	881.838
C–16	564956.543	2677649.011	887.023
C–17	564952.135	2677615.415	891.031
C–18	564872.636	2677573.955	898.226
C–19	564868.168	2677499.591	901.977
C–20	564823.441	2677462.357	905.680
C–21	564777.835	2677455.257	908.822
C–22	564759.324	2677406.813	912.321
C–23	564808.922	2677376.125	914.517
C–24	564792.797	2677325.327	918.361
C–25	564773.991	2677307.953	920.235
C–26	564523.366	2677359.864	937.824
C–27	564471.904	2677352.099	940.677
C–28	564496.188	2677308.030	941.976
C–29	564566.883	2677236.990	944.315
C–30	564552.781	2677196.053	946.513
C–31	564446.171	2677211.336	952.602
C–32	564436.206	2677190.912	952.504
C–33	564444.421	2677149.741	952.920
C–34	564433.270	2677068.493	959.801
C–35	564425.574	2676976.271	971.377
C–36	564340.239	2676967.380	979.258
C–37	564289.690	2677000.436	985.441
C–38	564251.911	2676949.859	988.745
C–39	564201.964	2676861.237	997.237
C–40	564192.792	2676785.571	1000.144
C–41	564201.051	2676741.494	1001.951
C–42	564191.386	2676559.630	1000.331
C–43	564155.570	2676507.681	998.547
C–44	564062.160	2676386.497	999.097
C–45	564053.658	2676314.600	999.085
C–46	564056.218	2676280.233	998.866
C–47	564034.425	2676049.227	992.799
C–48	564035.85	2675918.672	986.072
C–49	563986.623	2675868.257	984.997
C–50	563971.809	2675804.987	984.201
C–51	563882.663	2675782.648	981.638
C–52	563859.932	2675734.011	981.483
C–53	563769.357	2675690.039	980.474
C–54	563680.893	2675613.557	986.616
C–55	563621.611	2675604.248	989.927
C–56	563541.292	2675533.484	993.309
C–57	563482.113	2675515.544	993.28
C–58	563426.356	2675449.756	998.447
C–59	563403.207	2675341.479	1003.213
C–60	563406.764	2675275.583	1002.774
C–61	563425.294	2675188.822	999.628
C–62	563406.644	2674980.378	993.048
C–63	563331.512	2674934.119	999.258
C–64	563244.27	2674826.116	1008.737
C–65	563268.671	2674586.409	1007.996
C–66	563255.127	2674507.96	1006.469
C–67	563176.602	2674296.259	987.238
C–68	563131.859	2674291.888	984.156

CONTROL POINT LIST

Point No.	Esating (m)	Northing (m)	R.L. (m)
C–69	563138.494	2674122.296	979.687
C–70	563134.661	2674071.476	979.158
C–71	563140.618	2674028.899	977.392
C–72	563135.168	2673951.89	972.419
C–73	563187.265	2673881.743	977.593
C–74	563164.075	2673832.887	979.123
C–75	563117.247	2673782.108	976.58
C–76	563089.081	2673619.561	976.879
C–77	563072.74	2673598.204	979.272
C–78	563056.228	2673547.277	979.118
C–79	562970.546	2673501.667	980.058
C–80	562940.208	2673397.404	980.466
C–81	562850.863	2673347.37	981.471
C–82	562815.897	2673253.386	982.313
C–83	562838.744	2673123.815	985.914
C–84	562851.365	2673059.092	992.086
C–85	562819.583	2672965.625	1002.154
C–86	562820.992	2672912.63	1001.347
C–87	562853.111	2672723.672	1010.579
C–88	562857.097	2672649.703	1012.515
C–89	562793.17	2672510.35	1015.323
A44	562460.165	2672220.583	997.436
A45	562321.875	2672198.178	998.534
A46	562309.276	2672160.989	997.457
A47	562278.082	2672089.579	995.638
A48	562244.315	2672101.885	994.055
A49	562206.362	2672092.567	992.331
A50	562150.528	2672130.318	990.035
A51	562122.185	2672097.729	989.532
A52	562056.784	2672061.122	987.212
A53	562054.702	2671965.466	982.239
A54	561986.446	2671999.716	978.044
A55	561933.895	2671934.329	974.133
A56	561908.690	2671928.494	973.772
A57	561837.026	2671869.901	970.583
A58	561784.170	2671866.153	970.019
A59	561700.184	2671786.397	969.048
A60	561643.823	2671754.960	970.604
A61	561570.331	2671706.702	965.753
A62	561543.876	2671626.885	957.469
A63	561528.001	2671570.460	951.116
A64	561471.428	2671521.149	950.259
A65	561417.173	2671303.923	969.967
A66	561423.048	2671251.410	975.910
A67	561110.857	2671420.537	1000.769
A68	561046.232	2671410.349	1004.744
A69	560940.375	2671331.012	1010.750
A70	560823.183	2671318.931	1012.001
A71	560782.079	2671234.101	1018.261
A72	560727.141	2671263.060	1020.349
A73	560709.927	2671349.621	1017.644
A74	560675.377	2671367.530	1019.142
A75	560636.838	2671288.699	1026.354
A76	560562.240	2671376.070	1035.135
A77	560531.746	2671362.559	1038.840
A78	560535.931	2671257.823	1047.043
A79	560425.993	2671259.079	1054.392
A80	560393.868	2671282.494	1056.761
A81	560378.723	2671227.457	1060.571
A82	560384.734	2671161.635	1063.871
A83	560330.686	2671129.385	1062.014
A84	560324.594	2671093.346	1061.696
A85	560239.321	2670968.764	1065.358
A86	560165.913	2670933.106	1062.008
A86	560165.925	2670933.115	1061.866
A87	560169.468	2670879.499	1058.508
A88	560149.509	2670800.244	1053.122
A89	560101.625	2670764.247	1048.338
A90	560064.966	2670678.076	1043.417
A91	560058.878	2670551.264	1035.915
A92	560031.266	2670533.469	1033.704
A93	560010.467	2670401.859	1023.820
A94	559893.746	2670393.711	1019.984
A95	559889.062	2670403.855	1019.905

CONTROL POINT LIST

Point No.	Esating (m)	Northing (m)	R.L. (m)
A96	559898.984	2670461.819	1018.437
A97	559837.815	2670514.617	1016.005
A98	559767.904	2670510.818	1014.156
D–1	559501.678	2670626.03	1001.903
D–2	559445.638	2670592.786	1001.127
D–3	559339.342	2670570.134	995.035
D–4	559311.594	2670510.584	991.114
D–5	559250.367	2670463.611	986.439
D–6	559014.751	2670462.05	977.288
D–7	558964.67	2670477.371	976.726
D–8	558953.289	2670547.937	974.144
D–9	558846.618	2670569.69	969.515
D–10	558768.054	2670582.14	968.423
D–11	558727.192	2670543.336	968.189
D–12	558663.969	2670581.419	967.843
D–13	558517.342	2670332.557	953.568
D–14	558534.528	2670260.048	949.844
D–15	558476.638	2670261.026	947.113
D–16	558395.42	2670219.679	943.315
D–17	558349.252	2670210.748	941.019
D–18	558202.251	2670056.68	927.312
D–19	558026.189	2670209.124	916.617
D–20	557918.42	2670233.394	909.816
D–21	557843.556	2670201.663	905.549
D–22	557797.975	2670219.161	903.237
D–23	557807.396	2670273.783	900.307
D–24	557837.595	2670328.645	897.06
D–25	557856.61	2670493.227	889.631
D–26	557865.581	2670522.77	888.817
D–27	557839.325	2670549.03	885.594
D–28	557793.805	2670641.956	878.926
D–29	557745.826	2670740.635	874.474
D–30	557691.47	2670778.308	871.331
D–31	557609.231	2670821.737	866.99
D–32	557580.559	2670883.681	863.231
D–33	557599.025	2670975.511	858.527
D–34	557434.779	2671148.655	846.632
D–35	557445.805	2671191.428	843.749
D–36	557511.066	2671207.508	839.77
D–37	557638.718	2671406.662	827.006
D–38	557645.923	2671461.694	823.519
D–39	557659.272	2671549.683	818.941
D–40	557708.678	2671582.146	815.316
D–41	557919.565	2671499.834	798.584
D–42	558106.887	2671557.445	788.791
D–43	558220.417	2671616.486	782.804
D–44	558360.236	2671643.306	775.975
D–45	558510.141	2671577.193	767.115
D–46	558650.537	2671652.099	761.648
D–47	558565.578	2671689.544	758.807
D–48	558326.976	2671779.226	748.306
D–49	558225.29	2671795.89	741.968
D–50	558168.873	2671825.586	738.709
D–51	558063.102	2671874.834	733.031
D–52	558010.27	2671852.714	730.724
D–53	557919.626	2671952.434	726.378
D–54	557879.276	2671940.684	722.11
D–55	557816.065	2671901.905	716.995
D–56	557784.16	2671881.039	714.626
D–57	557737.48	2671891.837	711.585
D–58	557581.956	2671927.172	702.18
D–59	557552.567	2671847.992	697.922
D–60	557381.145	2671949.798	687.047
D–61	557343.158	2671889.983	684.26
D–62	557275.452	2671895.89	680.882
D–63	557215.89	2671851.695	678.322
D–64	557186.629	2671874.863	676.198
D–65	557211.723	2671963.758	672.136
D–66	557030.824	2671879.065	660.662
D–67	557037.867	2671806.739	658.589
D–68	556997.209	2671746.828	654.612
D–69	556950.296	2671708.516	651.946
D–70	556889.518	2671596.815	649.553
D–71	556756.526	2671401.499	641.108

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: DECEMBER, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR
(PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

LIST OF CONTROL PILLAR

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

CONSULTANT :
CETEST Engineering Consultants
An ISO 9001, 14001 & OHSAS 18001 Certified Company
CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092.

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/PILLAR

REVISION MKD. - R0		SHEET NO. - 04 OF 10	
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

CONTROL POINT LIST

Point No.	Esating (m)	Northing (m)	R.L. (m)
D−72	556714.706	2671273.246	637.763
D−73	556666.31	2671143.004	636.117
D−74	556706.235	2671071.784	635.966
D−75	556600.258	2670900.614	630.739
D−76	556617.989	2670790.328	627.531
D−77	556694.148	2670761.423	625.134
D−78	556740.506	2670761.299	624.855
D79	556567.518	2670415.425	613.035
D80	556491.058	2670420.288	611.818
D81	556467.656	2670434.789	610.958
D82	556323.348	2670427.339	607.962
D83	556257.365	2670497.409	606.107
D84	556192.793	2670518.813	605.551
D85	556056.897	2670467.679	601.785
D86	556050.505	2670501.561	599.948
D87	556057.2	2670575.523	598.042
D88	555789.818	2670550.291	593.16
D89	555784.916	2670504.701	593.644
D90	555728.537	2670445.173	595.567
D91	555756.832	2670323.92	597.081
D−92	555821.888	2670174.927	601.886
D−93	555785.242	2670144.707	602.559
D−94	555618.147	2670148.749	612.763
D−95	555494.521	2670082.499	621.118
D−96	555416.044	2670066.8	623.523
D97	555256.02	2670003.75	624.605
D98	555209.655	2670006.476	624.224
D99	555117.444	2670066.383	620.878
D100	555012.855	2670016.007	617.573
D101	554892.354	2669935.294	611.452
D102	554859.253	2669889.494	610.236
D103	554806.262	2669842.593	605.712
D104	554652.426	2669462.258	594.545
D105	554670.49	2669377.422	595.886
D106	554824.23	2669360.055	602.353
D107	554874.124	2669288.75	606.098
D108	554881.108	2669208.879	610.025
D109	554827.765	2669153.921	613.68
D110	554783.218	2669132.123	615.093
D111	554594.274	2669048.865	610.5
D112	554500.043	2669044.881	605.761
D113	554475.423	2668980.722	603.724
D114	554355.182	2668890.292	605.332
D115	554279.857	2668767.436	609.83
D116	554367.358	2668666.78	609.592
D117	554281.406	2668475.702	603.53
D118	554257.676	2668314.151	604.379
D119	554142.656	2668082.818	605.977
E−1	554080.064	2667886.662	605.970
E−2	554055.546	2667869.976	606.528
E−3	553990.694	2667964.331	609.489
E−4	553942.312	2667971.609	611.386
E−5	553896.751	2667886.611	611.549
E−6	553863.877	2667838.930	611.367
E−7	553850.440	2667682.305	613.359
E−8	553820.002	2667592.463	615.115
E−9	553730.340	2667579.351	615.763
E−10	553629.923	2667507.871	616.472
E−11	553549.608	2667488.275	615.514
E−12	553520.925	2667046.339	616.979
E−13	553527.715	2666919.129	618.583
E−14	553495.626	2666890.547	618.464
E−15	553387.813	2666897.782	619.239
E−16	553395.860	2666856.451	621.330
E−17	553437.708	2666817.150	625.017
E−18	553487.556	2666803.836	628.377
E−19	553494.527	2666762.235	630.336
E−20	553452.354	2666670.893	636.704
E−21	553380.117	2666622.156	642.313
E−22	553363.451	2666566.785	645.592
E−23	553291.702	2666546.102	650.370
E−24	553199.527	2666490.498	661.078
E−25	553167.668	2666466.119	664.311
E−26	553111.230	2666458.497	668.587

CONTROL POINT LIST

Point No.	Esating (m)	Northing (m)	R.L. (m)
E−27	553163.982	2666407.289	672.137
E−28	553163.043	2666321.784	675.990
E−29	553216.498	2666234.998	681.890
E−30	553223.881	2666146.266	687.872
E−31	553195.572	2666101.637	691.144
E−32	553169.823	2666097.337	693.121
E−33	553124.657	2666138.521	696.870
E−34	553076.785	2666134.074	700.297
E−35	553041.016	2666115.423	702.530
E−36	552994.871	2666121.582	705.651
E−37	552986.234	2666192.812	710.303
E−38	552959.863	2666207.698	712.014
E−39	552916.932	2666290.747	718.236
E−40	552892.307	2666316.647	720.523
E−41	552801.325	2666216.913	729.845
E−42	552676.306	2666192.689	744.348
E−43	552548.235	2666203.408	753.441
E−44	552502.353	2666197.853	756.668
E−45	552494.910	2666143.214	760.137
E−46	552456.095	2666126.701	762.119
E−47	552420.797	2665963.270	773.459
E−48	552331.131	2665856.604	786.764
E−49	552271.350	2665872.156	791.821
E−50	552146.991	2665933.336	802.766
E−51	552118.458	2665896.419	805.257
E−52	552154.333	2665872.227	807.672
E−53	552147.386	2665816.103	811.235
E−54	552200.910	2665719.667	816.874
E−55	552374.625	2665577.516	827.956
E−56	552427.800	2665579.700	830.131
E−57	552305.065	2665485.652	843.626
E−58	552223.100	2665392.548	850.058
E−59	552176.339	2665388.520	853.096
E−60	552077.059	2665425.588	862.600
E−61	551955.651	2665353.237	872.561
E−62	551918.210	2665270.068	878.764
E−63	551920.035	2665167.381	883.960
E−64	551961.449	2665122.595	886.776
E−65	551873.964	2665130.822	891.001
E−66	551801.480	2665139.169	895.153
E−67	551755.304	2665155.221	897.735
E−68	551611.199	2665097.320	904.952
E−69	551519.273	2665086.647	911.435
E−70	551484.436	2665059.054	914.779
E−71	551465.724	2665011.519	916.069
E−72	551410.758	2664958.386	919.283
E−73	551376.019	2664895.197	925.904
E−74	551319.228	2664843.771	930.050
E−75	551233.033	2664861.326	935.596
E−76	551278.871	2665007.677	945.816
E−77	551270.191	2665033.106	947.754
E−78	551303.435	2665109.811	952.856
E−79	551252.793	2665126.627	955.853
E−80	551195.136	2665195.939	961.884
E−81	551148.663	2665264.433	966.725
E−82	551057.500	2665265.797	970.226
E−83	551011.715	2665266.967	974.869
E−84	551027.836	2665356.179	979.558
E−85	551083.141	2665399.962	980.816
E−86	551102.401	2665462.010	982.646
E−87	551088.693	2665520.602	985.638
E−88	551104.625	2665625.200	988.722
E−89	550900.743	2665916.848	1001.878
E−90	550845.795	2666007.789	1006.662
E−91	550800.714	2665916.419	1008.185
E−92	550769.374	2665896.416	1010.114
E−93	550752.635	2666009.679	1019.283
E−94	550699.751	2666031.626	1021.630
E−95	550645.138	2666047.882	1026.442
E−96	550570.037	2666072.124	1031.533
E−97	550541.396	2666111.860	1035.590
E−98	550549.528	2666189.642	1042.820
E−99	550563.250	2666271.772	1047.591
E−100	550561.048	2666341.402	1052.806

CONTROL POINT LIST

Point No.	Esating (m)	Northing (m)	R.L. (m)
E−101	550601.791	2666381.737	1057.520
E−102	550553.348	2666394.755	1063.248
E−103	550522.255	2666375.011	1065.147
E−104	550431.178	2666459.997	1070.577
E−105	550403.517	2666427.077	1073.845
E−106	550411.908	2666390.564	1075.416
E−107	550451.993	2666295.912	1079.208
E−108	550431.025	2666277.051	1078.395
E−109	550355.462	2666286.181	1074.989
E−110	550286.835	2666277.173	1072.301
F1	550106.838	2666266.347	1069.889
F2	550055.187	2666172.611	1070.041
F3	550003.779	2666068.594	1068.086
F4	549968.379	2666020.086	1065.912
F5	549874.586	2665969.312	1062.991
F6	549839.205	2665946.381	1061.537
F7	549679.539	2665812.489	1049.942
F8	549609.553	2665758.35	1046.395
F9	549544.666	2665844.528	1041.713
F10	549588.204	2665875.125	1036.971
F11	549641.377	2665889.053	1033.856
F12	549690.464	2665927.734	1029.544
F13	549668.639	2665935.523	1028.228
F14	549616.245	2665897.001	1024.489
F15	549561.106	2665892.059	1022.035
F16	549504.807	2665918.669	1018.666
F17	549474.904	2665841.342	1011.996
F18	549553.233	2665757.85	1007.908
F19	549565.184	2665697.363	1005.614
F20	549558.023	2665636.213	1002.427
F21	549633.951	2665646.528	996.519
F22	549552.859	2665571.926	991.427
F23	549439.163	2665437.678	983.089
F24	549431.683	2665394.777	982.396
F25	549342.411	2665398.891	980.96
F26	549258.117	2665365.802	979.972
F27	549163.797	2665273.209	980.009
F28	549142.468	2665230.537	980.967
F29	549112.11	2664867.678	981.425
F30	549088.904	2664832.552	981.455
F31	548962.713	2664819.735	982.676
F32	548912.969	2664733.966	982.464
F33	548908.498	2664601.676	979.869
F34	549034.846	2664324.418	973.365
F35	548996.814	2664297.317	972.73
F36	548923.794	2664299.524	971.119
F37	548897.538	2664245.953	969.39
F38	548947.398	2664178.829	969.411
F39	548944.858	2664029.375	969.664
F40	548975.638	2663912.72	971.404
F41	549021.887	2663833.5	971.967
F42	548874.423	2663750.064	967.256
F43	548840.83	2663906.261	955.48
F44	548749.49	2664141.583	940.942
F45	548721.946	2664211.486	935.328
F46	548726.958	2664285.664	928.724
G−1	548787.355	2664372.551	920.397
G−2	548746.616	2664442.349	914.829
G−3	548724.796	2664508.554	909.679
G−4	548694.168	2664599.681	904.224
G−5	548622.333	2664716.565	895.129
G−6	548712.892	2664883.755	882.712
G−7	548700.785	2664933.697	880.063
G−8	548616.457	2665021.1	872.038
G−9	548566.21	2665061.635	867.186
G−10	548569.471	2665160.552	859.896
G−11	548658.169	2665250.429	853.641
G−12	548563.515	2665337.74	847.484
G−13	548538.891	2665407.642	844.152
G−14	548598.387	2665472.346	841.479
G−15	548630.387	2665506.79	837.07
G−16	548695.553	2665524.308	831.195
G−17	548654.238	2665595.831	827.1
G−18	548661.873	2665668.773	822.89

CONTROL POINT LIST

Point No.	Esating (m)	Northing (m)	R.L. (m)
G−19	548691.018	2665687.44	821.468
G−20	548700.176	2665783.737	818.262
G−21	548728.192	2665854.035	815.494
G−22	548733.249	2665982.131	812.349
G−23	548750.474	2666036.814	811.401
G−24	548748.293	2666116.301	810.488
G25	548699.278	2666201.643	806.502
G−26	548714.13	2666302.152	801.279
G−27	548703.183	2666411.033	796.21
G−28	548674.921	2666461.48	793.291
G−29	548667.133	2666535.704	789.104
G−30	548632.593	2666545.871	786.416
G−31	548623.594	2666564.668	784.599
G−32	548646.129	2666629.738	777.515
G−33	548611.684	2666801.49	765.622
G−34	548605.742	2666858.554	761.481
G−35	548580.305	2666912.944	757.102
G−36	548497.319	2666940.586	749.841
G−37	548412.116	2667061.945	754.031
G−38	548402.926	2667112.11	755.139
G−39	548356.096	2667174.376	756.999
G−40	548318.884	2667273.086	758.563
G−41	548491.607	2667463.126	769.146
G−42	548574.606	2667420.832	774.265
G−43	548601.301	2667450.124	774.981
G−44	548602.534	2667500.194	776.474
G−45	548569.06	2667582.749	776.82
G−46	548545.109	2667698.722	783.042
G−47	548488.747	2667830.552	790.132
G−48	548496.774	2668012.88	799.622
G−49	548471.993	2668092.381	802.454
G−50	548462.768	2668170.65	806.869
G−51	548411.506	2668175.543	810.452
G−52	548409.293	2668245.983	818.012
M−1	548434.726	2668546.788	825.815
M−2	548399.208	2668503.749	826.852
M−3	548362.44	2668500.649	826.245
M−4	548317.449	2668556.678	825.768
M−5	548264.514	2668592.875	825.425
M−6	548202.995	2668601.099	824.718
M−7	548142.244	2668558.846	822.09
M−8	548141.291	2668496.944	821.058
M−9	548068.921	2668485.674	820.001
M−10	548006.175	2668519.259	817.285
M−11	547951.956	2668584.805	814.595
M−12	547926.985	2668611.414	813.49
M−13	547867.269	2668627.371	812.318
M−14	547804.774	2668601.446	809.773
M−15	547754.552	2668618.781	807.984
M−16	547706.34	2668594.459	805.117
M−17	547744.295	2668705.012	804.694
M−18	547823.52	2668726.992	804.489
M−19	547877.996	2668715.894	804.551
M−20	547904.443	2668740.716	802.409
M−21	547958.564	2668797.791	796.421
M−22	548058.631	2668822.359	787.48
M−23	548127.372	2668808.904	781.995
M−24	548181.026	2668772.332	777.92
M−25	548246.475	2668804.009	773.645
M−26	548337.252	2668813.907	768.163
M−27	548413.187	2668809.874	761.982
M−28	548490.427	2668918.595	753.952
M−29	548421.699	2668983.642	747.509
M−30	548374.442	2668926.665	744.138
M−31	548326.676	2669068.603	736.458
M−32	548338.307	2669138.696	734.679
M−33	548309.764	2669181.157	732.535
M−34	548298.075	2669260.014	730.019
M−35	548257.635	2669310.564	727.072
M−36	548181.461	2669262.485	723.103
M−37	548147.075	2669357.7	723.487
M−38	548163.731	2669436.805	727.28
M−39	548096.075	2669518.724	733.127
M−40	548009.775	2669649.864	740.742

CONTROL POINT LIST

Point No.	Esating (m)	Northing (m)	R.L. (m)
M−41	548007.818	2669802.175	750.246
M−42	547920.97	2669840.911	754.808
M−43	547869.251	2669881.484	757.809
M−44	547837.056	2669931.558	761.36
M−45	547882.875	2669966.686	763.927
M−46	547926.553	2669966.664	766.971
M−47	547930.186	2670006.4	768.824
M−48	547957.72	2670058.697	772.726
M−49	547934.809	2670077.975	775.136
M−50	547926.128	2670031.163	779.008
M−51	547902.64	2669999.56	781.172
M−52	547841.24	2669974.045	785.605
M−53	547807.905	2669952.806	788.285
M−54	547764.811	2669955.136	790.622
M−55	547656	2669932.839	796.789
M−56	547690.517	2669886.819	803.48
M−57	547727.528	2669879.368	805.087
M−58	547771.287	2669856.581	806.266
M−59	547878.682	2669754.914	811.608
M−60	547862.698	2669636.764	819.972
M−61	547848.805	2669641.402	820.723
M−62	547735.135	2669828.134	839.709
M−63	547676.918	2669849.218	844.46
M−64	547621.533	2669816.606	848.269
M−65	547516.137	2669837.729	856.311
M−66	547485.089	2669890.7	861.686
M−67	547517.031	2669982.115	868.468
M−68	547605.375	2670021.355	874.825
M−69	547653.551	2670083.293	883.062
M−70	547565.166	2670135.263	890.781
M−71	547555.134	2670227.48	898.901
M−72	547626.891	2670285.239	905.651
M−73	547568.206	2670361.616	912.064
M−74	547566.618	2670401.136	914.997
M−75	547540.903	2670337.507	919.386
M−76	547460.538	2670284.333	925.47
M−77	547406.943	2670230.538	929.278
M−78	547327.172	2670054.379	940.191
M−79	547305.765	2669998.915	944.391
M−80	547279.644	2669893.382	950.44
M−81	547208.068	2669927.203	954.426
M−82	547125.886	2669950.726	957.403
M−83	547186.081	2670007.642	957.669
M−84	547153.376	2670105.618	961.234
M−85	547094.195	2670089.985	964.85
M−86	546982.728	2670062.919	971.076
M−87	546903.881	2670093.828	975.992
M−88	546890.836	2670139.722	978.752
M−89	546970.683	2670192.387	984.318
M−90	547015.552	2670260.945	988.131
M−91	546997.708	2670472.726	1009.549
M−92	546874.749	2670518.645	1018.418
M−93	546923.664	2670616.994	1025.131
M−94	546804.253	2670635.352	1030.107
M−95	546742.235	2670690.814	1032.022
M−96	546620.615	2670580.975	1035.285
M−97	546550.215	2670578.97	1038.451
M−98	546479.652	2670551.45	1038.477
M−99	546445.398	2670477.552	1043.024
M−100	546399.797	2670372.142	1050.503
M−101	546401.396	2670306.089	1054.138
M−102	546366.403	2670237.379	1058.082
M−103	546383.799	2670126.341	1066.805
M−104	546268.966	2670152.2	1076.151
N−1	546110.189	2670233.151	1077.888
N−2	546038.316	2670243.573	1075.211
N−3	545938.658	2670180.554	1071.599
N−4	545913.553	2670262.294	1070.461
N−5	545837.364	2670304.88	1067.824
N−6	545786.383	2670305.56	1066.813
N−7	545740.347	2670365.263	1063.397
N−8	545656.789	2670407.701	1061.076
N−9	545515.769	2670393.256	1059.201
N−10	545427.797	2670326.539	1053.506

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: DECEMBER, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

LIST OF CONTROL PILLAR

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

CONSULTANT : CETEST Engineering Consultants, An ISO 9001, 14001 & OHSAS18001 Certified Company

CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092.

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/PILLAR

REVISION MKD. - R0 | SHEET NO. - 05 OF 10

DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

CONTROL POINT LIST

Point No.	Esating (m)	Northing (m)	R.L. (m)
N–11	545367.168	2670271.031	1050.815
N–12	545282.001	2670292.636	1047.16
N–13	545222.829	2670380.285	1042.46
N–14	545105.598	2670379.996	1038.431
N–15	545069.866	2670437.573	1037.149
N–16	545072.897	2670499.66	1037.852
N–17	545037.215	2670556.05	1037.416
N–18	545025.182	2670648.996	1034.949
N–19	545015.755	2670786.062	1031.047
N–20	545030.901	2670872.291	1026.418
N–21	544926.352	2670962.219	1022.807
N–22	544888.565	2671014.718	1022.46
N–23	544857.139	2670975.703	1019.636
N–24	544842.778	2670899.427	1016.833
N–25	544851.321	2670831.201	1014.207
N–26	544815.764	2670620.064	1002.961
N–27	544819.333	2670471.849	998.268
N–28	544815.502	2670423.476	996.724
N–29	544797.542	2670367.92	993.998
N–30	544803.214	2670330.725	990.874
N–31	544808.037	2670237.422	984.742
N–32	544761.32	2670144.246	978.116
N–33	544709.822	2670094.274	974.649
N–34	544689.434	2670020.508	969.029
N–35	544642.477	2670020.209	966.56
N–36	544594.084	2670025.155	963.888
N–37	544525.057	2670048.389	957.887
N–38	544503.892	2670013.419	956.288
N–39	544421.931	2669954.584	948.29
N–40	544277.864	2669903.963	937.13
N–41	544211.707	2669872.494	933.822
N–42	544247.146	2669780.744	927.553
N–43	544220.401	2669716.167	924.579
N–44	544148.319	2669668.772	920.424
N–45	544086.252	2669692.513	917.973
N–46	544048.408	2669555.572	908.373
N–47	543891.263	2669598.455	901.737
N–48	543860.991	2669623.621	900.537
N–49	543862.221	2669669.958	899.021
N–50	543832.193	2669705.491	897.214
N–51	543747.054	2669718.816	892.278
N–52	543713.518	2669765.063	889.726
N–53	543659.372	2669792.019	887.397
N–54	543554.013	2669979.773	876.441
N–55	543561.709	2670037.484	873.581
N–56	543589.162	2670088.813	871.441
N–57	543559.392	2670130.113	868.859
N–58	543500.716	2670125.537	865.362
N–59	543514.267	2670089.472	862.929
N–60	543498.574	2670038.883	860.444
N–61	543510.575	2669945.730	856.465
N–62	543470.248	2669873.833	853.776
N–63	543569.391	2669749.960	844.783
N–64	543587.167	2669668.041	842.077
N–65	543605.686	2669605.337	839.902
N–66	543554.973	2669602.320	839.784
N–67	543494.334	2669645.652	837.731
N–68	543465.633	2669680.500	835.298
N–69	543426.321	2669728.335	834.274
N–70	543376.514	2669744.174	833.445
N–71	543302.150	2669814.857	828.589
N–72	543269.357	2669895.714	822.787
N–73	543204.487	2669953.068	817.554
N–74	543164.202	2670009.075	813.992
N–75	543134.338	2669979.457	811.723
N–76	543115.004	2669894.444	807.657
N–77	543038.959	2669832.835	805.997
N–78	543013.699	2669829.879	805.456
N–79	542962.794	2669850.712	803.575
N–80	542929.809	2669818.419	802.621
N–81	542865.643	2669805.202	801.751
N–82	542862.409	2669775.216	800.385
N–83	542956.579	2669687.511	794.958
N–84	542998.674	2669638.313	792.020

CONTROL POINT LIST

Point No.	Esating (m)	Northing (m)	R.L. (m)
N–85	542973.041	2669616.306	791.443
N–86	542905.543	2669582.978	788.171
N–87	542803.903	2669574.092	782.134
N–88	542629.460	2669493.570	770.537
N–89	542643.577	2669466.961	769.109
N–90	542687.789	2669428.258	767.092
N–91	542772.020	2669328.720	761.620
N–92	542825.258	2669311.265	758.779
N–93	542869.082	2669334.597	757.437
N–94	542938.976	2669299.914	755.702
N–95	543031.714	2669287.671	750.988
N–96	543000.847	2669248.241	749.052
N–97	542943.316	2669250.270	752.310
N–98	542904.719	2669234.728	750.626
N–99	542790.342	2669207.981	740.155
N–100	542746.463	2669207.140	737.721
N–101	542723.696	2669195.008	735.675
N–102	542627.243	2669226.709	730.436
N–103	542602.456	2669266.576	728.009
N–104	542528.553	2669323.185	723.572
N–105	542496.093	2669296.297	723.026
N–106	542458.670	2669346.427	720.294
N–107	542423.013	2669283.522	717.883
N–108	542374.022	2669248.561	716.333
N–109	542280.122	2669217.702	709.054
N–110	542210.899	2669136.310	702.129
N–111	542176.702	2669015.723	696.830
N–112	542270.882	2668961.662	690.776
N–113	542196.760	2668874.291	688.118
N–114	542128.556	2668885.084	688.232
N–115	542057.748	2668873.137	689.105
N–116	542047.746	2668897.385	689.262
N–117	542071.932	2668936.207	690.588
N–118	542027.235	2669023.108	695.671
N–119	541938.385	2669077.164	702.585
N–120	541889.637	2669077.532	704.043
N–121	541860.372	2669108.344	703.910
N–112	541936.005	2669112.348	706.827
H–1	541953.322	2669245.06	715.135
H–2	541939.621	2669308.47	719.913
H–3	541999.367	2669396.469	724.613
H–4	542053.018	2669489.004	732.504
H–5	542045.874	2669643.99	741.748
H–6	541937.342	2669760.603	754.481
H–7	541883.681	2669754.287	757.048
H–8	541692.023	2669742.116	770.684
H–9	541634.719	2669778.796	774.098
H–10	541666.202	2669831.803	777.611
H–11	541622.981	2669929.393	783.097
H–12	541590.382	2670031.579	788.182
H–13	541506.505	2670081.067	795.799
H–14	541436.634	2670088.09	799.955
H–15	541292.996	2670179.859	809.906
H–16	541286.386	2670219.493	812.153
H–17	541151.094	2670310.725	823.286
H–18	541139.488	2670342.29	825.326
H–19	541085.501	2670403.939	830.596
H–20	541076.759	2670489.919	834.293
H–21	541106.106	2670534.332	836.499
H–22	541174.091	2670429.045	841.752
H–23	541247.707	2670404.437	846.743
H–24	541325.06	2670465.225	850.401
H–25	541359.721	2670392.561	854.23
H–26	541416.167	2670340.498	858.429
H–27	541678.172	2670390.701	873.274
H–28	541662.542	2670511.814	881.829
H–29	541438.59	2670647.579	897.781
H–30	541418.285	2670688.222	899.367
H–31	541284.027	2670733.204	905.615
H–32	541186.452	2670833.005	918.299
H–33	541145.242	2670891.45	921.866
H–34	541019.151	2670901.386	927.479
H–35	540972.479	2670943.287	932.362
H–36	540965.489	2671016.16	936.199

CONTROL POINT LIST

Point No.	Esating (m)	Northing (m)	R.L. (m)
H–37	540946.124	2671186.904	946.686
H–38	540892.778	2671332.794	954.229
H–39	540957.499	2671404.6	960.071
H–40	540915.19	2671502.431	965.324
H–41	540899.496	2671616.263	970.303
H–42	540977.685	2671718.929	975.437
H–43	541051.396	2671742.498	978.741
H–44	541227.480	2671826.927	984.121
H–45	541191.923	2671859.336	986.199
H–46	541016.234	2672011.216	996.197
H–47	540971.535	2672082.603	1000.955
H–48	540898.807	2672086.678	1003.977
H–49	540815.739	2672134.157	1008.891
H–50	540750.295	2672204.522	1011.798
H–51	540640.600	2672201.598	1016.684
H–52	540478.495	2672294.908	1038.828
H–53	540485.934	2672358.168	1041.080
H–54	540452.299	2672415.936	1043.283
H–55	540496.770	2672474.516	1048.051
H–56	540613.505	2672604.467	1054.475
H–57	540657.274	2672619.198	1057.476
H–58	540729.151	2672681.697	1060.244
H–59	540807.487	2672723.907	1066.850
H–60	540803.270	2672752.853	1068.826
H–61	540738.397	2672767.257	1070.720
H–62	540690.510	2672750.446	1072.557
H–63	540547.237	2672870.653	1085.921
H–64	540561.174	2672904.399	1087.069
H–65	540546.517	2672950.577	1087.907
H–66	540552.371	2673151.682	1084.840
H–67	540476.777	2673230.625	1088.718
H–68	540539.868	2673296.377	1091.190
H–69	540622.963	2673454.992	1097.425
H–70	540635.288	2673461.892	1097.529
H–71	540665.762	2673541.931	1102.034
H–72	540755.684	2673570.750	1098.469
H–73	540882.821	2673570.907	1103.048
H–74	540924.950	2673778.710	1109.646
H–75	541051.128	2673817.416	1111.652
H–76	541146.508	2673808.554	1113.444
H–77	541140.227	2673872.090	1114.212
H–78	540997.734	2673902.474	1116.171
H–79	540923.944	2673960.865	1117.617
H–80	540843.592	2674099.204	1123.903
H–81	540910.529	2674278.334	1123.336
H–82	540816.466	2674415.902	1125.911
H–83	540875.390	2674465.139	1124.832
H–84	540921.063	2674540.655	1125.806
H–85	540875.388	2674465.145	1124.832
I1	541067.993	2674677.283	1128.431
I2	541106.019	2674684.350	1128.546
I3	541145.979	2674736.021	1130.476
I4	541133.203	2674813.680	1134.111
I5	541133.118	2674950.690	1135.360
I6	541109.672	2674943.760	1135.641
I7	541073.497	2674902.895	1137.078
I8	541022.608	2674875.433	1139.376
I9	540976.327	2674833.607	1142.502
I10	540920.116	2674819.074	1145.264
I11	540851.849	2674828.629	1148.429
I12	540825.874	2674867.317	1150.595
I13	540785.602	2674830.463	1152.621
I14	540742.455	2674821.509	1153.300
I15	540732.428	2674859.834	1154.368
I16	540679.775	2674923.954	1156.637
I17	540602.284	2674935.448	1157.577
I18	540535.857	2674897.758	1159.553
I19	540495.514	2674859.503	1161.004
I20	540453.734	2674843.394	1162.244
I21	540390.843	2674852.862	1163.436
I22	540306.966	2674880.211	1165.700
I23	540252.329	2674860.676	1169.283
I24	540213.714	2674882.340	1170.376
I25	540175.192	2674930.427	1171.552

CONTROL POINT LIST

Point No.	Esating (m)	Northing (m)	R.L. (m)
I26	540134.003	2674944.360	1172.777
I27	540076.079	2675066.325	1176.844
I28	540031.892	2675106.182	1180.719
I29	539978.059	2675113.525	1181.592
I30	539969.918	2675158.912	1182.823
I31	539958.637	2675233.336	1185.449
I32	539915.916	2675274.432	1189.885
I33	539882.222	2675285.842	1191.078
I34	539858.238	2675328.296	1190.856
I35	539867.923	2675414.921	1193.856
I36	539820.406	2675441.507	1196.055
I37	539771.627	2675459.066	1195.840
I38	539762.219	2675558.847	1194.293
I39	539807.803	2675605.838	1196.048
I40	539804.689	2675649.535	1197.388
I41	539788.863	2675697.493	1198.947
I42	539739.035	2675719.634	1200.890
I43	539699.350	2675758.409	1202.401
I44	539563.246	2675940.836	1210.703
I45	539501.047	2675963.695	1217.323
I46	539408.945	2675968.691	1221.279
I47	539335.137	2675838.540	1219.000
I48	539316.941	2675821.462	1219.544
I49	539206.585	2675593.206	1212.723
I50	539182.140	2675558.381	1212.123
I51	539177.356	2675481.992	1205.579
I52	539076.344	2675325.885	1194.318
I53	539068.743	2675283.856	1192.704
I54	539000.810	2675217.598	1190.719
I55	538975.392	2675151.979	1189.651
I56	539061.761	2675058.121	1186.763
I57	539131.092	2675010.107	1184.341
I58	539088.955	2674929.408	1179.886
I59	539055.881	2674886.090	1177.486
I60	539009.137	2674746.867	1175.468
I61	539051.523	2674714.916	1174.656
I62	539103.910	2674664.331	1171.918
I63	539115.571	2674629.192	1170.448
I64	539111.887	2674593.961	1169.290
I65	539154.135	2674551.239	1167.623
I66	539081.904	2674461.621	1166.041
I67	539092.899	2674439.351	1167.011
I68	539147.976	2674390.314	1169.585
I69	539224.377	2674315.510	1173.795
I70	539252.279	2674277.849	1175.330
I71	539203.288	2674234.828	1177.870
I72	539355.326	2673985.417	1196.537
I73	539343.641	2673884.308	1202.470
I74	539348.857	2673831.107	1205.890
I75	539312.061	2673812.645	1207.070
I76	539312.196	2673764.971	1210.101
I77	539294.642	2673741.491	1212.082
I78	539312.375	2673702.909	1213.992
I79	539286.078	2673681.471	1215.522
I80	539272.581	2673593.845	1220.454
I81	539257.225	2673554.585	1222.583
I82	539228.699	2673539.337	1223.778
I83	539213.018	2673492.396	1226.142
I84	539212.198	2673387.971	1231.869
I85	539194.436	2673359.646	1233.181
J86	530339.705	2665180.961	808.612
J87	530392.198	2665135.354	811.433
J88	530411.539	2665097.426	813.951
J89	530454.116	2665067.699	815.403
J90	530453.110	2665027.804	816.906
J91	530385.125	2665031.531	821.631
J92	530340.601	2665000.992	824.806
J93	530223.187	2664926.621	831.251
J94	530166.636	2664939.864	834.974
J95	530098.844	2664904.086	841.805
J96	530168.215	2664817.404	848.420
J97	530213.384	2664776.433	852.110
J98	530265.401	2664724.972	855.175
J99	530345.320	2664727.357	857.638

CONTROL POINT LIST

Point No.	Esating (m)	Northing (m)	R.L. (m)
J100	530355.525	2664712.417	858.240
J101	530347.749	2664648.166	862.128
J102	530428.511	2664615.869	863.899
J103	530475.094	2664521.551	863.341
J104	530538.507	2664463.204	862.079
J105	530592.665	2664492.327	864.555
J106	530622.910	2664500.627	866.166
J107	530679.827	2664577.788	872.983
J108	530704.947	2664646.438	878.485
J109	530693.356	2664533.870	885.114
J110	530643.482	2664471.710	887.220
J111	530536.805	2664411.750	892.312
J112	530458.066	2664475.217	897.739
J113	530420.870	2664513.984	901.145
J114	530385.677	2664553.975	903.294
J115	530337.544	2664580.636	900.478
J116	530275.528	2664659.151	896.528
J117	530216.987	2664644.229	898.114
J118	530233.149	2664591.670	899.289
J119	530279.413	2664560.308	899.965
J120	530289.639	2664512.674	900.380
J121	530327.056	2664247.511	900.703
J122	530266.657	2664152.603	891.380
J123	530176.787	2664031.186	879.104
J124	530222.263	2663945.877	869.014
J125	530284.778	2663965.634	866.861
J126	530319.253	2663999.013	865.389
J127	530406.905	2663979.855	859.817
J128	530434.685	2663911.637	850.944
J129	530363.944	2663838.180	842.096
J130	530346.192	2663750.612	839.922
J131	530273.610	2663739.607	837.557
J132	530256.864	2663785.839	835.318
J133	530209.786	2663796.281	835.282
J134	530168.983	2663763.968	832.879
J135	530122.503	2663744.895	828.935
K1	530008.560	2663630.757	820.546
K2	529988.187	2663604.690	817.616
K3	529999.925	2663553.173	815.144
K4	529962.071	2663435.691	804.510
K5	529928.768	2663414.024	800.801
K6	529915.697	2663367.877	797.926
K7	529800.907	2663275.671	785.321
K8	529855.082	2663217.625	778.159
K9	529858.226	2663143.688	773.555
K10	529843.449	2663040.630	767.794
K11	529797.570	2662976.884	763.739
K12	529844.626	2662928.203	760.362
K13	529882.172	2662917.815	757.880
K14	529894.954	2662862.387	754.775
K15	529845.187	2662858.442	750.456
K16	529763.782	2662879.758	748.022
K17	529745.450	2662881.232	748.109
K18	529706.957	2662914.379	745.513
K19	529685.322	2662922.918	743.557
K20	529639.454	2662992.423	737.863
K21	529566.384	2662964.898	734.609
K22	529484.470	2662916.216	726.163
K23	529452.424	2662894.146	723.814
K24	529438.897	2662846.126	720.469
K25	529468.513	2662801.586	718.932
K26	529455.656	2662739.051	714.508
K27	529499.231	2662708.918	710.389
K29	529527.972	2662610.903	707.185
K29	529496.365	2662591.453	706.087
K30	529439.212	2662611.390	706.877
K31	529360.290	2662638.123	713.486
K32	529327.742	2662648.565	714.989
K33	529274.068	2662555.779	716.949
K34	529265.632	2662475.205	718.421
K35	529291.669	2662411.790	719.651
K36	529258.287	2662385.975	720.308
K37	529129.473	2662365.049	722.709
K38	529149.785	2662331.837	722.727

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: DECEMBER, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

LIST OF CONTROL PILLAR

SUBMISSION TYPE :

FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

CONSULTANT :

CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092.

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/PILLAR

REVISION MKD. - R0		SHEET NO. - 06 OF 10	
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

CONTROL POINT LIST

Point No.	Esating (m)	Northing (m)	R.L. (m)
K39	529139.879	2662175.657	724.446
K40	529032.952	2662133.623	721.872
K41	529012.518	2662121.552	719.314
K42	528958.256	2662090.423	711.473
K43	528998.174	2662053.227	709.202
K44	529024.742	2661941.758	705.496
K45	528962.788	2661885.540	706.527
K46	528948.888	2661864.281	706.715
K47	528915.963	2661857.828	706.145
K48	528829.542	2661815.056	707.699
K49	528807.396	2661789.446	708.245
K50	528758.618	2661829.294	708.245
K51	528718.010	2661710.586	710.413
K52	528691.019	2661657.371	712.189
K53	528661.386	2661588.203	715.877
K54	528600.303	2661540.817	720.866
K55	528584.743	2661505.765	722.337
K56	528424.656	2661414.884	730.418
K57	528373.932	2661345.26	733.888
K58	528366.057	2661285.391	736.975
K59	528359.634	2661240.273	736.371
K60	528397.448	2661216.483	738.143
K61	528414.106	2661157.221	741.661
K63	528179.815	2661073.138	736.39
K64	528141.018	2661007.272	734.536
K65	528145.864	2660970.39	735.073
K66	528193.185	2660879.487	737.569
K67	528252.558	2660845.143	741.521
K68	528132.703	2660785.9	748.259
K69	528011.542	2660709.894	757.386
K70	527977.605	2660613.337	764.179
K71	527903.185	2660543.1	761.989
K72	527875.188	2660516.531	762.064
K73	527885.706	2660456.327	761.689
K74	527822.124	2660382.132	759.499
K75	527798.59	2660339.748	759.239
K76	527722.223	2660330.733	756.318
K77	527688.053	2660340.435	754.891
K78	527599.599	2660319.163	751.555
K79	527547.136	2660330.324	751.046
K80	527582.913	2660194.765	747.943
K81	527484.668	2660118.186	743.316
K81	527425.252	2660111.535	740.468
K82	527396.895	2660039.782	737.816
K83	527333.099	2660029.657	737.049
K84	527280.237	2659981.294	734.95
K85	527222.208	2659907.709	729.588
K86	527160.309	2659918.181	725.763
K87	527056.041	2659927.722	719.910
K88	526979.420	2659754.177	709.977
K89	526927.050	2659698.215	707.390
K90	526912.495	2659587.680	700.982
K91	526783.978	2659545.529	697.057
K92	526744.112	2659502.238	695.944
K93	526769.908	2659442.720	693.003
K94	526824.209	2659440.449	689.770
K95	526859.357	2659389.274	683.465
K–96	526858.284	2659304.463	679.210
K–97	526764.463	2659214.318	670.039
K–98	526674.289	2659231.029	667.893
K–99	526604.085	2659173.950	660.212
K–100	526596.478	2659047.188	653.572
K–101	526577.197	2659005.617	649.878
K–102	526570.596	2658858.052	640.062
K–103	526493.951	2658882.286	635.412
K–104	526460.542	2658940.083	633.402
K–105	526310.408	2658941.929	624.528
K–106	526256.892	2658966.086	620.196
K–107	526260.698	2658911.948	617.353
K–108	526276.149	2658868.869	614.958
K–109	526205.565	2658828.592	609.226
K–110	526178.969	2658803.702	605.745
K–111	526195.260	2658748.221	602.354
K–112	526174.954	2658676.927	594.817

CONTROL POINT LIST

Point No.	Esating (m)	Northing (m)	R.L. (m)
K–113	526092.969	2658691.679	590.915
K–114	526057.872	2658685.083	587.770
K–115	526025.518	2658591.716	580.254
K–116	525944.346	2658474.775	570.049
K–117	525963.947	2658436.664	566.263
K–118	526025.828	2658443.233	564.603
K–119	526014.883	2658362.103	555.695
K–120	525984.502	2658255.551	546.086
K–121	525934.038	2658246.617	543.110
K–122	525868.350	2658292.002	540.826
K–123	525833.288	2658154.269	535.046
K–124	525795.679	2658137.522	533.752
K–125	525724.391	2658056.420	524.149
K–126	525725.384	2658013.315	520.955
K–127	525740.814	2657894.617	510.924
K–128	525769.941	2657832.952	504.808
K–129	525750.086	2657797.195	502.161
K–130	525718.615	2657685.093	492.142
K–131	525744.194	2657656.611	488.962
K–132	525872.824	2657598.766	476.719
K–133	525960.959	2657578.760	476.721
K–134	526041.845	2657488.650	473.898
K–135	526062.607	2657315.400	466.877
K–136	526033.377	2657284.737	464.035
K–137	526033.211	2657219.329	456.602
K–138	525946.941	2657034.151	440.856
K–139	525929.842	2656954.537	438.315
K–140	525854.339	2656818.818	430.655

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: DECEMBER, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

LIST OF CONTROL PILLAR

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

CONSULTANT :
CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092.

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/PILLAR

REVISION MKD. - R0 | SHEET NO. - 07 OF 10

DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

BM LIST

BM No.	Esating (m)	Northing (m)	R.L. (m)
BM0/1	570945.275	2692547.122	826.512
BM0/2	570794.407	2692256.346	829.246
BM1/1	570482.147	2691393.606	836.782
BM1/2	570358.256	2691048.668	842.230
BM1/3	570265.553	2690788.486	840.905
BM2/1	570188.015	2690184.936	831.863
BM2/2	570080.206	2689971.818	830.081
BM2/3	569989.786	2689764.243	820.838
BM3/1	569999.951	2689349.644	823.670
BM3/2	569993.259	2689101.617	819.478
BM3/3	569892.112	2688933.893	820.701
BM4/1	569630.142	2688529.383	819.273
BM4/2	569495.460	2688341.886	817.265
BM4/3	569379.086	2688149.739	817.131
BM5–1	569068.759	2687508.404	823.051
BM5–2	568969.320	2687276.844	824.567
BM5–3	568769.062	2687098.318	830.878
BM6–1	568524.557	2686912.986	831.741
BM6–2	568364.057	2686646.133	833.243
BM6–3	568223.733	2686501.574	834.704
BM7–1	567918.520	2686344.698	839.394
BM7–2	567748.477	2686082.067	853.082
BM7–3	567730.021	2685877.394	867.611
BM8–1	567723.693	2685399.860	892.480
BM8–2	567764.896	2685172.277	882.013
BM8–3	567637.561	2685047.371	874.034
BM9–1	567495.758	2684928.860	860.902
BM9–2	567457.554	2684749.768	862.214
BM9–3	567323.352	2684587.566	863.313
BM10–1	567017.681	2683942.413	864.813
BM10–2	567212.061	2683863.133	857.163
BM10–3	567201.824	2683757.729	858.232
BM11–1	567068.275	2683639.762	854.044
BM11–2	567134.237	2683379.477	859.975
BM11–3	566941.916	2683116.457	868.121
BM12–1	566987.778	2682650.864	866.242
BM12–2	566876.468	2682340.893	868.246
BM12–3	566918.749	2682100.507	859.231
BM13–1	566777.532	2681748.929	861.112
BM13–2	566723.051	2681607.439	867.532
BM13–3	566536.779	2681432.786	870.649
BM14–1	566407.902	2681177.718	869.857
BM14–2	566387.275	2680874.181	864.075
BM14–3	566370.528	2680661.206	869.386
BM15–1	566274.599	2680141.301	866.600
BM15–2	566436.196	2680008.594	864.478
BM16–1	566293.297	2679745.381	875.535
BM16–2	566075.064	2679779.202	872.030
BM16–3	566052.836	2679679.869	875.271
BM17–1	566037.573	2679306.786	885.777
BM17–2	565905.010	2679150.307	893.368
BM17–3	566053.783	2679033.697	899.043
BM18–1	565904.388	2678711.142	901.614
BM18–2	565908.512	2678437.914	892.379
BM18–3	566052.949	2678276.412	896.955
BM19–1	566447.183	2678243.944	880.476
BM19–2	566734.029	2678112.759	865.344
BM19–3	566820.795	2678010.880	865.180
BM20–1	566361.063	2677868.737	865.282
BM20–2	566172.233	2677949.888	857.834
BM20–3	566241.764	2677863.586	862.276
BM21–1	565848.788	2677679.515	859.282
BM21–2	565609.441	2677786.953	862.363
BM21–3	565364.261	2677771.402	870.413

BM LIST

BM No.	Esating (m)	Northing (m)	R.L. (m)
BM22–1	564921.648	2677572.510	896.107
BM22–2	564760.342	2677429.355	910.774
BM22–3	564710.528	2677284.946	925.595
BM23–1	564536.196	2677182.888	948.004
BM23–2	564466.600	2677036.776	965.547
BM23–3	564312.657	2676981.275	982.099
BM24–1	564196.958	2676658.632	1000.264
BM24–2	564155.369	2676491.092	998.796
BM24–3	564045.519	2676359.679	998.892
BM25–1	564023.830	2675893.720	985.758
BM25–2	563861.835	2675766.849	981.394
BM25–3	563641.604	2675603.534	989.218
BM26–1	563439.496	2675047.287	992.694
BM26–3	563203.775	2674742.960	1010.100
BM27–1	563242.255	2674410.602	999.659
BM27–2	563124.339	2674260.641	980.744
BM27–3	563127.495	2673978.914	973.018
BM28–1	563000.369	2673517.914	979.256
BM28–2	562846.227	2673347.276	981.606
BM28–3	562852.880	2673114.292	987.130
BM29–1	562826.465	2672566.434	1014.096
BM29–2	562725.155	2672392.709	1008.022
BM29–3	562656.629	2672319.339	1005.846
BM30/1	562318.764	2672133.042	997.460
BM30/2	562048.600	2672092.538	988.544
BM30/3	561957.046	2672000.343	976.761
BM31/1	561772.411	2671844.480	969.237
BM31/2	561651.696	2671749.107	970.664
BM31/3	561473.392	2671422.032	955.842
BM32/1	561182.599	2671385.972	996.881
BM32/2	560917.745	2671343.187	1009.641
BM32/3	560853.415	2671343.964	1010.012
BM33/1	560557.358	2671287.495	1044.738
BM33/2	560389.780	2671195.763	1062.750
BM33/3	560332.575	2671029.761	1063.075
BM34/1	560069.335	2670661.866	1043.041
BM34/2	559943.654	2670360.977	1020.378
BM34/3	559837.610	2670507.117	1016.313
BM35–1	559385.858	2670601.350	997.753
BM35–2	559215.710	2670421.578	984.846
BM36–1	558805.842	2670572.082	969.131
BM36–2	558606.915	2670573.763	967.329
BM36–3	558543.093	2670472.950	960.901
BM37–1	558327.721	2670139.391	938.128
BM37–2	558277.602	2669986.562	931.518
BM37–3	558062.311	2670152.800	920.813
BM38–1	557784.328	2670648.651	878.548
BM38–2	557595.356	2671013.519	856.287
BM38–3	557488.354	2671100.579	849.482
BM39–1	557639.585	2671471.228	823.332
BM39–2	557807.493	2671594.266	808.616
BM39–3	558003.585	2671503.939	795.796
BM–40/1	558427.939	2671612.585	772.157
BM–40/2	558587.791	2671677.089	759.718
BM–40/3	558502.361	2671657.267	757.833
BM–41/1	558132.095	2671833.792	737.873
BM–41/2	557872.067	2671918.960	720.581
BM–41/3	557721.908	2671890.902	710.210
BM–42/1	557483.729	2671896.294	692.383
BM–42/2	557311.865	2671888.001	683.180
BM–42/3	557203.309	2671985.119	670.827
BM–43/1	556947.951	2671682.645	651.809
BM–43/2	556859.429	2671505.902	646.219
BM–43/3	556716.181	2671225.921	637.735

BM LIST

BM No.	Esating (m)	Northing (m)	R.L. (m)
BM–44–1	556618.184	2670928.110	631.227
BM–44–2	556766.699	2670741.724	625.070
BM–44–3	556741.217	2670594.933	621.720
BM45–1	556373.512	2670412.207	608.645
BM45–2	556047.647	2670576.632	597.989
BM45–3	555929.061	2670533.369	594.516
BM46–1	555748.358	2670358.629	597.047
BM46–2	555767.782	2670144.897	603.123
BM47–1	554995.904	2670015.886	617.389
BM47–2	554772.848	2669768.968	601.894
BM47–3	554653.322	2669593.916	594.596
BM48–1	554783.338	2669117.487	615.523
BM48–2	554511.544	2669042.018	605.610
BM48–3	554344.919	2668868.061	605.896
BM49–1	554369.413	2668653.450	609.138
BM49–2	554274.466	2668412.908	603.648
BM49–3	554192.029	2668207.807	606.458
BM–50/1	553927.384	2667927.818	612.307
BM–50/2	553861.793	2667612.074	614.847
BM–50/3	553547.673	2667473.894	615.176
BM–51/1	553497.539	2667183.825	615.048
BM–51/2	553556.249	2667013.138	617.907
BM–51/3	553408.423	2666855.753	621.814
BM–52/1	553224.443	2666501.898	657.752
BM–52/2	553169.276	2666390.090	672.765
BM–52/3	553182.380	2666091.691	692.363
BM–53/1	552981.578	2666136.536	706.852
BM–53/2	552858.984	2666215.011	725.783
BM–53/3	552691.484	2666206.369	743.162
BM–54/1	552434.696	2666015.063	770.390
BM–54/2	552218.783	2665896.032	797.400
BM–54/3	552175.640	2665783.795	813.086
BM–55/1	552459.951	2665520.823	833.694
BM–55/2	552329.968	2665486.336	841.844
BM–55/3	552042.561	2665396.235	866.215
BM–56/1	551733.506	2665144.433	898.327
BM–56/2	551582.953	2665086.567	906.874
BM–56/3	551430.987	2664894.336	923.198
BM–57/1	551265.733	2665111.423	954.974
BM–57/2	551041.845	2665247.141	972.216
BM–57/3	551078.827	2665440.883	982.265
BM–58/1	550974.549	2665836.877	999.897
BM–58/2	550835.138	2665978.014	1006.875
BM–58/3	550721.187	2666005.156	1019.971
BM–59/1	550555.325	2666335.444	1052.270
BM–59/2	550489.930	2666398.414	1067.015
BM–59/3	550431.690	2666363.344	1076.922
BM60–1	550037.607	2666086.848	1069.147
BM60–2	549869.466	2665959.848	1062.595
BM60–3	549781.428	2665814.261	1056.757
BM61–1	549444.323	2665891.295	1015.099
BM61–2	549549.777	2665657.205	1003.748
BM61–3	549603.594	2665616.183	994.098
BM62–1	549322.265	2665386.969	980.793
BM62–2	549153.244	2665242.425	980.628
BM62–3	549063.593	2665024.375	980.720
BM63–1	548936.536	2664571.393	978.785
BM63–2	549000.739	2664426.570	975.484
BM63–3	548898.315	2664221.764	969.461
BM64–1	548856.242	2663767.037	965.923
BM64–2	548824.546	2663969.204	950.880
BM64–3	548791.661	2664064.419	945.746
BM–65/1	548681.938	2664543.427	906.957
BM–65/2	548648.922	2664753.696	891.596

BM LIST

BM No.	Esating (m)	Northing (m)	R.L. (m)
BM–65/3	548677.809	2664870.817	884.608
BM–66/1	548654.202	2665586.110	827.880
BM–66/2	548713.513	2665818.783	816.328
BM67–1	548707.143	2666286.635	802.550
BM67–2	548664.845	2666529.365	789.014
BM67–3	548598.614	2666720.977	771.729
BM–68/1	548406.502	2667035.084	752.803
BM–68/2	548337.135	2667234.700	757.771
BM–68/3	548350.948	2667357.706	761.017
BM–69/1	548601.100	2667634.314	778.925
BM–69/2	548500.087	2667877.495	792.635
BM–69/3	548529.842	2667955.578	796.737
BM70/1	548488.958	2668560.327	825.489
BM–70/2	548315.501	2668575.284	825.989
BM–70/3	548135.677	2668551.673	822.157
BM–71/1	547851.473	2668627.120	811.911
BM71/2	547706.962	2668660.267	804.018
BM–71/3	547905.662	2668730.489	803.429
BM–72/1	548288.408	2668803.874	771.514
BM72/2	548493.031	2668890.710	755.298
BM–72/3	548305.995	2668924.822	741.954
BM–73/1	548150.114	2669388.755	724.698
BM–73/3	548043.573	2669601.180	737.158
BM–74/1	547915.810	2669854.740	755.161
BM–74/2	547841.168	2669932.320	761.539
BM–74/3	547922.841	2670076.613	775.954
BM75–1	547608.818	2669823.981	849.168
BM75–2	547523.395	2669874.094	859.681
BM75–3	547512.863	2669960.229	867.529
BM76–1	547580.601	2670241.135	901.403
BM76–2	547545.860	2670405.022	916.113
BM–76/3	547358.717	2670210.017	932.160
BM–77/1	547272.511	2669886.068	950.827
BM–77/2	547138.333	2669963.964	957.247
BM–77/3	547080.829	2670093.851	965.891
BM–78/1	547008.482	2670271.271	988.978
BM–78/2	547019.950	2670448.319	1007.534
BM–78/3	546919.798	2670627.447	1025.671
BM–79/1	546534.201	2670578.987	1038.064
BM–79/2	546392.544	2670359.797	1050.977
BM–79/3	546336.696	2670125.261	1071.020
BM–80/1	546041.071	2670249.639	1075.379
BN–80/2	545912.070	2670266.573	1070.243
BM–80/3	545763.806	2670342.126	1064.505
BM–81/1	545256.458	2670324.819	1044.789
BM–81/2	545087.953	2670414.758	1037.640
BM–81/3	545015.449	2670668.371	1034.150
BM82/1	544785.589	2670747.917	1008.655
BM–82/2	544804.690	2670551.987	1000.755
BM–82/3	544783.961	2670310.361	989.278
BM–83/1	544556.986	2670052.254	960.495
BM 83/3	544385.683	2669971.748	945.904
BM–84/1	544214.223	2669732.304	925.390
BM–84/2	544058.011	2669683.584	916.357
BM–84/3	543980.254	2669587.276	906.890
BM–85/1	543518.494	2670157.555	867.003
BM–85/2	543484.953	2669912.240	855.052
BM–85/3	543585.294	2669658.971	841.847
BM–86–2	543125.911	2669950.931	810.221
BM–86/3	542994.553	2669852.669	804.284
GPS–87	542886.597	2669697.673	798.631
BM–87/1	542887.047	2669589.377	787.574
BM–87/2	542677.819	2669586.290	775.850
BM–88/1	542875.857	2669231.222	746.447

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: DECEMBER, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

LIST OF CONTROL PILLAR

SUBMISSION TYPE :

FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

CONSULTANT :

CETEST Engineering Consultants
An ISO 9001, 14001 & OHSAS 18001 Certified Company

CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092.

CE TESTING CO. PVT. LTD. KOLKATA 700 092 124A N.S.C. BOSE ROAD

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/PILLAR

REVISION MKD. - R0

SHEET NO. - 08 OF 10

DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

BM LIST

BM No.	Esating (m)	Northing (m)	R.L. (m)
BM-88/2	542699.659	2669228.069	734.069
BM-88/3	542531.747	2669328.311	723.682
BM-88/4	542360.328	2669256.580	716.191
BM-89/1	542174.476	2669033.412	697.461
BM-89/2	542175.787	2668867.497	686.979
BM-89/3	542072.174	2668947.043	690.952
BM-90/1	542019.380	2669405.919	725.967
BM-90/2	542052.752	2669651.818	742.554
BM-90/3	541964.321	2669751.731	753.613
BM-91/1	541676.834	2669838.710	778.332
BM-91/2	541557.612	2670071.204	791.865
BM-91/3	541356.828	2670132.945	803.740
BM-92/1	541122.375	2670494.327	838.209
BM-92/2	541196.582	2670407.263	844.415
BM-92/3	541408.321	2670334.981	858.733
BM-93/1	541555.814	2670532.879	887.207
BM-93/2	541401.606	2670693.233	899.957
BM-93/3	541188.083	2670820.413	917.611
BM-94/1	540951.354	2671193.551	947.032
BM-94/2	540956.008	2671425.627	960.891
BM-94/3	540906.360	2671617.165	970.730
BM-95/1	540884.346	2672112.836	1006.296
BM-95/2	540672.051	2672207.728	1015.217
BM-96/1	540487.591	2672299.905	1039.008
BM-96/2	540594.988	2672537.070	1053.370
BM-97/1	540575.121	2672829.185	1082.815
BM-97/2	540504.915	2673001.058	1087.936
BM-97/3	540533.476	2673180.170	1086.004
BM-97/4	540594.676	2673319.212	1092.051
BM-98/1	540911.699	2673576.609	1103.735
BM-98/2	540906.439	2673760.732	1109.604
BM-99/1	540971.762	2673925.985	1116.487
BM-99/2	540849.660	2674100.018	1123.911
BM-99/3	540957.838	2674200.830	1121.012
BM-99/4	540751.283	2674380.081	1124.489
BM100/1	541139.091	2674806.129	1133.989
BM100/2	541034.399	2674889.356	1138.964
BM101/1	540608.276	2674938.729	1157.644
BM101/2	540408.958	2674855.435	1163.337
BM101/3	540228.416	2674879.951	1170.481
BM101/4	540094.128	2675008.442	1176.891
BM102/1	539862.636	2675433.242	1195.015
BM102/2	539767.243	2675536.633	1193.694
BM102/3	539715.814	2675750.567	1201.612
BM103/1	539329.885	2675827.407	1219.309
BM103/2	539237.294	2675664.122	1211.946
BM103/3	539169.752	2675491.198	1206.674
BM104/1	539008.149	2675108.478	1187.583
BM104/2	539101.841	2674967.332	1182.142
BM104/3	538980.334	2674817.918	1175.447
BM105/1	539224.555	2674308.637	1174.195
BM105/2	539274.087	2674108.748	1186.388
BM105/3	539347.436	2673980.017	1196.853
BM106/1	539269.092	2673634.248	1218.666
BM106/2	539180.402	2673453.858	1228.362
BM106/3	539184.862	2673278.439	1238.053
BM107/1	539196.556	2672936.823	1256.431
BM107/2	539087.324	2672820.490	1270.672
BM107/3	538981.726	2672922.264	1270.146
BM108/1	538645.412	2673106.053	1252.635
BM108/2	538553.486	2673062.850	1245.532
BM108/3	538421.251	2673141.448	1236.163
BM109/1	538369.720	2673479.023	1219.683
BM109/2	538347.546	2673622.269	1214.184

BM LIST

BM No.	Esating (m)	Northing (m)	R.L. (m)
BM109/3	538312.009	2673807.735	1207.211
BM-110/1	538076.808	2674298.257	1183.479
BM-110/2	537848.503	2674474.078	1170.812
BM-110/3	537772.909	2674303.758	1162.438
BM-111/1	537823.827	2673995.952	1159.401
BM-111/2	537902.381	2673810.901	1173.738
BM-111/3	538002.723	2673689.617	1178.078
BM-112/1	537931.534	2673330.018	1188.255
BM-112/2	537917.568	2673102.955	1195.770
BM-112/3	537811.540	2672970.873	1205.350
BM-113/1	537590.147	2672639.310	1213.632
BM-113/2	537456.277	2672584.322	1206.596
BM-113/3	537266.418	2672481.733	1196.231
BM-114/1	537238.121	2672288.169	1176.883
BM-114/2	537126.689	2672408.677	1170.549
BM-115/1	537326.005	2672804.083	1148.481
BM-115/2	537368.240	2672926.474	1140.501
BM-115/3	537474.737	2673155.944	1124.672
BM-115/4	537387.577	2673098.976	1113.397
BM-116/1	537142.878	2672864.716	1095.722
BM-116/2	536928.218	2672769.899	1083.743
BM-116/3	536766.337	2672747.297	1074.642
BM-117/1	536399.483	2672893.632	1055.233
BM-117/2	536175.026	2672833.292	1041.317
BM-117/3	536089.505	2672889.263	1030.666
BM-118/1	536018.805	2672593.337	1010.768
BM-118/2	535953.722	2672386.293	1002.252
BM-118/3	535956.693	2672257.129	990.633
BM-119/1	535801.226	2671889.247	973.570
BM-119/2	535799.797	2671976.430	961.564
BM-119/3	535851.572	2672277.500	945.467
BM120/1	535745.144	2672530.667	912.089
BM120/2	535706.204	2672415.619	900.947
BM120/3	535602.832	2672289.121	884.206
BM121/1	535370.147	2672024.012	863.145
BM121/2	535331.787	2671788.763	847.547
BM121/3	535320.539	2671596.823	837.263
BM122/1	535118.268	2671223.393	809.341
BM122/2	534925.546	2671252.592	802.547
BM122/3	534722.110	2671196.534	791.925
BM123/1	534502.579	2670897.982	768.631
BM123/2	534368.132	2670888.857	758.749
BM123/3	534284.249	2670663.130	745.858
BM124/1	534176.217	2670307.190	717.236
BM124/2	534077.080	2670215.539	702.989
BM124/3	534144.823	2670064.485	693.180
BM125/1	534303.426	2669869.394	675.817
BM125/2	534471.340	2669779.694	677.063
BM125/3	534612.454	2669813.357	673.870
BM126/1	535070.370	2669884.909	657.495
BM126/2	535313.634	2669801.575	649.787
BM126/3	535504.039	2669888.214	640.993
BM127/1	535547.724	2670213.667	624.794
BM127/2	535568.768	2670387.006	610.772
BM127/3	535534.025	2670614.322	612.860
BM128/1	535721.380	2670376.057	623.989
BM128/2	535776.789	2670109.334	628.998
BM128/3	535952.511	2669995.731	634.337
BM129/1	536142.890	2669696.359	615.657
BM129/2	536176.937	2669518.689	606.117
BM129/3	536074.163	2669529.488	605.571
BM-130/1	535645.543	2669686.012	615.979
BM-130/2	535546.535	2669524.429	616.029
BM-130/3	535451.558	2669399.349	620.008

BM LIST

BM No.	Esating (m)	Northing (m)	R.L. (m)
BM-131/1	535481.974	2668969.940	632.834
BM-131/2	535483.941	2668826.051	631.572
BM-131/3	535402.070	2669022.806	630.532
BM-132/1	535133.756	2669400.481	634.728
BM-132/2	535123.063	2669493.069	637.672
BM-132/3	534997.805	2669487.215	633.088
BM-133/1	534480.950	2669511.579	610.739
BM-133/2	534415.920	2669448.103	609.317
BM-133/3	534254.751	2669336.118	600.945
BM-134/1	533875.207	2669334.700	580.117
BM-134/2	533676.810	2669212.796	571.014
BM140/1	532504.694	2666028.297	626.601
BM140/2	532319.860	2666019.533	647.933
BM140/3	532122.076	2665834.546	667.539
BM141/1	531836.194	2665623.865	690.722
BM141/2	531603.763	2665495.353	700.636
BM141/3	531518.691	2665295.119	705.420
BM142/1	531193.594	2665112.476	707.047
BM142/2	531127.373	2665050.565	713.325
BM142/3	531006.014	2664990.432	718.673
BM143/1	530707.225	2665031.995	717.630
BM143/2	530800.781	2665126.263	724.237
BM143/3	530911.223	2665291.706	731.494
BM144/1	530755.742	2665390.502	755.753
BM144/2	530849.505	2665227.862	762.966
BM144/3	530633.446	2665332.950	776.304
BM144/4	530420.784	2665428.904	786.978
BM145/1	530360.367	2665150.481	809.967
BM145/2	530336.362	2664987.144	825.507
BM146/1	530206.885	2664818.296	850.654
BM146/2	530374.021	2664633.577	862.679
BM146/3	530514.532	2664482.871	862.631
BM147/1	530705.318	2664628.096	882.238
BM147/2	530594.301	2664445.762	890.057
BM147/3	530422.108	2664522.442	901.919
BM148/1	530284.634	2664501.710	900.654
BM148/2	530338.989	2664338.133	902.030
BM148/3	530252.436	2664148.133	891.072
BM149/1	530371.616	2664003.014	863.060
BM149/2	530411.734	2663836.681	844.534
BM149/3	530226.763	2663784.491	836.254
BM150/1	529962.841	2663476.839	807.026
BM150/2	529873.412	2663319.812	791.336
BM150/3	529845.537	2663117.293	772.523
BM151/1	529684.320	2662928.684	743.419
BM151/2	529493.015	2662955.398	729.753
BM152/1	529403.678	2662606.034	710.446
BM152/2	529281.294	2662544.260	717.555
BM152/3	529175.919	2662409.081	721.414
BM153/1	528956.750	2662125.908	714.431

BM LIST

BM No.	Esating (m)	Northing (m)	R.L. (m)
BM153/2	528912.051	2661863.014	706.041
BM153/3	528716.699	2661821.846	708.699
BM154/1	528476.748	2661410.439	729.245
BM154/2	528374.991	2661286.350	737.281
BM154/3	528256.571	2661073.394	736.675
BM155/1	528047.180	2660727.348	754.391
BM155/2	527918.613	2660584.345	763.091
BM156/1	527274.410	2659981.728	734.703
BM157/1	526981.176	2659810.522	714.869
BM157/2	526976.067	2659623.984	703.105
BM157/1	526981.176	2659810.522	714.869
BM157/2	526976.067	2659623.984	703.105
BM-158/1	526590.408	2659187.950	661.729
BM-158/2	526570.314	2658947.859	646.038
BM-159/1	526194.471	2658829.442	608.746
BM-159/2	526078.340	2658690.780	589.752
BM-161/1	526005.194	2657184.446	453.316

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: DECEMBER, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

LIST OF CONTROL PILLAR

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

CONSULTANT :
CETEST Engineering Consultants
An ISO 9001, 14001 & OHSAS 18001 Certified Company
CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092.

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/PILLAR

REVISION MKD. - R0 | SHEET NO. - 09 OF 10

DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

GPS LIST

GPS No.	Easting (m)	Northing (m)	Elevation (m)
GPS–0	571055.149	2692843.122	814.882
GPS–0A	571004.382	2692735.998	820.571
GPS–1	570592.066	2691793.129	830.518
GPS–2	570188.586	2690459.974	836.560
GPS–3	569994.926	2689573.503	820.736
GPS–4	569774.771	2688778.400	821.810
GPS–5	569195.014	2687909.551	822.409
GPS–5A	569127.342	2687763.427	822.033
GPS–6	568703.814	2687081.426	832.555
GPS–7	568106.493	2686465.752	835.734
GPS–8	567696.140	2685618.302	885.044
GPS–9	567533.750	2685169.941	863.256
GPS–10	567184.813	2684288.565	872.666
GPS–10A	567112.565	2684138.209	867.424
GPS–11	567152.356	2683703.532	856.043
GPS–12	566881.409	2682833.784	877.740
GPS–13	566957.739	2682012.114	859.978
GPS–14	566509.811	2681374.271	869.662
GPS–15	566433.620	2680373.234	860.598
GPS–15A	566408.066	2680253.673	866.481
GPS–16	566475.362	2679965.731	868.353
GPS–17	566134.804	2679403.408	881.929
GPS–18	566007.325	2678905.389	901.639
GPS–19	566195.999	2678276.646	899.379
GPS–20	566780.299	2677925.708	863.048
GPS–20A	566637.585	2677895.010	862.889
GPS–21	566145.951	2677634.750	860.660
GPS–22	565168.939	2677712.703	869.588
GPS–23	564491.018	2677375.365	939.804
GPS–24	564251.327	2676911.287	992.454
GPS–25	564042.005	2676248.887	998.571
GPS–25A	564031.385	2676131.045	992.939
GPS–26	563417.456	2675376.998	1002.034
GPS–27	563208.776	2674654.436	1005.926
GPS–28	563103.102	2673719.513	973.298
GPS–29	562832.809	2672893.866	1001.090
GPS–30	562583.921	2672297.905	1006.014
GPS–30A	562511.955	2672207.965	997.407
GPS–31	561907.136	2671883.948	973.254
GPS–32	561366.155	2671244.181	982.192
GPS–33	560690.937	2671378.291	1017.223
GPS–34	560171.512	2670925.810	1061.865
GPS–35	559731.035	2670554.268	1012.192
GPS–35A	559576.575	2670526.411	1005.904
GPS–36	559007.931	2670455.854	977.154
GPS–37	558555.705	2670289.593	951.560
GPS–38	557849.992	2670408.031	892.747
GPS–39	557427.148	2671171.593	845.464
GPS–40	558110.261	2671587.189	788.137
GPS–40A	558193.759	2671625.171	784.646
GPS–41	558431.797	2671703.137	754.459
GPS–42	557646.358	2671917.769	706.944
GPS–43	557089.511	2671863.295	662.006
GPS–44	556673.894	2671007.746	633.974
GPS–45	556683.653	2670456.759	617.674
GPS–45A	556601.824	2670391.697	614.794
GPS–46	555789.927	2670534.294	593.185
GPS–47	555233.684	2670005.234	624.574
GPS–48	554834.868	2669343.813	603.472
GPS–49	554278.620	2668797.898	609.325
GPS–50	554137.942	2668058.626	605.789
GPS–50A	554118.204	2667980.013	605.481
GPS–51	553506.118	2667375.704	614.329

GPS LIST

GPS No.	Easting (m)	Northing (m)	Elevation (m)
GPS–52	553419.606	2666641.600	639.841
GPS–53	553108.805	2666136.636	697.880
GPS–54	552537.174	2666191.690	754.465
GPS–55	552239.948	2665704.029	819.194
GPS–55A	552289.475	2665668.003	821.640
GPS–56	551945.344	2665108.643	887.423
GPS–57	551234.148	2664926.153	939.824
GPS–58	551094.517	2665684.218	992.052
GPS–59	550548.729	2666093.880	1033.182
GPS–60	550272.354	2666266.469	1072.192
GPS–60A	550166.452	2666269.303	1069.266
GPS–61	549673.975	2665923.100	1031.383
GPS–62	549536.667	2665510.432	987.880
GPS–63	548949.629	2664798.684	982.392
GPS–64	548971.110	2663949.572	970.543
GPS–65	548709.463	2664307.574	927.742
GPS–65A	548759.157	2664350.564	923.658
GPS–66	548575.936	2665199.850	858.202
GPS–67	548742.838	2666052.022	811.180
GPS–68	548591.644	2666882.904	759.357
GPS–69	548457.640	2667430.069	767.825
GPS–70	548421.308	2668297.332	818.801
GPS–70A	548508.966	2668371.222	820.082
GPS–71	548006.432	2668554.691	817.065
GPS–72	548065.972	2668812.761	787.409
GPS–73	548313.500	2669187.212	732.110
GPS–74	548015.671	2669676.380	739.880
GPS–75	547854.411	2669654.911	822.075
GPS–75A	547856.585	2669742.915	827.823
GPS–76	547679.773	2670044.216	879.835
GPS–77	547336.152	2670138.064	935.635
GPS–78	546904.570	2670142.209	979.064
GPS–79	546727.530	2670694.771	1032.663
GPS–80	546203.043	2670111.695	1078.052
GPS–80A	546140.882	2670181.964	1078.341
GPS–81	545433.478	2670339.141	1054.137
GPS–82	544893.773	2670999.492	1023.086
GPS–83	544690.973	2670057.970	972.798
GPS–84	544281.596	2669951.665	940.174
GPS–85	543625.317	2669860.043	883.301
GPS–85A	543604.494	2669923.768	880.314
GPS–86	543484.120	2669672.090	836.682
GPS–87	542886.597	2669697.673	798.631
GPS–88	542718.834	2669358.282	764.855
GPS–89	542228.176	2669172.721	704.000
GPS–90	541993.491	2669127.466	709.869
GPS–90A	541985.355	2669187.842	711.277
GPS–91	541731.951	2669692.664	766.461
GPS–92	541191.244	2670297.702	820.953
GPS–93	541638.119	2670400.439	869.178
GPS–94	540962.156	2671026.420	936.432
GPS–95	541080.146	2671738.672	979.355
GPS–95A	541229.881	2671781.320	983.579
GPS–96	540502.792	2672222.959	1029.720
GPS–97	540790.994	2672704.910	1065.308
GPS–98	540702.181	2673545.714	1098.387
GPS–99	541148.875	2673802.377	1113.765
GPS–100	540937.967	2674549.427	1126.142
GPS–100A	541018.132	2674614.949	1127.307
GPS–101	540808.248	2674871.782	1151.615
GPS–102	539992.187	2675180.032	1184.211
GPS–103	539396.183	2675965.661	1221.105
GPS–104	539047.321	2675270.465	1192.275

GPS LIST

GPS No.	Easting (m)	Northing (m)	Elevation (m)
GPS–105	539134.753	2674532.752	1166.683
GPS–105A	539077.263	2674478.195	1165.889
GPS–106	539299.241	2673811.029	1207.847
GPS–107	539201.534	2673115.905	1246.306
GPS–108	538821.155	2673008.811	1261.459
GPS–109	538438.966	2673328.093	1227.294
GPS–110	538220.956	2674061.649	1190.028
GPS–110A	538181.676	2674131.910	1189.397
GPS–111	537798.051	2674125.732	1156.376
GPS–112	538035.254	2673520.202	1182.352
GPS–113	537661.170	2672831.788	1214.899
GPS–114	537295.156	2672265.930	1186.928
GPS–115	537167.771	2672598.116	1160.839
GPS–115A	537207.986	2672682.690	1157.107
GPS–116	537206.130	2673005.127	1103.145
GPS–117	536555.107	2672776.787	1065.878
GPS–118	535917.856	2672735.947	1019.080
GPS–119	535929.259	2672048.345	981.644
GPS–120	535787.075	2672543.631	929.273
GPS–120A	535670.529	2672604.572	920.846
GPS–121	535518.077	2672127.829	874.562
GPS–122	535215.570	2671419.762	823.663
GPS–123	534607.372	2671035.391	784.646
GPS–124	534289.702	2670440.614	728.085
GPS–125	534160.335	2669959.482	686.637
GPS–125A	534223.250	2669975.682	682.753
GPS–126	534834.337	2669961.764	664.083
GPS–127	535585.854	2670013.270	633.135
GPS–128	535593.027	2670647.609	617.051
GPS–129	536088.802	2669869.074	629.296
GPS–130	535840.787	2669795.621	620.452
GPS–130A	535806.326	2669732.674	619.326
GPS–131	535464.840	2669166.925	625.244
GPS–132	535294.951	2669241.755	631.603
GPS–133	534687.105	2669389.848	619.436
GPS–134	534003.497	2669353.126	589.515
GPS–135	533493.438	2669133.844	557.538
GPS–135A	533539.070	2669050.054	552.245
GPS–136	533273.112	2668417.229	518.970
GPS–137	533399.095	2667766.231	478.707
GPS–138	533021.512	2667405.754	522.794
GPS–139	532564.355	2666724.535	571.389
GPS–140	532422.889	2666317.463	610.855
GPS–140A	532399.101	2666234.072	614.503
GPS–141	531989.282	2665756.833	681.517
GPS–142	531285.725	2665198.427	701.590
GPS–143	530863.976	2665001.568	722.746
GPS–144	530780.297	2665422.201	748.347
GPS–145	530537.416	2665209.485	797.596
GPS–145A	530534.701	2665164.705	799.435

GPS LIST

GPS No.	Easting (m)	Northing (m)	Elevation (m)
GPS–146	530166.216	2664913.724	837.949
GPS–147	530642.479	2664554.920	870.580
GPS–148	530304.089	2664620.148	897.606
GPS–149	530147.687	2663981.683	872.952
GPS–150	530090.452	2663694.496	823.724
GPS–150A	530023.794	2663683.061	822.386
GPS–151	529857.370	2662870.671	751.745
GPS–152	529493.708	2662677.302	709.141
GPS–153	529160.322	2662216.482	723.925
GPS–154	528669.755	2661631.367	714.862
GPS–155	528284.630	2660805.527	744.987
GPS–155A	528220.713	2660785.299	745.960
GPS–156	527636.852	2660328.150	752.907
GPS–157	527109.505	2659958.702	721.969
GPS–158	526857.322	2659362.376	682.300
GPS–159	526254.295	2658959.392	619.968
GPS–160	526063.547	2658333.547	553.744
GPS–161	525877.370	2657598.427	476.943
GPS–162	525790.335	2656737.390	425.596
GPS–162A	525655.763	2656825.009	426.080

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: DECEMBER, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

LIST OF CONTROL PILLAR

SUBMISSION TYPE :

FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

CONSULTANT :

CETEST Engineering Consultants
An ISO 9001, 14001 & OHSAS 18001 Certified Company

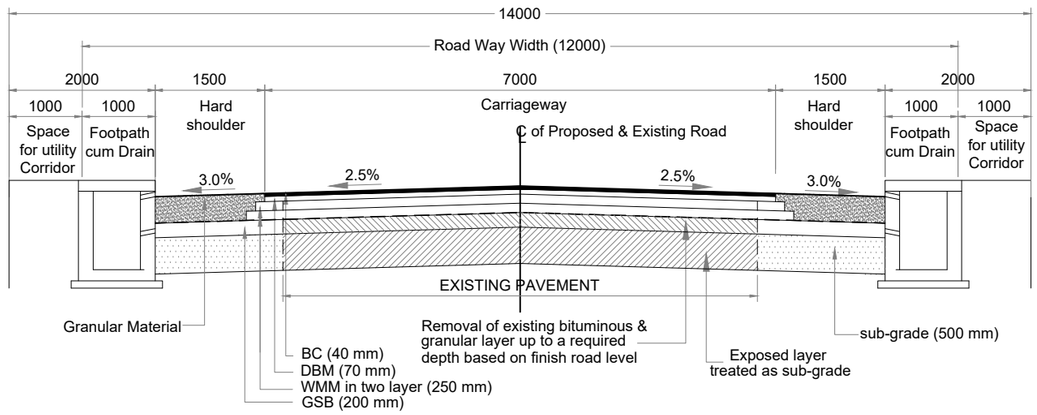
CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092.

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/PILLAR

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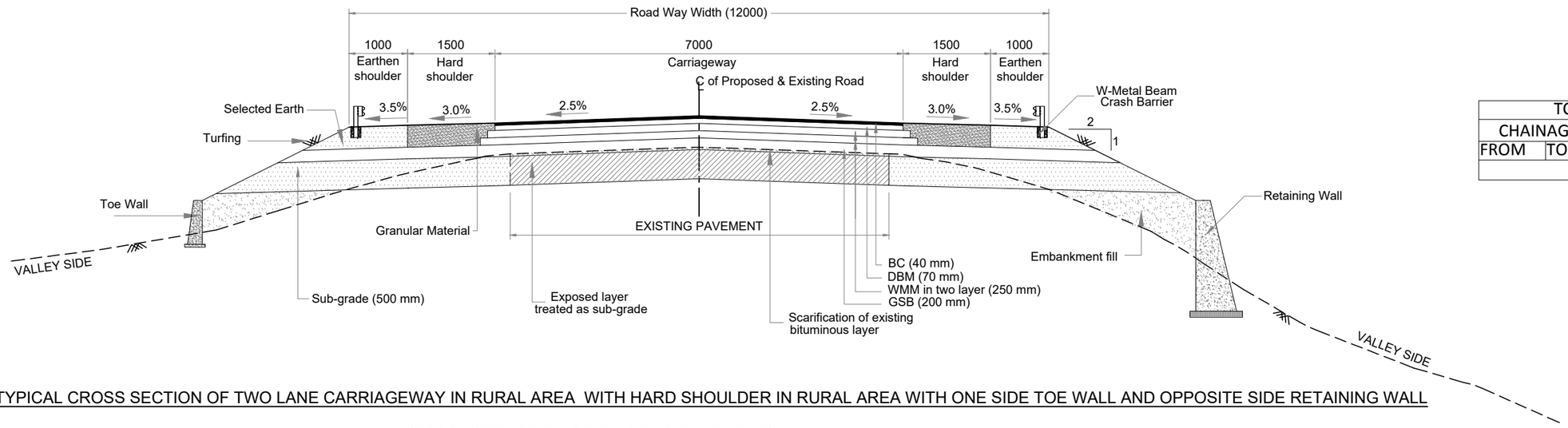
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S.MANDAL	B.DAS	S.SADHU	A.K.DAS

TYPICAL CROSS SECTION



TCS - 01		
CHAINAGE (M)		LENGTH (M)
FROM	TO	
NIL		

TCS-1 :- TYPICAL CROSS SECTION OF TWO LANE CARRIAGEWAY WITH HARD SHOULDER IN BUILT UP AREA WITH BOTH SIDE FOOTPATH CUM RCC RECTENGULAR DRAIN (RECONSTRUCTION OF EXISTING PAVEMENT)



TCS - 02		
CHAINAGE (M)		LENGTH (M)
FROM	TO	
NIL		

TCS-2 :-TYPICAL CROSS SECTION OF TWO LANE CARRIAGEWAY IN RURAL AREA WITH HARD SHOULDER IN RURAL AREA WITH ONE SIDE TOE WALL AND OPPOSITE SIDE RETAINING WALL

(RECONSTRUCTION OF EXISTING PAVEMENT)

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.
REVISIONS				

Scale :- 1 : 75

DATE: Dec, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR
(PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

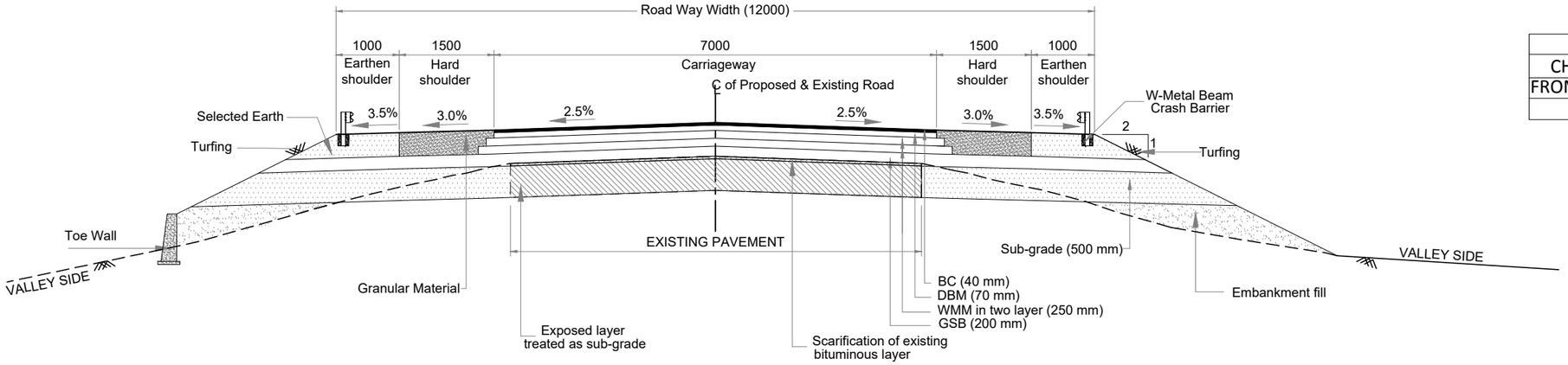
TYPICAL CROSS SECTION

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

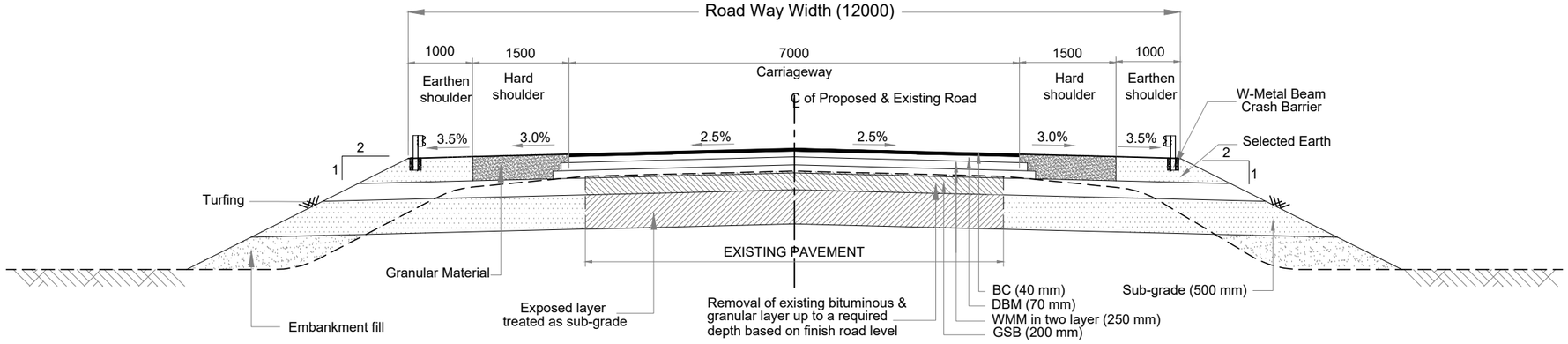
CONSULTANT : CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092

DWG NO:-CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/TCS			
REVISION MKD. - R0		SHEET NO. - 01 OF 09	
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TCS - 03		
CHAINAGE (M)		LENGTH
FROM	TO	(M)
NIL		

TCS-3 :-TYPICAL CROSS SECTION OF TWO LANE CARRIAGEWAY WITH HARD SHOULDER IN RURAL AREA WITH ONE SIDE TOE WALL
(RECONSTRUCTION OF EXISTING PAVEMENT)



TCS - 04		
CHAINAGE (M)		LENGTH
FROM	TO	(M)
NIL		

TCS- 4 :-TYPICAL CROSS SECTION OF TWO LANE CARRIAGEWAY WITH HARD SHOULDER IN RURAL AREA
(RECONSTRUCTION OF EXISTING PAVEMENT)

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- 1 : 75

DATE: Dec, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR
(PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

TYPICAL CROSS SECTION

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

CONSULTANT : CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092.

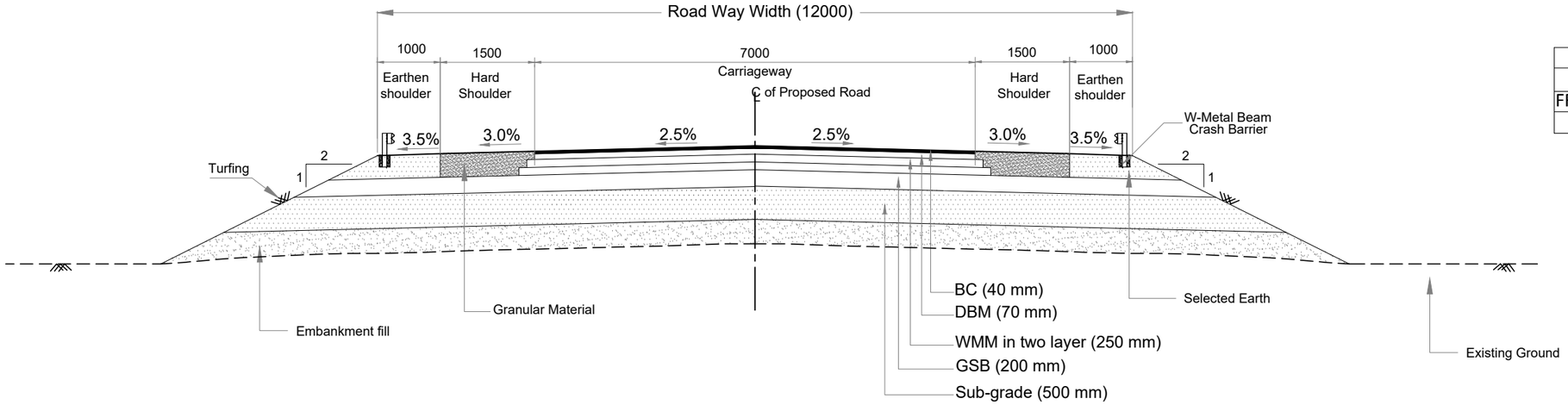
CE TESTING Engineering Consultants An ISO 9001, 14001 & OHSAS 18001 Certified Company

CE TESTING CO. PVT. LTD. KOLKATA 700 092 124-A, N.S.C. BOSE ROAD

DWG NO:-CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/TCS

REVISION MKD. - R0 | SHEET NO. - 02 OF 09

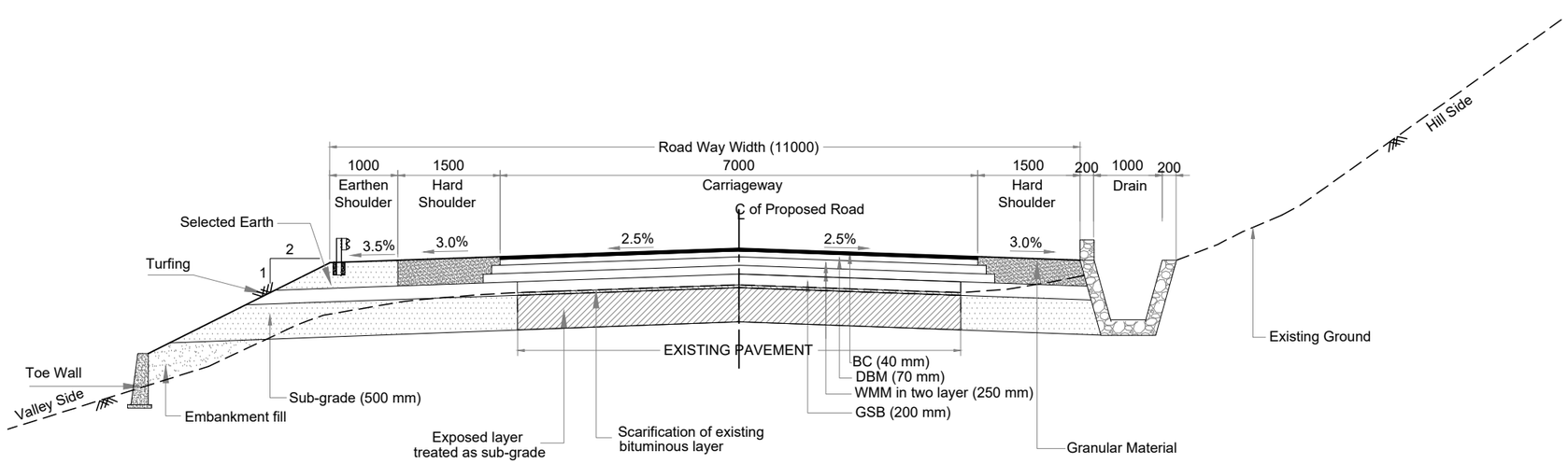
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S.MANDAL	B.DAS	S.SADHU	A.K.DAS



TCS - 04A		
CHAINAGE (M)		LENGTH (M)
FROM	TO	
NIL		

TCS- 4A :-TYPICAL CROSS SECTION OF TWO LANE CARRIAGEWAY WITH HARD SHOULDER AT REALIGNMENT STRETCH IN RURAL AREA

(NEW CONSTRUCTION)



TCS - 05		
CHAINAGE (M)		LENGTH (M)
FROM	TO	
133170	133220	50
134070	134320	250
135870	135970	100
137920	137970	50
140020	140170	150
TOTAL LENGTH (M)		600

TCS-5 :-TYPICAL CROSS SECTION OF TWO LANE CARRIAGEWAY WITH HARD SHOULDER IN RURAL AREA WITH TOE WALL ON VALLEY SIDE & OPEN TRAPEZOIDAL DRAIN ON HILL SIDE

(RECONSTRUCTION OF EXISTING PAVEMENT)

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- 1 : 75

DATE: Dec, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR
(PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

TYPICAL CROSS SECTION

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

CONSULTANT : CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092.

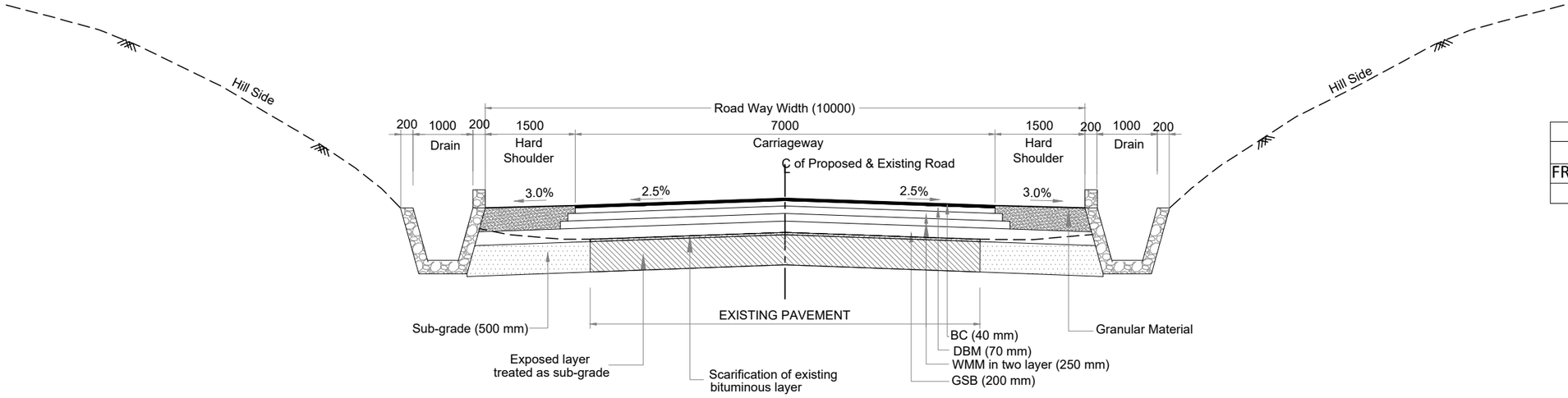
CE TESTING Engineering Consultants An ISO 9001, 14001 & OHSAS18001 Certified Company

CE TESTING CO. PVT. LTD. KOLKATA 700 092 124-A, N.S.C. BOSE ROAD

DWG NO:-CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/TCS

REVISION MKD. - R0 | SHEET NO. - 03 OF 09

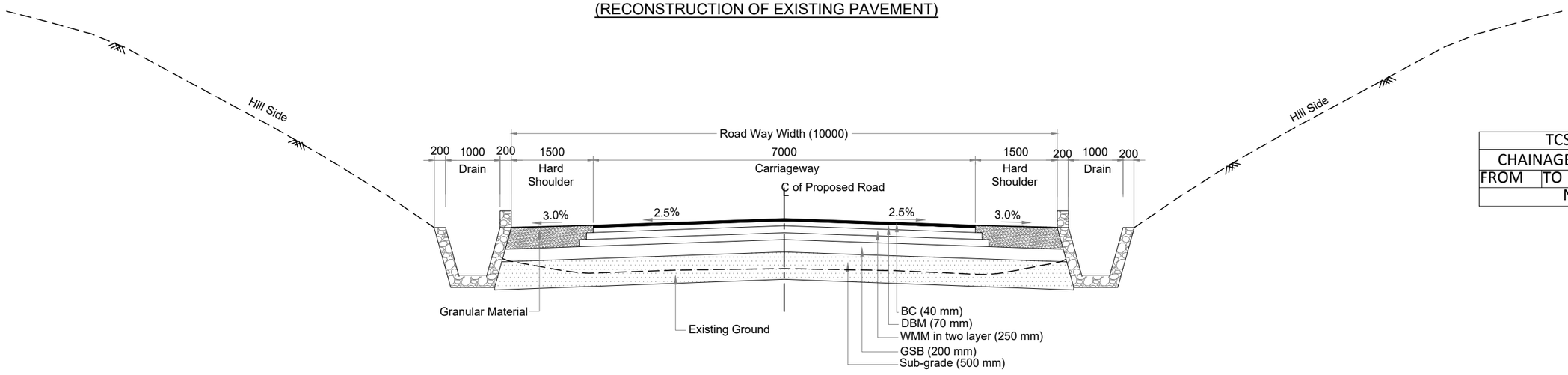
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TCS - 06		
CHAINAGE (M)		LENGTH (M)
FROM	TO	
NIL		

TCS-6 :-TYPICAL CROSS SECTION OF TWO LANE CARRIAGEWAY WITH HARD SHOULDER IN RURAL AREA WITH BOTH SIDE OPEN TRAPEZOIDAL DRAIN ON HILL SECTION

(RECONSTRUCTION OF EXISTING PAVEMENT)



TCS - 06A		
CHAINAGE (M)		LENGTH (M)
FROM	TO	
NIL		

TCS-6A :-TYPICAL CROSS SECTION OF TWO LANE CARRIAGEWAY WITH HARD SHOULDER AT REALIGNMENT STRETCH IN RURAL AREA WITH BOTH SIDE OPEN TRAPEZOIDAL DRAIN ON HILL SECTION

(NEW CONSTRUCTION)

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.
REVISIONS				

Scale :- 1 : 75

DATE: Dec, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

TYPICAL CROSS SECTION

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

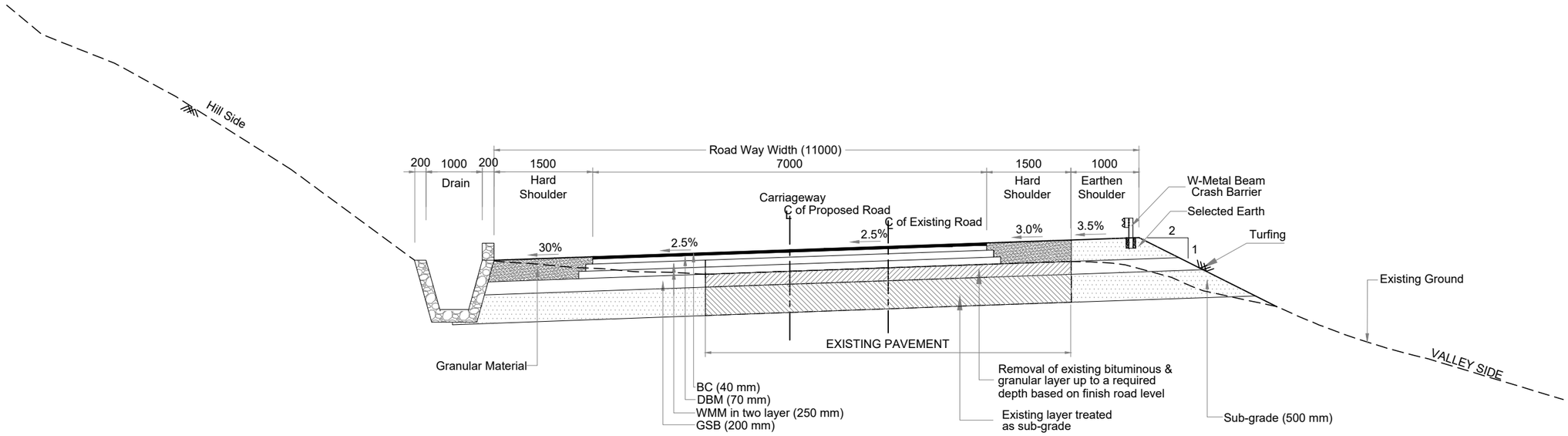
PACKAGE - IVB

CONSULTANT : CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092.

DWG NO:-CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/TCS

REVISION MKD. - R0 | SHEET NO. - 04 OF 09

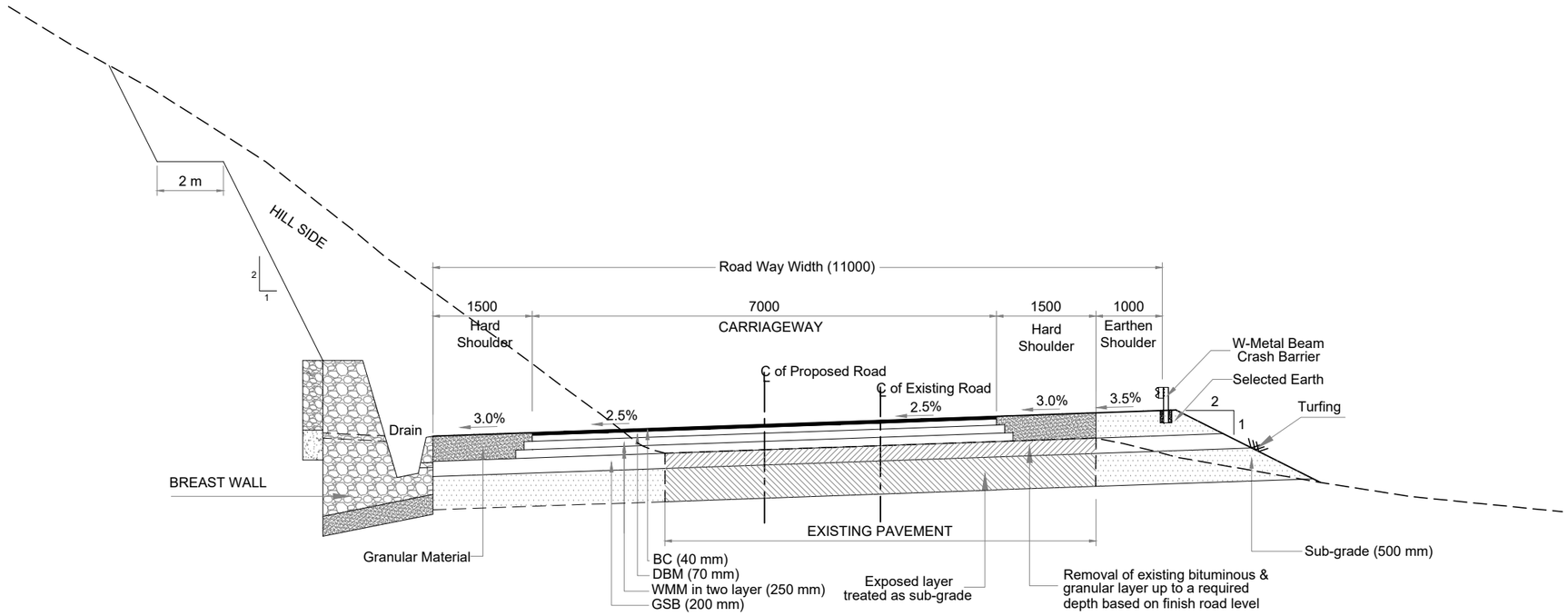
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TCS - 07		
CHAINAGE (M)		LENGTH (M)
FROM	TO	
131620	131770	150
133020	133120	100
133220	133320	100
133920	134070	150
134320	134420	100
136320	136520	200
136870	136970	100
137620	137920	300
138470	138570	100
138670	138720	50
138770	138820	50
138870	138970	100
139170	139470	300
140620	141029	409
TOTAL LENGTH (M)		2209

TCS-7 : TYPICAL CROSS SECTION OF TWO LANE CARRIAGEWAY WITH HARD SHOULDER IN RURAL AREA WITH OPEN TRAPEZOIDAL DRAIN ON HILL SIDE AND EARTHEN SHOULDER ON VALLEY SIDE

(RECONSTRUCTION OF EXISTING PAVEMENT)



TCS - 08		
CHAINAGE (M)		LENGTH (M)
FROM	TO	
130220	130270	50
130470	130870	400
131970	132220	250
133520	133620	100
134470	134570	100
135220	135320	100
135570	135770	200
135970	136020	50
136770	136820	50
137970	138470	500
138570	138670	100
139820	140020	200
140170	140220	50
TOTAL LENGTH (M)		2150

TCS-8 :- TYPICAL CROSS SECTION OF TWO LANE CARRIAGEWAY WITH HARD SHOILDER IN RURAL AREA WITH BREAST WALL ON HILL SIDE

(RECONSTRUCTION OF EXISTING PAVEMENT)

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.
REVISIONS				

Scale :- 1 : 75

DATE: Dec, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street, New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

TYPICAL CROSS SECTION

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

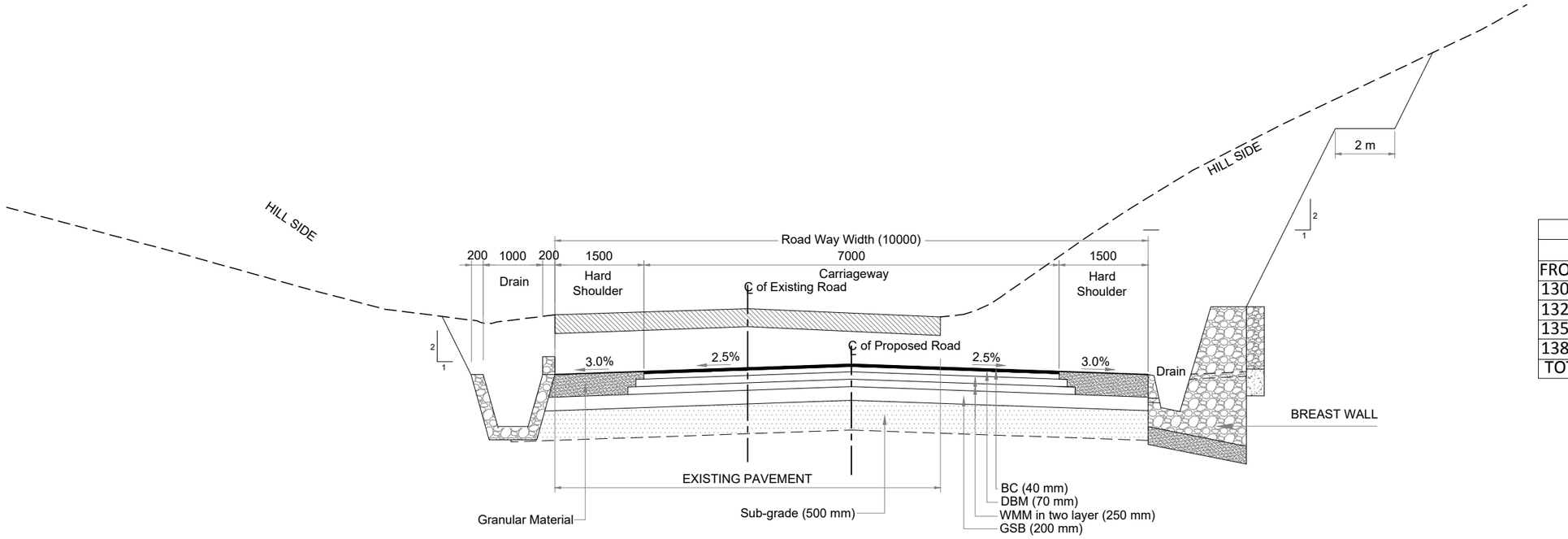
PACKAGE - IVB

CONSULTANT : CE TESTING COMPANY PVT. LTD.
CETEST Engineering Consultants
An ISO 9001, 14001 & OHSAS18001 Certified Company
124-A, N.S.C. Bose Road
Kolkata - 700092.

DWG NO:-CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/TCS

REVISION MKD. - R0 | SHEET NO. - 05 OF 09

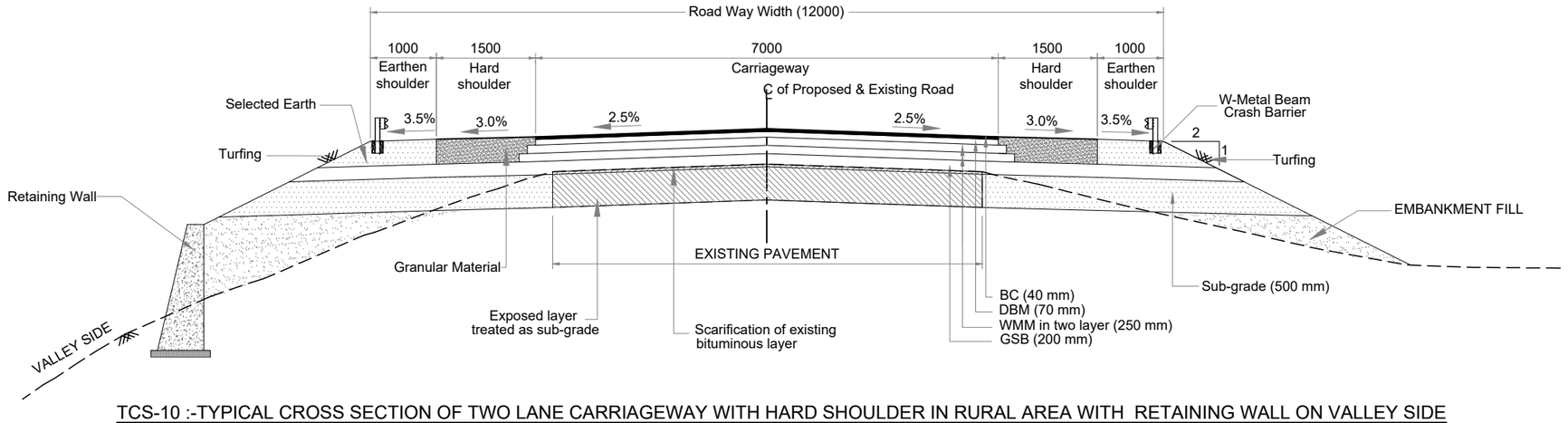
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S.MANDAL	B.DAS	S.SADHU	A.K.DAS



TCS - 09		
CHAINAGE (M)		LENGTH (M)
FROM	TO	
130920	130970	50
132570	132720	150
135370	135470	100
138970	139170	200
TOTAL LENGTH (M)		500

TCS-9 :- TYPICAL CROSS SECTION OF TWO LANE CARRIAGEWAY WITH HARD SHOULDER AT CUTTING SECTION IN RURAL AREA WITH BREAST WALL ON HILL SIDE

(RECONSTRUCTION OF EXISTING PAVEMENT)



TCS - 10		
CHAINAGE (M)		LENGTH (M)
FROM	TO	
NIL		

TCS-10 :-TYPICAL CROSS SECTION OF TWO LANE CARRIAGEWAY WITH HARD SHOULDER IN RURAL AREA WITH RETAINING WALL ON VALLEY SIDE

(RECONSTRUCTION OF EXISTING PAVEMENT)

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.
REVISIONS				

Scale :- 1 : 75

DATE: Dec, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

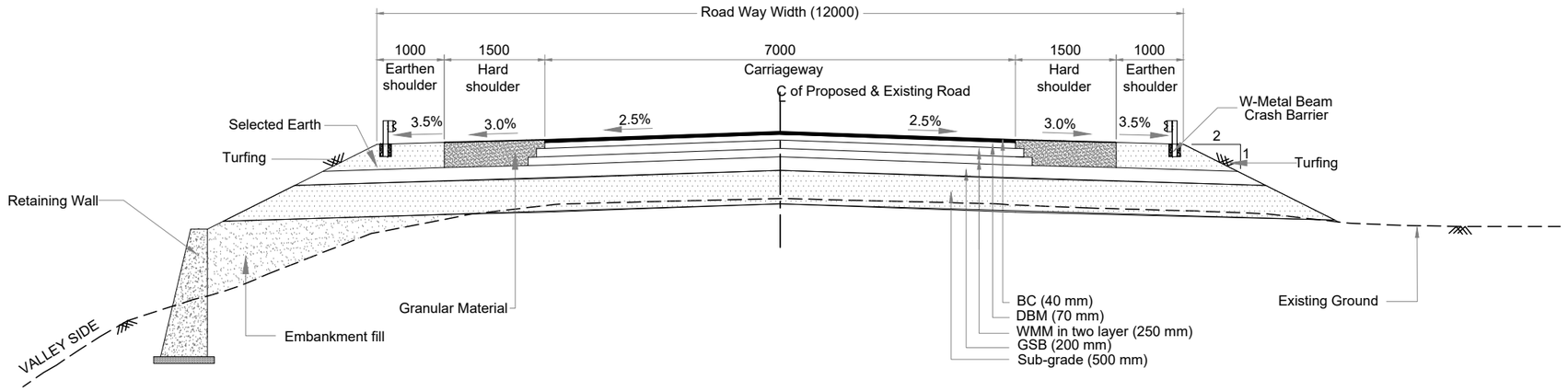
TYPICAL CROSS SECTION

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

CONSULTANT : CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092.

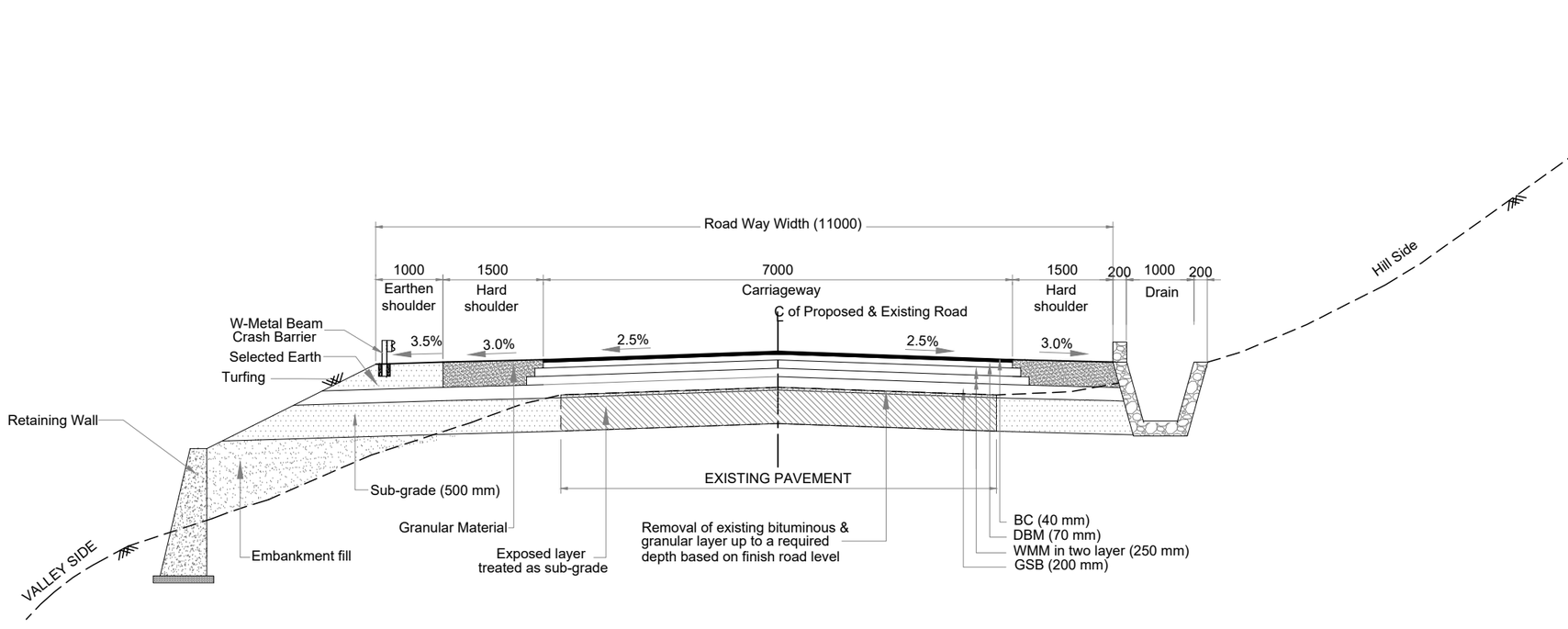
DWG NO:-CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/TCS			
REVISION MKD. - R0		SHEET NO. - 06 OF 09	
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS



TCS - 10A		
CHAINAGE (M)		LENGTH (M)
FROM	TO	
NIL		

TCS-10A :-TYPICAL CROSS SECTION OF TWO LANE CARRIAGEWAY WITH HARD SHOULDER AT REALIGNMENT STRETCH IN RURAL AREA WITH RETAINING WALL ON VALLEY SIDE

(NEW CONSTRUCTION)



TCS - 11		
CHAINAGE (M)		LENGTH (M)
FROM	TO	
130000	130220	220
130270	130370	100
130870	130920	50
130970	131620	650
131770	131970	200
132220	132570	350
132720	133020	300
133120	133170	50
133320	133520	200
133620	133920	300
134420	134470	50
134570	135220	650
135320	135370	50
135470	135570	100
135770	135870	100
136520	136770	250
136820	136870	50
136970	137620	650
138720	138770	50
138820	138870	50
139470	139720	250
140220	140620	400
TOTAL LENGTH (M)		5070

TCS-11 :-TYPICAL CROSS SECTION OF TWO LANE CARRIAGEWAY WITH HARD SHOULDER IN RURAL AREA WITH RETAINING WALL ON VALLEY SIDE AND OPEN TRAPEZOIDAL DRAIN ON HILL SIDE

(RECONSTRUCTION OF EXISTING PAVEMENT)

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- 1 : 75

DATE: Dec, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

TYPICAL CROSS SECTION

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

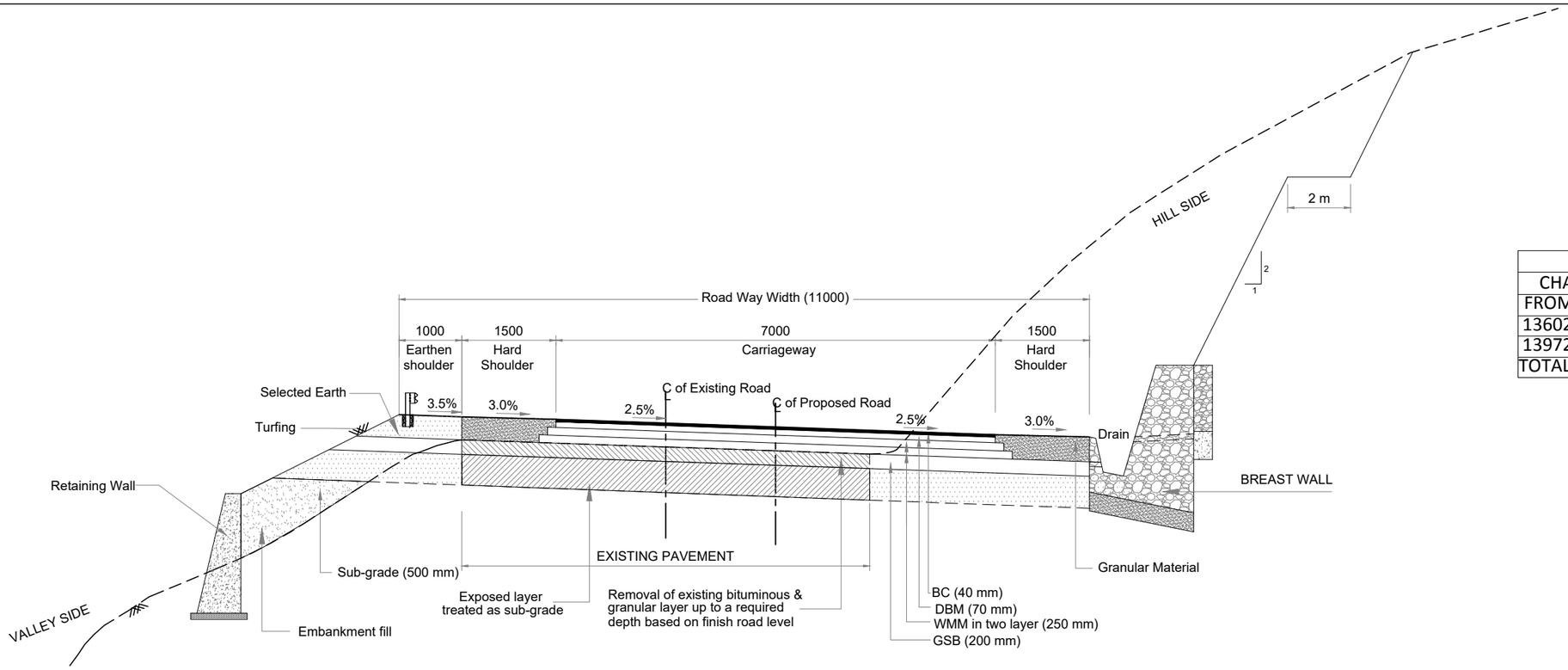
PACKAGE - IVB

CONSULTANT : CE TESTING COMPANY PVT. LTD.
Engineering Consultants
An ISO 9001, 14001 & OHSAS18001 Certified Company
124-A, N.S.C. Bose Road
Kolkata - 700092.

DWG NO:-CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/TCS

REVISION MKD. - R0 | SHEET NO. - 07 OF 09

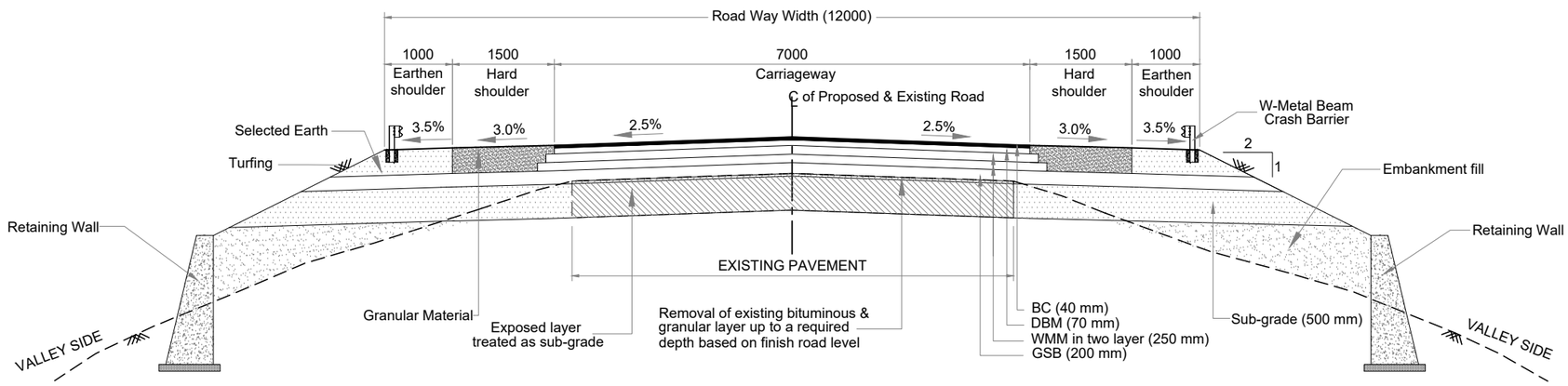
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S.MANDAL	B.DAS	S.SADHU	A.K.DAS



TCS - 12		
CHAINAGE (M)		LENGTH (M)
FROM	TO	
136020	136320	300
139720	139820	100
TOTAL LENGTH (M)		400

TCS-12 :-TYPICAL CROSS SECTION OF TWO LANE CARRIAGEWAY WITH HARD SHOULDER AT RECONSTRUCTION STRETCH IN RURAL AREA WITH RETAINING WALL ON VALLEY SIDE AND BREAST WALL ON HILL SIDE

(RECONSTRUCTION OF EXISTING PAVEMENT)



TCS - 13		
CHAINAGE (M)		LENGTH (M)
FROM	TO	
NIL		

TCS-13 :-TYPICAL CROSS SECTION OF TWO LANE CARRIAGEWAY WITH HARD SHOULDER IN RURAL AREA WITH BOTH SIDE RETAINING WALL ON VALLEY SIDE

(RECONSTRUCTION OF EXISTING PAVEMENT)

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.
REVISIONS				

Scale :- 1 : 75

DATE: Dec, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

TYPICAL CROSS SECTION

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

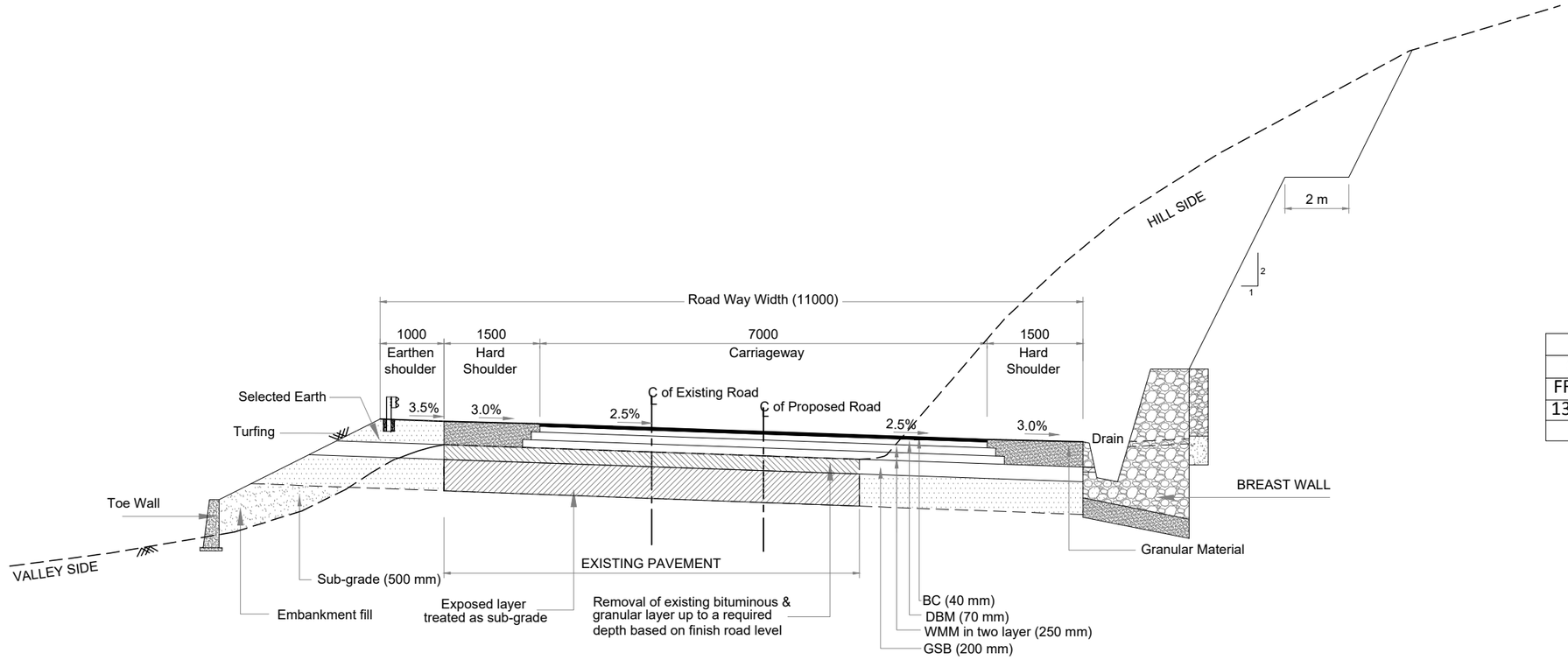
PACKAGE - IVB

CONSULTANT : CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092.

DWG NO:-CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/TCS

REVISION MKD. - R0 | SHEET NO. - 08 OF 09

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S.MANDAL	B.DAS	S.SADHU	A.K.DAS



TCS - 14		
CHAINAGE (M)		LENGTH (M)
FROM	TO	
130370	130470	100
NIL		

TCS-14 :-TYPICAL CROSS SECTION OF TWO LANE CARRIAGEWAY WITH HARD SHOULDER AT RECONSTRUCTION STRETCH IN RURAL AREA WITH TOE WALL ON VALLEY SIDE AND BREAST WALL ON HILL SIDE

(RECONSTRUCTION OF EXISTING PAVEMENT)

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- 1 : 75

DATE: Dec, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
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TYPICAL CROSS SECTION

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

CONSULTANT : CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092.

CETEST Engineering Consultants
An ISO 9001, 14001 & OHSAS18001 Certified Company

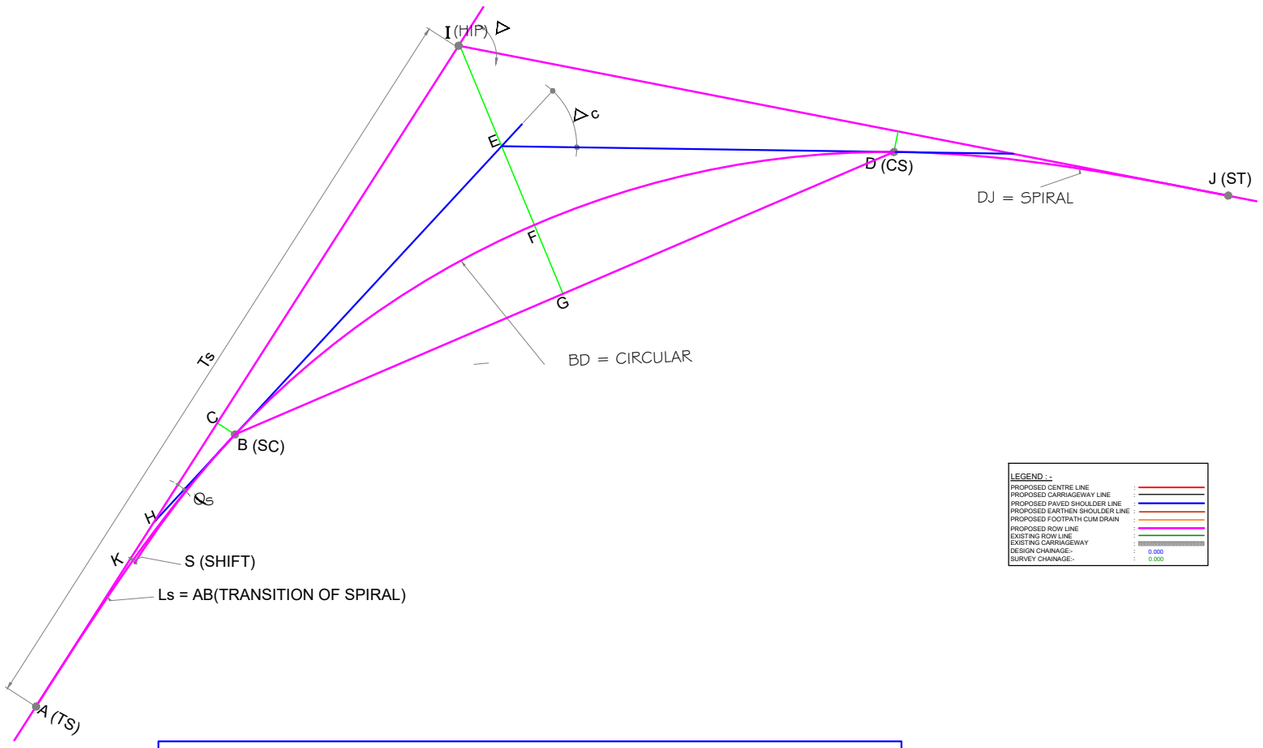
CE TESTING CO. PVT. LTD. KOLKATA 700 092 124-A, N.S.C. BOSE ROAD

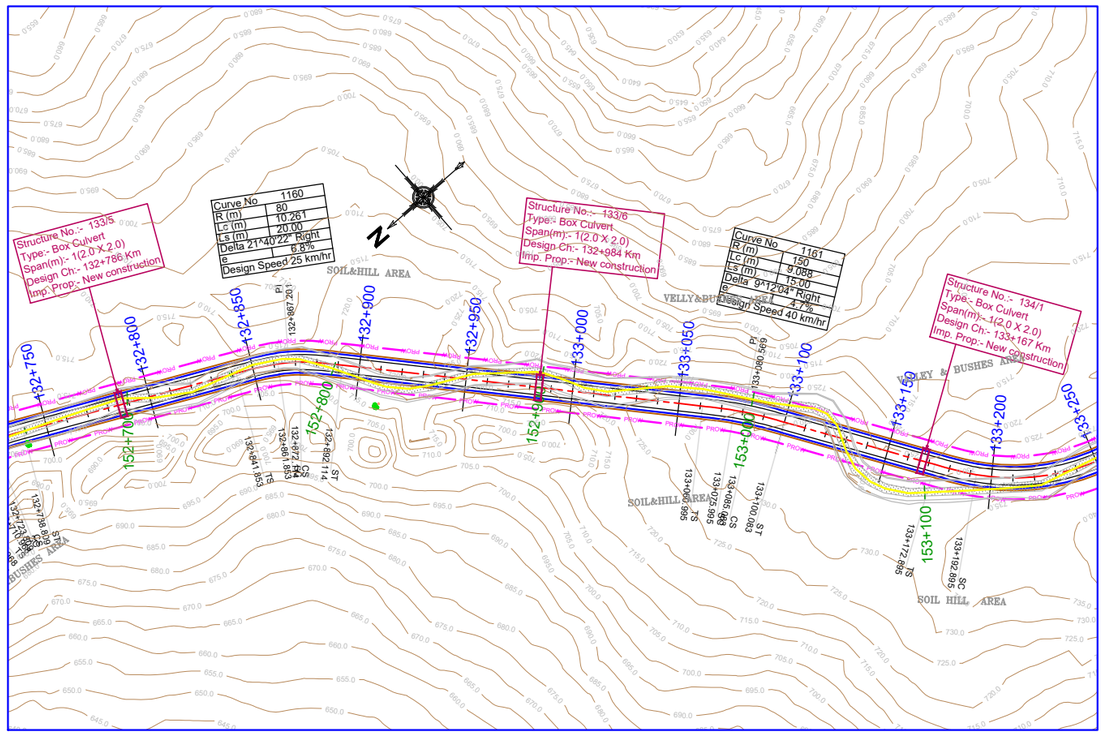
DWG NO:-CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/TCS

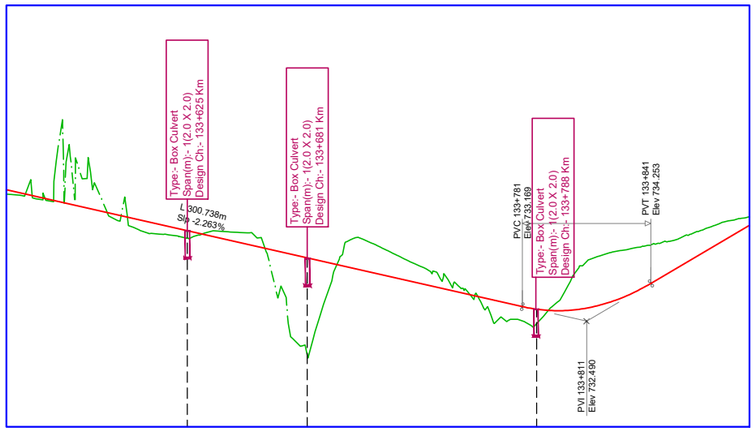
REVISION MKD. - R0 | SHEET NO. - 09 OF 09

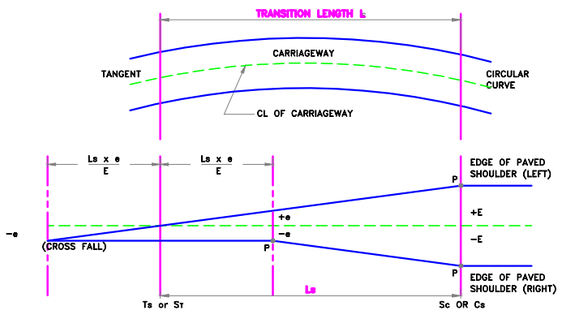
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

LEGEND

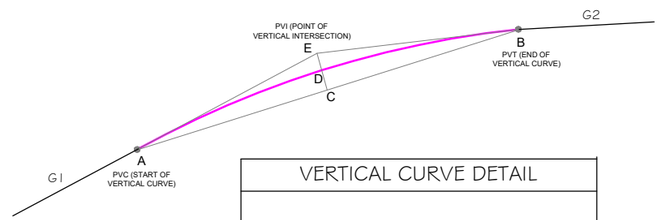








SKETCH SHOWING SUPER ELEVATION TRANSITION WITH SPIRAL CURVE.



VERTICAL CURVE DETAIL

L	=	LENGTH
G1	=	ENTRANCE GRADE
G2	=	EXIT GRADE
MO	=	MID ORDINATE
R	=	(G2 - G1) / L
K	=	L / (G2-G1)
SD	=	SIGHT DISTANCE

SPIRAL CURVE DETAIL

Rb	=	BEGINING CURVATURE (AT A & J)
Re	=	END RADIUS (AT B & D)
Ls	=	LENGTH OF SPIRAL (AB & DJ)
THETA (θs)	=	SPIRAL ANGLE = ∠BHC
A	=	CONSTANT = $\sqrt{Ls \times Re}$
S	=	SHIFT
Ks	=	AK (ABSCISSA)
Xs	=	AC
Ys	=	BC
Lt	=	LONG TANGENT (AH)
St	=	SHORT TANGENT (HB)
Ts	=	TANGENT DISTANCE **(IA)**
	=	Ls/2+(R+S)tan Δ
TOTAL DEVIATION ANGLE	=	Δ = Δc + 2θs
Es	=	**(IP)** = APEX DISTANCE
	=	(R+S)Sec Δ/2-R

CIRCULAR CURVE DETAIL

R	=	RADIUS
Lc	=	LENGTH OF CIRCLE
T	=	TANGENT LENGTH (EB)
DELTA	=	ANGLE OF CIRCULAR ARC (c) Δc
DC	=	DEGREE OF CURVATURE
C	=	CHORD LENGTH
O	=	MIDDLE ORDINATE (FG)
E	=	EXTERNAL ORDINATE (EF)

LEGEND :

Ts or St – Point of change from transition to tangent (sprial to tangent)
Sc or Cs – Point of change from transition to circular curve (spiral to circular)
Ls – Length of transition curve
e – Normal cross fall rate (2.5%) for flexible pavement.
Normal cross fall rate (2.0%) for rigid pavement.
E – Rate of super elevation

NOTE : SHORT VERTICAL CURVES (AT LEAST 15M LONG) TO BE INSERTED AT POINT "P" IF NECESSARY. LEFT AND RIGHT ARRANGEMENT WILL BE REVERSED IN SIGN FOR CURVE IN REVERSE DIRECTION.

GENERAL NOTES

01. ALL DIMENSIONS ARE IN METERS, UNLESS OTHERWISE SPECIFIED.

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: DECEMBER, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

LEGEND

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

CONSULTANT :
CETEST Engineering Consultants
An ISO 9001, 14001 & OHSAS 18001 Certified Company
CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092.

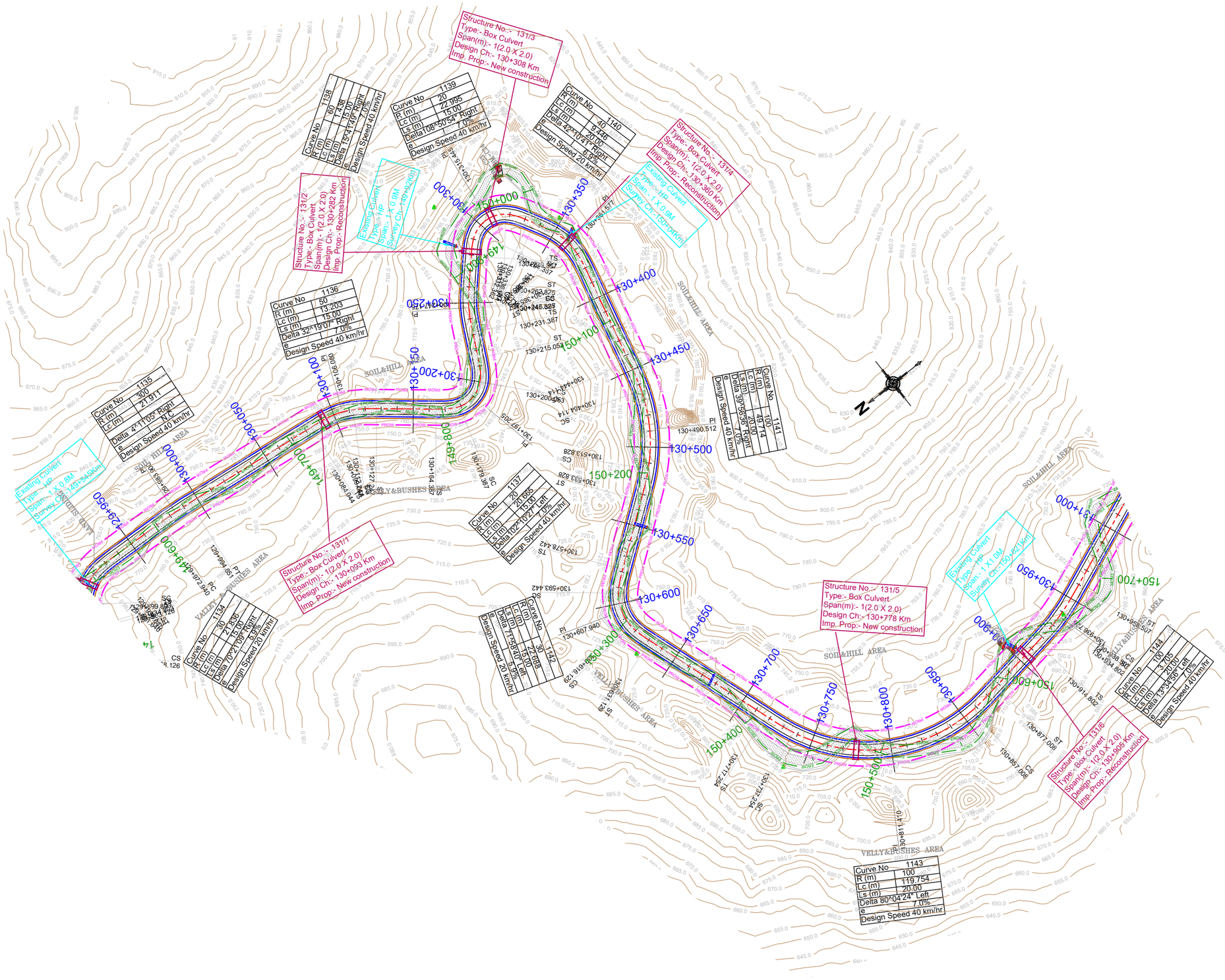
DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/LEGEND
REVISION MKD. - R0
SHEET NO. - 01 OF 01

DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

PLAN & PROFILE

CHURACHANDPUR

TUIVAI



LEGEND : -

PROPOSED CENTRE LINE	:	
PROPOSED CARRIAGEWAY	:	
PROPOSED HARD SHOULDER	:	
PROPOSED EARTHEN SHOULDER	:	
PROPOSED ROW	:	PROW PROW
EXISTING ROW	:	EROW EROW
EXISTING CARRIAGEWAY	:	
DESIGN CHAINAGE:-	:	0+000
SURVEY CHAINAGE:-	:	0+000

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- 1:2000

DATE: December, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

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PLAN
Km 130+000 to Km 131+000

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

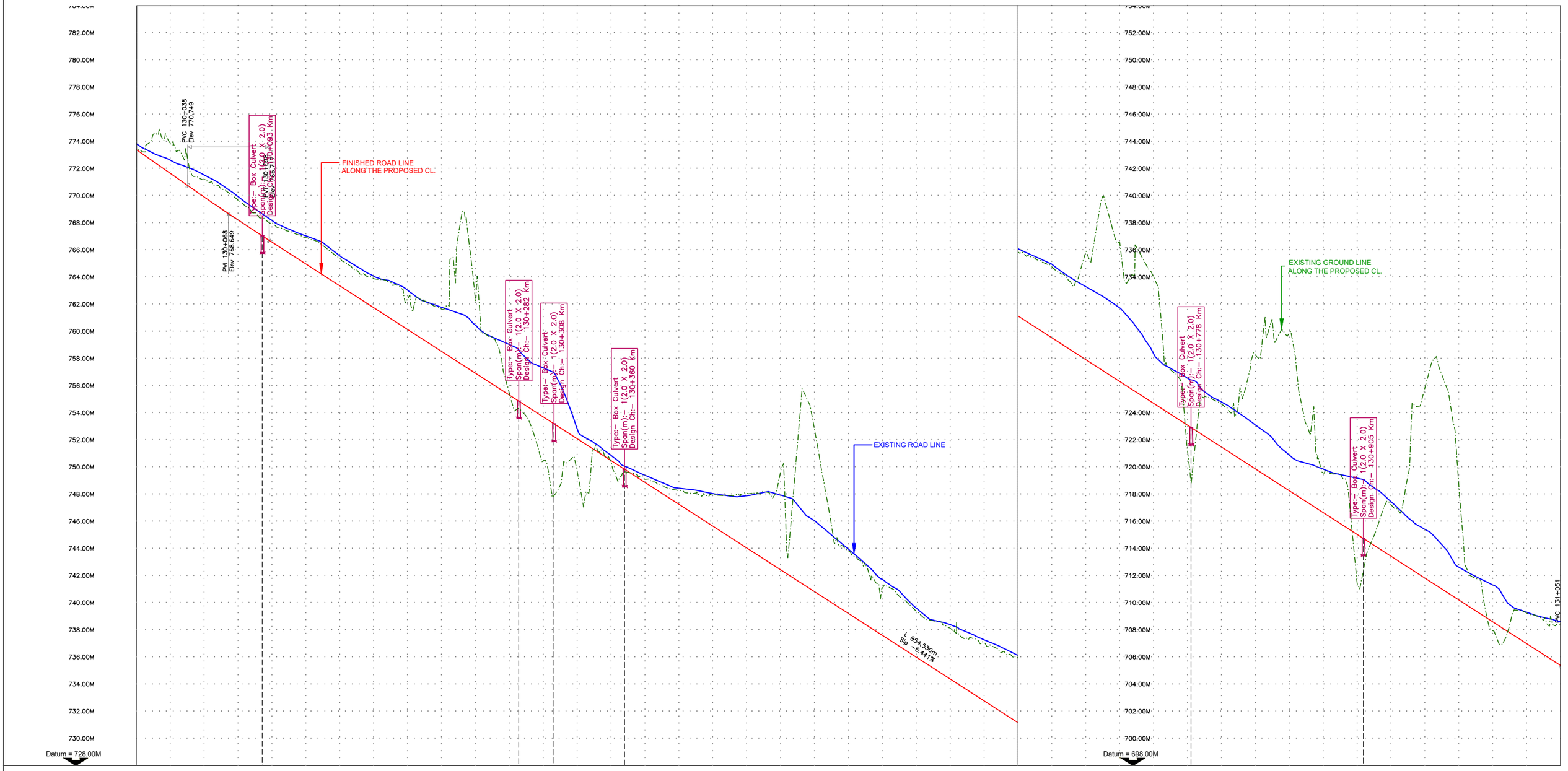
PACKAGE - IVB

CONSULTANT :
CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/PLAN

REVISION MKD. - R0 | SHEET NO. - 01

DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS


PVC 130+038
Elev 770.749
PVI 130+068
Elev 768.649
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 130+093 Km
FINISHED ROAD LINE
ALONG THE PROPOSED CL.
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 130+282 Km
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 130+308 Km
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 130+360 Km
EXISTING ROAD LINE
L 954.530m
Slp -6.441%
Datum = 728.00M
EXISTING GROUND LINE
ALONG THE PROPOSED CL.
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 130+778 Km
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 130+905 Km
PVC 131+051
Datum = 698.00M

| | | |

CHURACHANDPUR

TUIVAI

Curve No	1145
R (m)	30
Lc (m)	44.933
Ls (m)	15.00
Delta	114°27'49" Right
e	5.9%
Design Speed	20 Km/hr

Curve No	1146
R (m)	60
Lc (m)	25.498
Ls (m)	15.00
Delta	21°50'17" Right
e	7.0%
Design Speed	30 km/hr

Curve No	1150
R (m)	20
Lc (m)	24.355
Ls (m)	15.00
Delta	112°44'36" Right
e	7.0%
Design Speed	20 km/hr

Curve No	1152
R (m)	50
Lc (m)	41.213
Ls (m)	25.00
Delta	75°52'28" Right
e	7.0%
Design Speed	30 km/hr

Curve No	1155
R (m)	40
Lc (m)	15.334
Lc (m)	20.00
Ls (m)	15.00
Delta	50°36'42" Right
e	6.9%
Design Speed	20 km/hr

Curve No	1147
R (m)	45
Lc (m)	45.43
Ls (m)	20.00
Delta	94°10'13" Left
e	6.9%
Design Speed	20 km/hr

Curve No	1148
R (m)	60
R (m)	9.033
Lc (m)	15.00
Ls (m)	15.00
Delta	22°06'59" Left
e	6.7%
Design Speed	30 km/hr

Curve No	1149
R (m)	50
Lc (m)	4.642
Ls (m)	15.00
Delta	22°44'12" Left
e	6.8%
Design Speed	20 km/hr

Curve No	1151
R (m)	30
Lc (m)	40.365
Ls (m)	15.00
Delta	105°44'23" Left
e	5.9%
Design Speed	20 km/hr

Curve No	1153
R (m)	20.796
Lc (m)	15.00
Ls (m)	15.00
Delta	14°00'22" Left
e	7.0%
Design Speed	20 km/hr

Curve No	1154
R (m)	40
Lc (m)	31.102
Ls (m)	20.00
Delta	45°06'51" Right
e	6.9%
Design Speed	20 km/hr

Structure No.:- 132/3
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 131+503 Km
Imp Prop:- Reconstruction

Structure No.:- 132/2
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 131+212 Km
Imp Prop:- New construction

Structure No.:- 132/4
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 131+839 Km
Imp Prop:- Reconstruction

Structure No.:- 133/1
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 132+002 Km
Imp Prop:- Reconstruction

Structure No.:- 133/2
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 132+248 Km
Imp Prop:- New construction

Structure No.:- 132/5
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 131+779 Km
Imp Prop:- Reconstruction

Existing Culvert
Type:- HP
Span:- 1 X 1.0M
Survey Ch:- 131+293Km

Existing Culvert
Type:- HP
Span:- 1 X 1.0M
Survey Ch:- 151+429Km

Existing Culvert
Type:- HP
Span:- 1 X 1.0M
Survey Ch:- 151+835Km

Existing Culvert
Type:- HP
Span:- 1 X 2.0M
Survey Ch:- 151+812Km

SOIL&HILL AREA

VELLY&BUSHES AREA

LEGEND : -

PROPOSED CENTRE LINE	:
PROPOSED CARRIAGEWAY	:
PROPOSED HARD SHOULDER	:
PROPOSED EARTHEN SHOULDER	:
PROPOSED ROW	: PROW PROW
EXISTING ROW	: EROW EROW
EXISTING CARRIAGEWAY	:
DESIGN CHAINAGE:-	: 0+000
SURVEY CHAINAGE:-	: 0+000

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- 1:2000

DATE: December, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
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PLAN
Km 131+000 to Km 132+000

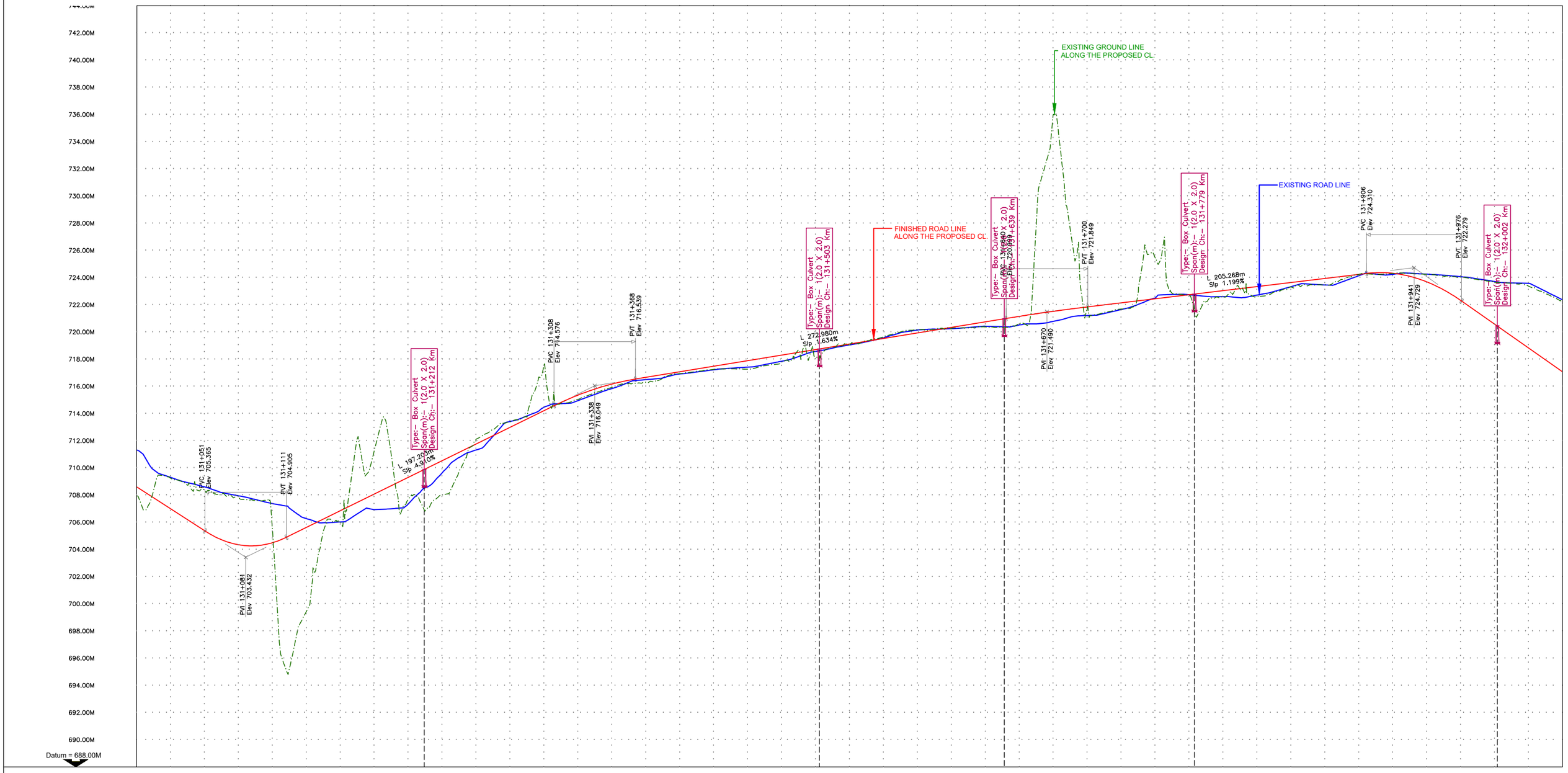
SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

CONSULTANT :
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Kolkata - 700092.

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/PLAN

REVISION MKD. - R0		SHEET NO. - 02	
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS



CHAINAGE (KM)	FINISHED ROAD LEVEL. ALONG THE PROPOSED CL.	EXISTING GROUND LEVEL ALONG THE PROPOSED CL.
131+000	708.622	707.974
131+025	707.012	709.263
131+050	705.402	708.390
131+075	704.356	707.857
131+100	704.492	705.809
131+125	705.613	699.393
131+150	706.841	706.043
131+175	708.088	711.179
131+200	709.296	707.645
131+225	710.523	707.994
131+250	711.750	712.078
131+275	712.978	713.377
131+300	714.205	717.450
131+325	715.350	715.045
131+350	716.168	715.925
131+375	716.661	716.284
131+400	717.069	716.932
131+425	717.478	717.254
131+450	717.886	717.270
131+475	718.295	717.761
131+500	718.703	718.176
131+525	719.112	719.067
131+550	719.521	719.647
131+575	719.929	720.169
131+600	720.338	720.239
131+625	720.746	720.375
131+650	721.151	720.592
131+675	721.520	736.003
131+700	721.843	721.716
131+725	722.143	721.698
131+750	722.443	725.484
131+775	722.742	722.678
131+800	723.042	722.562
131+825	723.342	722.589
131+850	723.641	723.329
131+875	723.941	723.454
131+900	724.241	724.226
131+925	724.323	724.307
131+950	723.693	724.244
131+975	722.331	724.034
132+000	720.581	723.654
132+025	718.831	723.374
132+050	717.081	722.239

HORIZONTAL ALIGNMENT: L 15.00 A 21.21 | L 44.93 R 30.00 | L 15.00 A 21.21 | L 25.00 A 38.78 | L 8.50 A 60.00 | L 25.00 A 38.73 | L 20.00 A 28.28 | L 45.74 R 40.00 | L 20.00 A 28.28 | L 15.00 A 30.00 | R 1060.00 | L 315.00 A 30.00 | L 15.00 A 21.21 | L 84.39 R 3000.00 | L 15.00 A 21.21 | L 15.00 A 17.32 | R 20.00 | L 24.35 A 17.32 | L 15.00 A 17.32 | L 15.00 A 21.21 | L 40.37 R 30.00 | L 15.00 A 21.21 | L 25.00 A 35.36 | L 41.21 R 50.00 | L 25.00 A 35.36

VERTICAL ALIGNMENT: L60.000 L1 30.000 L2 30.000 | L196.966 Slp4.910% | L60.000 L1 30.000 L2 30.000 | L272.944 Slp1.634% | L60.000 L1 30.000 L2 30.000 | L205.253 Slp1.199% | L70.000 L1 35.000 L2 35.000 | L203.60 Slp-7.000%

SUPERELEVATION (e %): e 2.500% | e 6.000% | e 7.000%

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.			
REVISIONS							

Scale :-
HOR - 1:2000
VER - 1:200

DATE:
December, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

PROFILE
Km 131+000 to Km 132+000

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT
PACKAGE - IVB

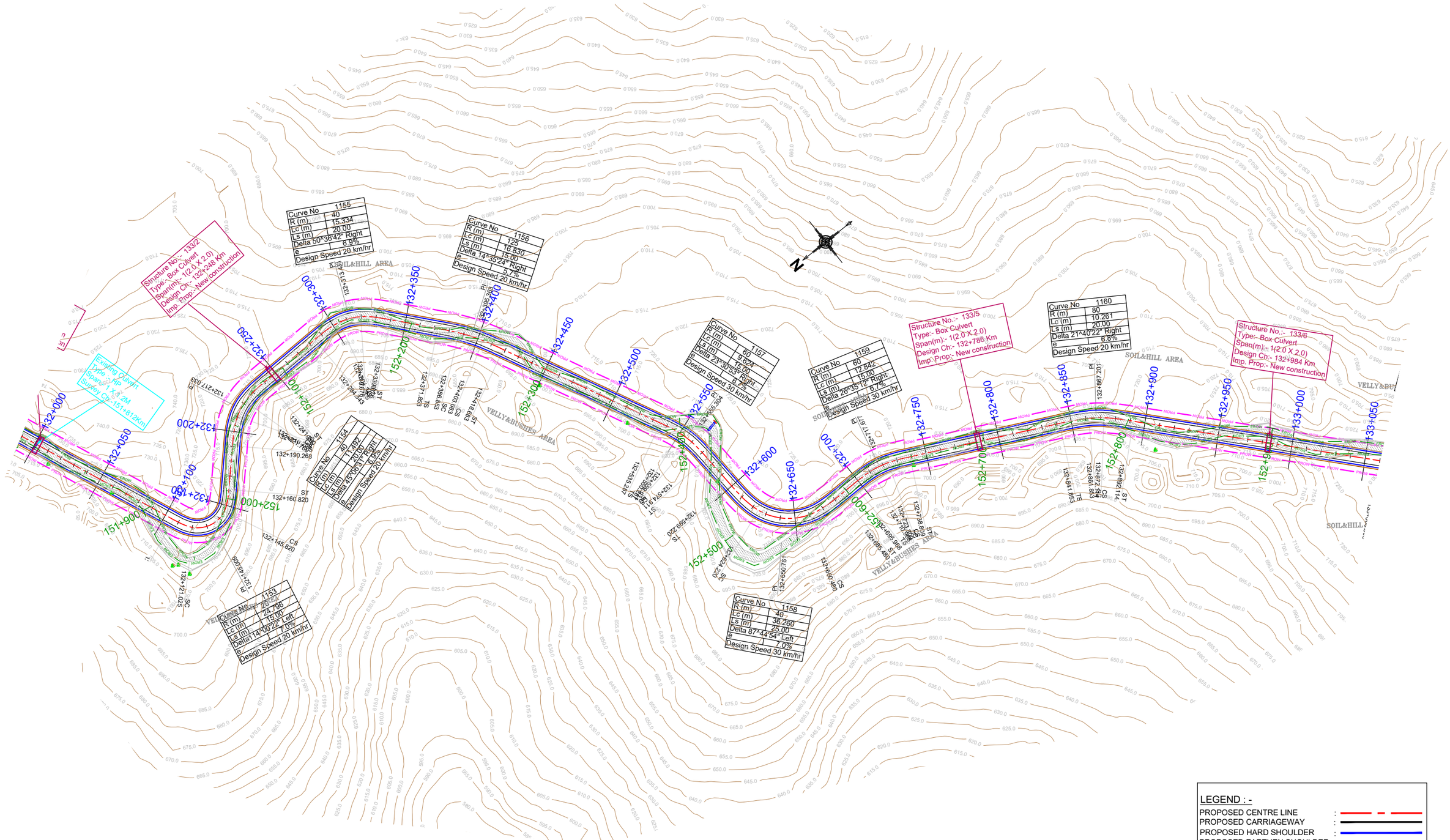
CONSULTANT :
CETEST Engineering Consultants
An ISO 9001, 14001 & OHSAS 18001 Certified Company
CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road,
Kolkata - 700092

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/PROFILE
REVISION MKD. - R0
SHEET NO. - 02A

DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

CHURACHANDPUR

TUIVAI



LEGEND : -

PROPOSED CENTRE LINE	:	
PROPOSED CARRIAGEWAY	:	
PROPOSED HARD SHOULDER	:	
PROPOSED EARTHEN SHOULDER	:	
PROPOSED ROW	:	PROW PROW
EXISTING ROW	:	EROW EROW
EXISTING CARRIAGEWAY	:	
DESIGN CHAINAGE:-	:	0+000
SURVEY CHAINAGE:-	:	0+000

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- 1:2000

DATE: December, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

PLAN
Km 132+000 to Km 133+000

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

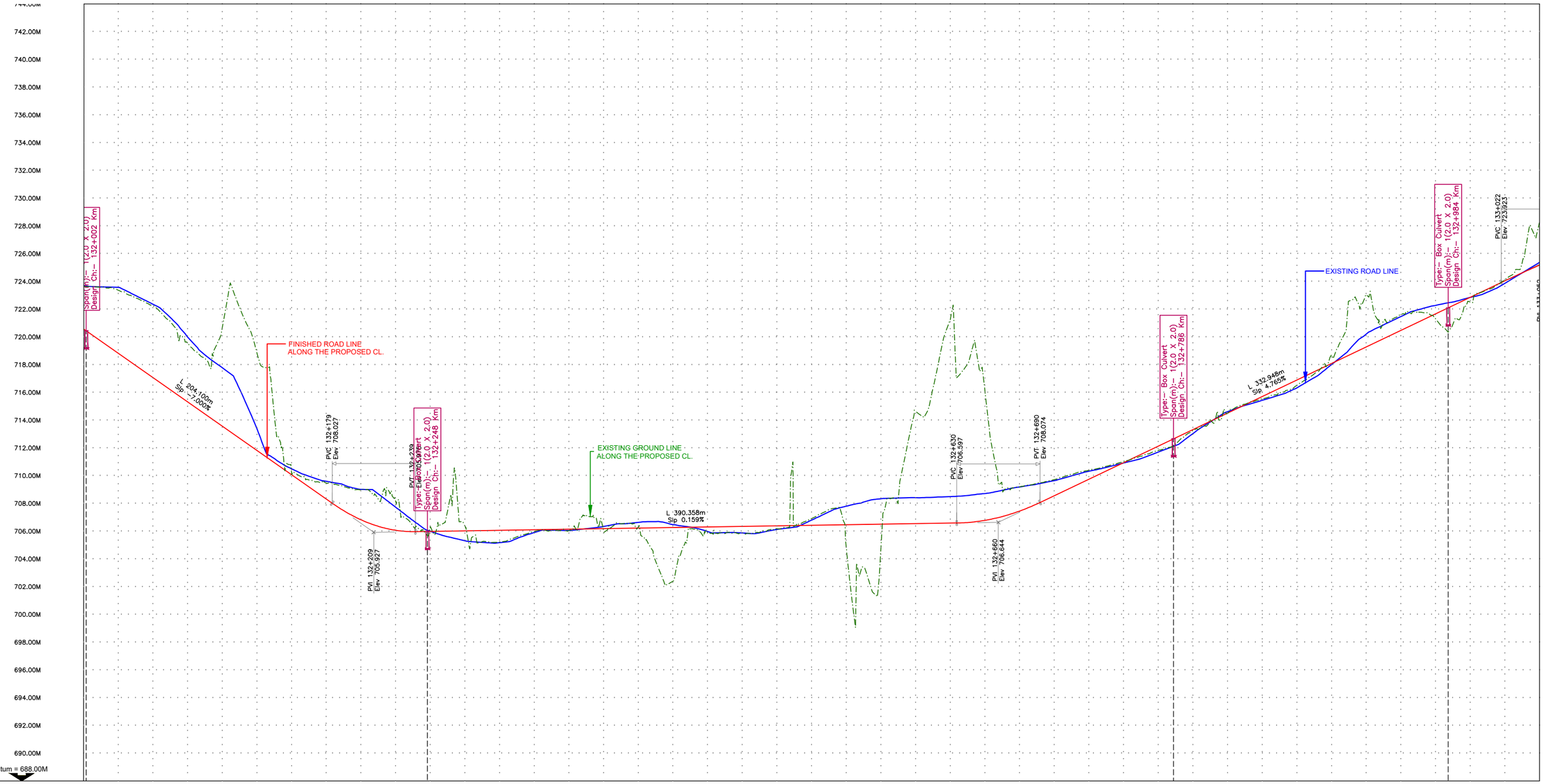
CONSULTANT :
CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092.

CETEST Engineering Consultants
An ISO 9001, 14001 & OHSAS18001 Certified Company

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/PLAN

REVISION MKD. - R0 | SHEET NO. - 03

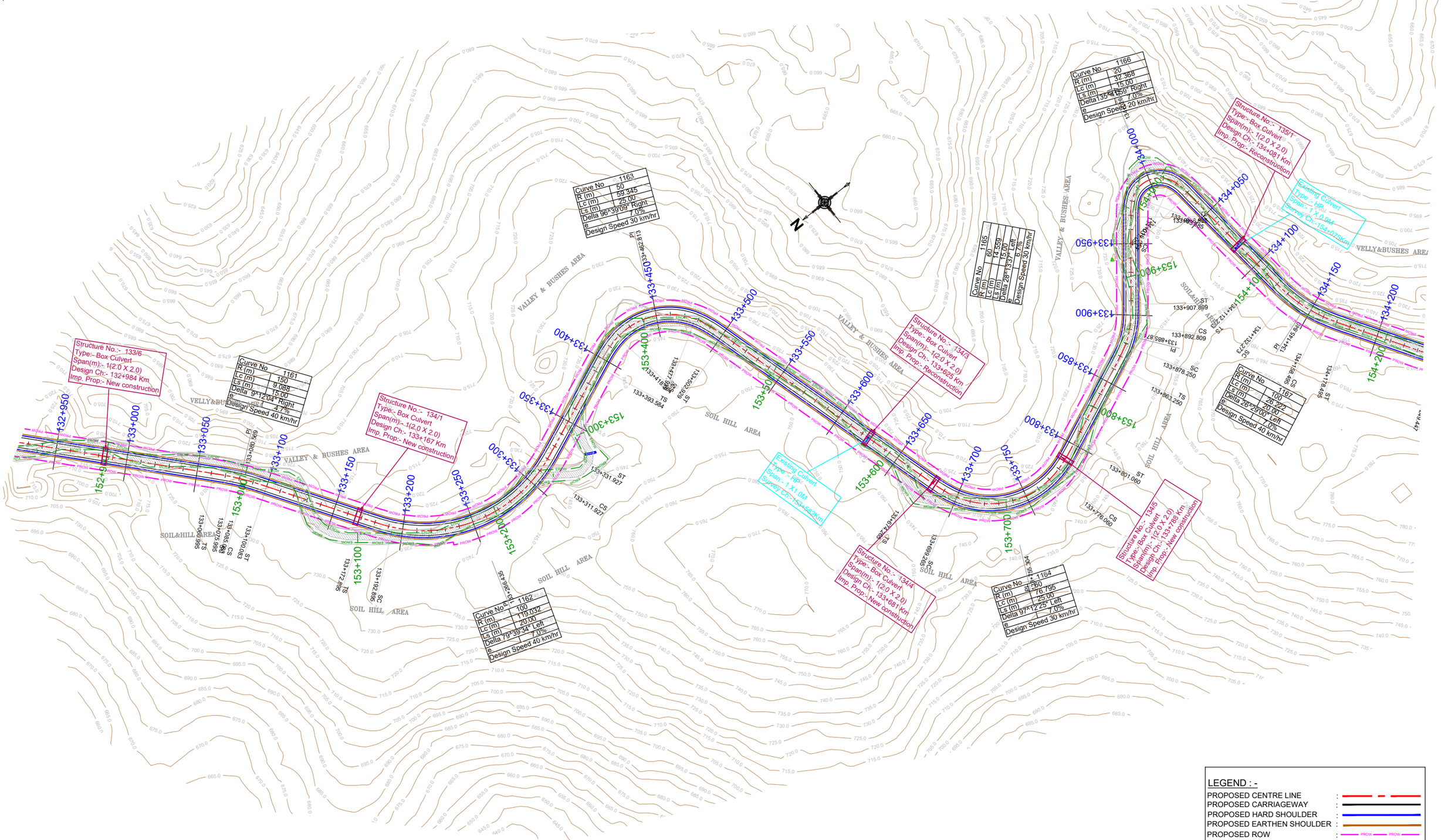
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS


744.00M
742.00M
740.00M
738.00M
736.00M
734.00M
732.00M
730.00M
728.00M
726.00M
724.00M
722.00M
720.00M
718.00M
716.00M
714.00M
712.00M
710.00M
708.00M
706.00M
704.00M
702.00M
700.00M
698.00M
696.00M
694.00M
692.00M
690.00M
Datum = 688.00M
Type:- Box Culvert Span(m):- 1(2.0 X 2.0) Design Ch:- 132+002 Km
FINISHED ROAD LINE ALONG THE PROPOSED CL.
L 204.100m Slp -7.000%
PVC 132+179 Elev 708.027
PVT 132+239 Elev 705.927
Type:- Box Culvert Span(m):- 1(2.0 X 2.0) Design Ch:- 132+248 Km
PVI 132+209 Elev 705.927
EXISTING GROUND LINE ALONG THE PROPOSED CL.
L 390.358m Slp 0.159%
PVC 132+630 Elev 706.597
PVT 132+690 Elev 708.074
PVI 132+660 Elev 706.644
Type:- Box Culvert Span(m):- 1(2.0 X 2.0) Design Ch:- 132+786 Km
EXISTING ROAD LINE
L 332.948m Slp 4.765%
Type:- Box Culvert Span(m):- 1(2.0 X 2.0) Design Ch:- 132+984 Km
PVC 133+022 Elev 723.923

| | | |

CHURACHANDPUR

TUIVAI



LEGEND : -

PROPOSED CENTRE LINE	:
PROPOSED CARRIAGEWAY	:
PROPOSED HARD SHOULDER	:
PROPOSED EARTHEN SHOULDER	:
PROPOSED ROW	: PROW PROW
EXISTING ROW	: EROW EROW
EXISTING CARRIAGEWAY	:
DESIGN CHAINAGE:-	: 0+000
SURVEY CHAINAGE:-	: 0+000

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- 1:2000

DATE: December, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street, New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

PLAN
Km 133+000 to Km 134+000

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

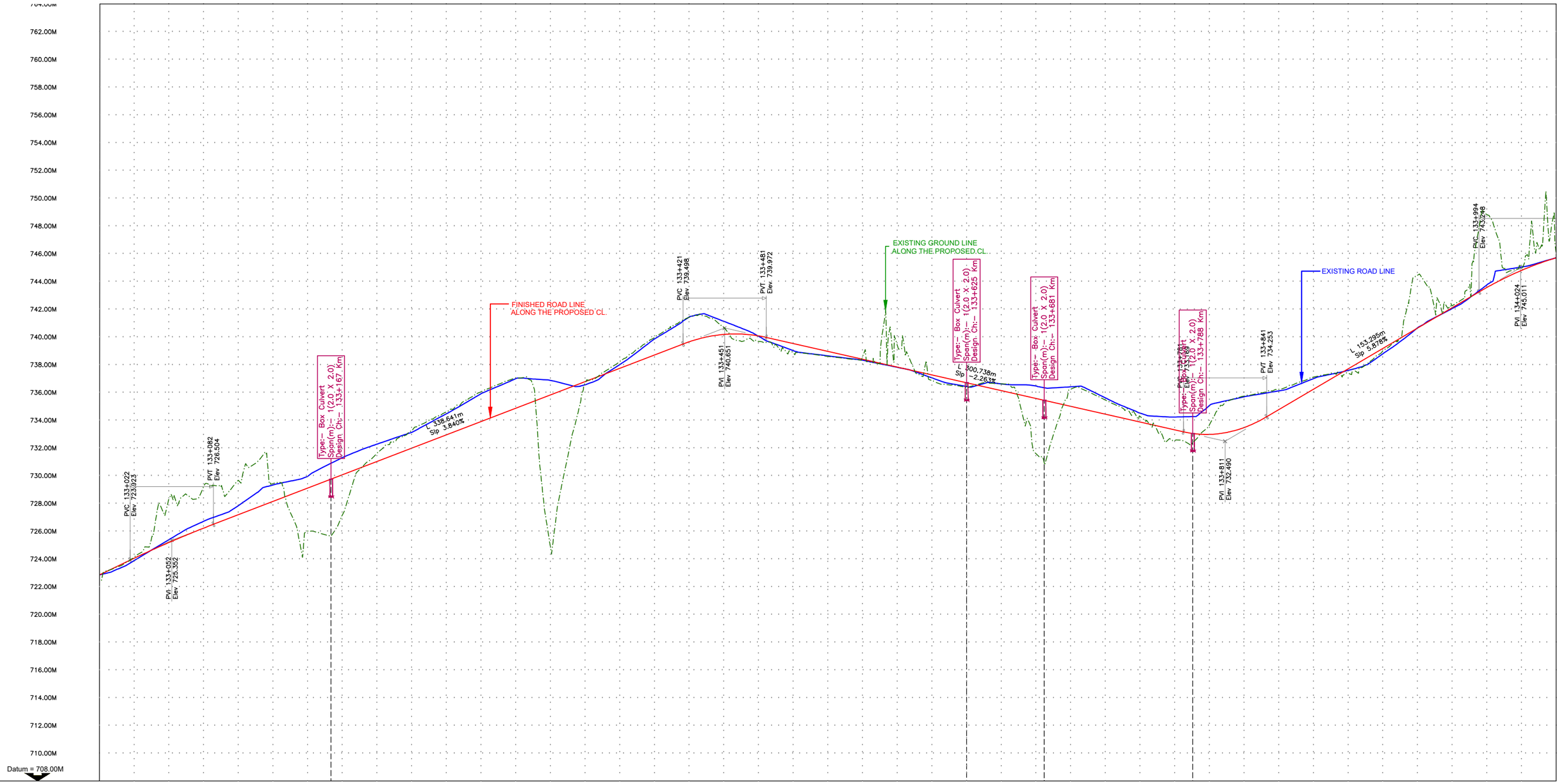
PACKAGE - IVB

CONSULTANT :
CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092.

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/PLAN

REVISION MKD. - R0 | SHEET NO. - 04

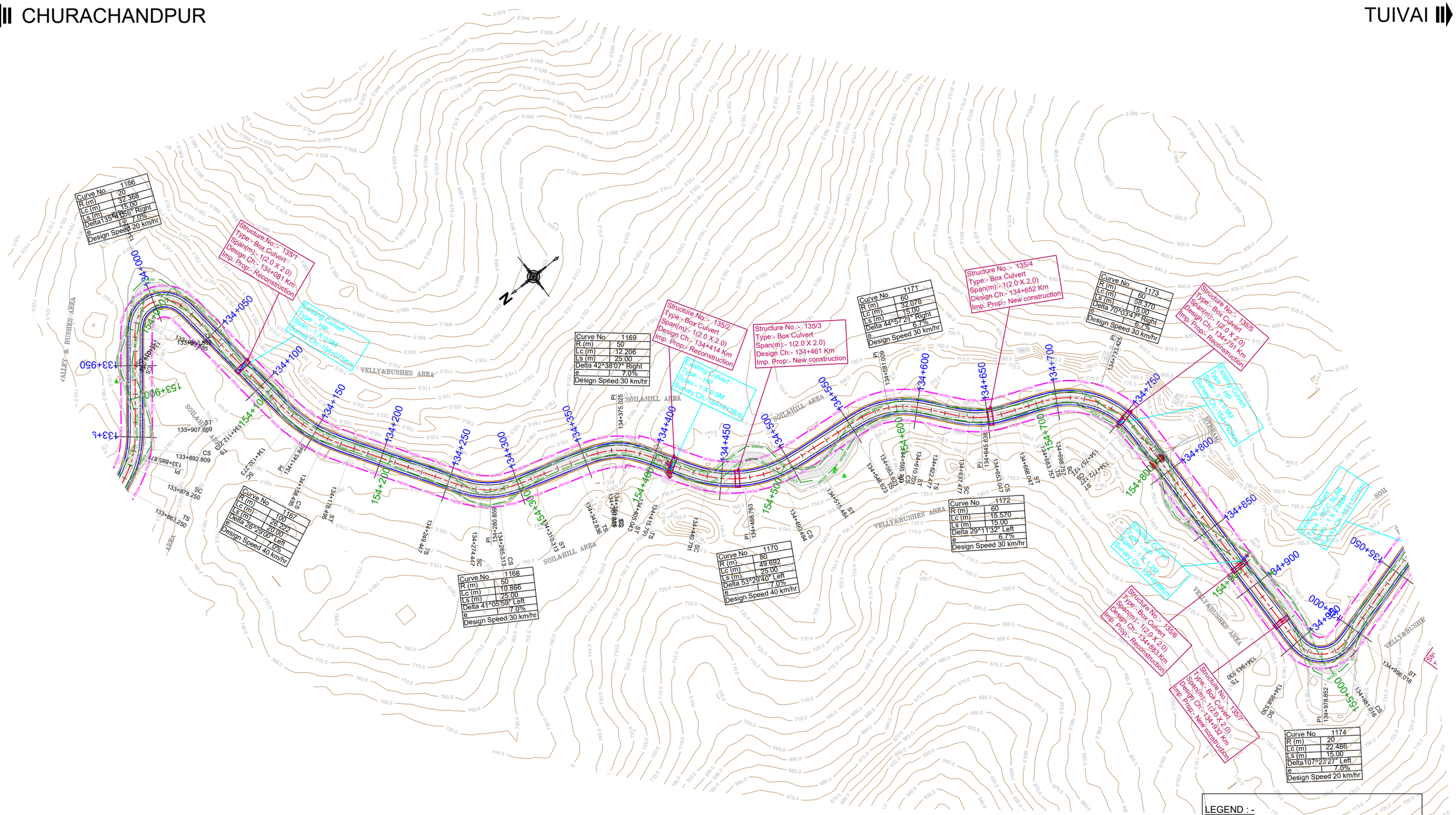
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS


764.00M
762.00M
760.00M
758.00M
756.00M
754.00M
752.00M
750.00M
748.00M
746.00M
744.00M
742.00M
740.00M
738.00M
736.00M
734.00M
732.00M
730.00M
728.00M
726.00M
724.00M
722.00M
720.00M
718.00M
716.00M
714.00M
712.00M
710.00M
Datum = 708.00M
PVC 133+022
Elev 723.923
PVI 133+052
Elev 725.362
PVT 133+082
Elev 726.504
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 133+167 Km
L 338.641m
Slp 3.840%
FINISHED ROAD LINE
ALONG THE PROPOSED CL.
PVC 133+421
Elev 739.498
PVI 133+451
Elev 740.651
PVT 133+481
Elev 739.972
EXISTING GROUND LINE
ALONG THE PROPOSED CL.
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 133+625 Km
L 300.738m
Slp -2.263%
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 133+681 Km
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 133+788 Km
PVI 133+811
Elev 732.490
PVT 133+841
Elev 734.253
EXISTING ROAD LINE
L 153.295m
Slp 5.878%
PVC 133+994
Elev 743.298
PVI 134+024
Elev 745.011

| | | |

CHURACHANDPUR

TUIVAI



					Scale :- 1:2000	CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building,3rd Floor, 4 Parliament Street, New Delhi - 110001
					DATE: December, 2019	PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.		
REVISIONS						

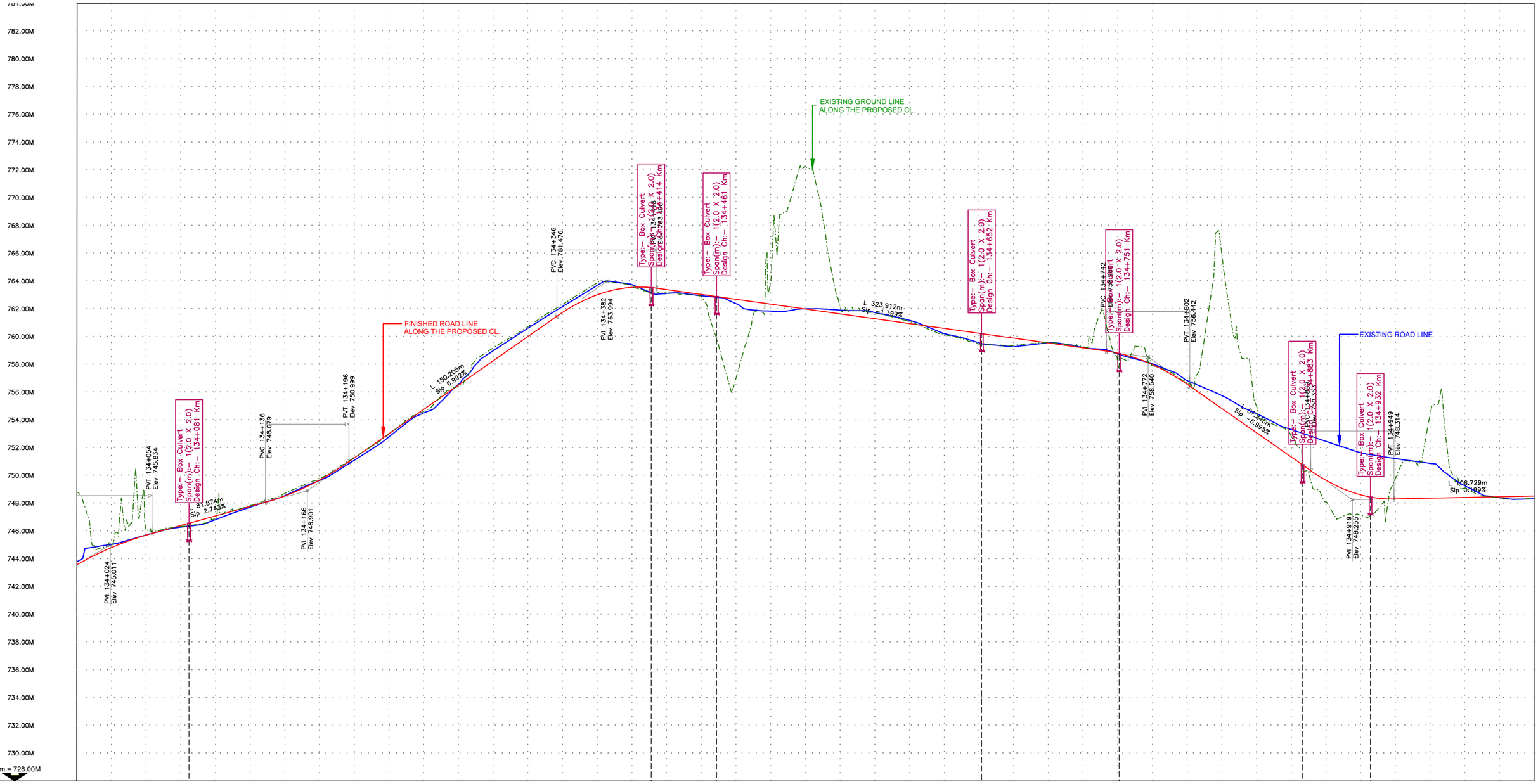
PLAN
Km 134+000 to Km 135+000

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

CONSULTANT :
CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092.

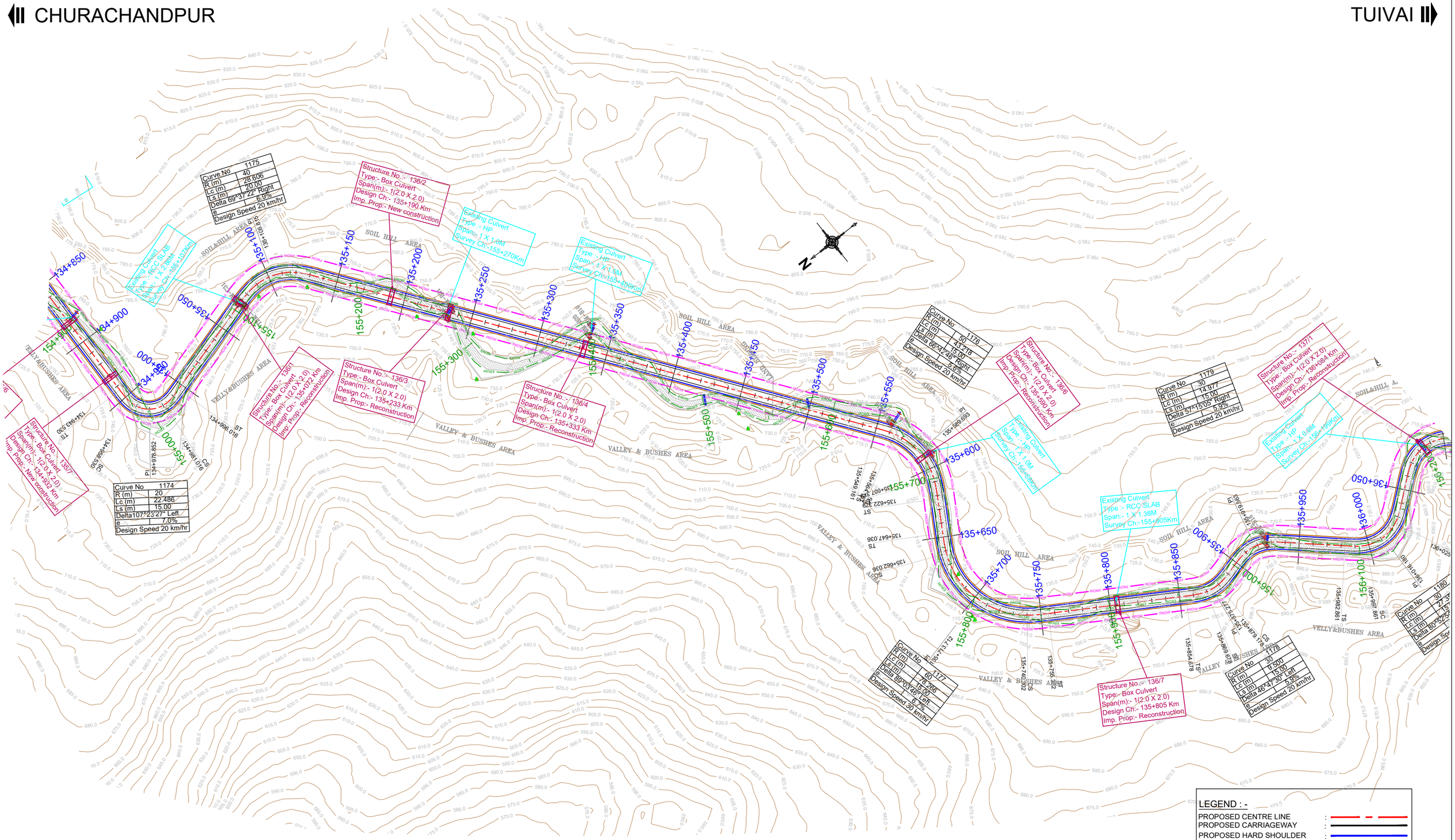
DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/PLAN			
REVISION MKD. - R0		SHEET NO. - 05	
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS


EXISTING GROUND LINE
ALONG THE PROPOSED CL.
FINISHED ROAD LINE
ALONG THE PROPOSED CL.
EXISTING ROAD LINE
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 134+081 Km
Design Ch:- 134+414 Km
Design Ch:- 134+461 Km
Design Ch:- 134+652 Km
Design Ch:- 134+751 Km
Design Ch:- 134+883 Km
Design Ch:- 134+932 Km
PVI 134+024
Elev 745.011
PVT 134+054
Elev 745.834
PVC 134+136
Elev 748.079
PVI 134+166
Elev 748.901
PVT 134+196
Elev 750.999
PVC 134+346
Elev 761.476
PVI 134+382
Elev 763.994
PVC 134+742
Elev 758.168
PVI 134+772
Elev 758.540
PVT 134+802
Elev 756.442
PVI 134+919
Elev 748.255
PVT 134+949
Elev 748.314
L 150.205m
Slp 6.992%
L 81.874m
Slp 2.743%
L 323.912m
Slp -1.399%
L 87.145m
Slp -6.995%
L 106.729m
Slp 0.199%
782.00M
780.00M
778.00M
776.00M
774.00M
772.00M
770.00M
768.00M
766.00M
764.00M
762.00M
760.00M
758.00M
756.00M
754.00M
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748.00M
746.00M
744.00M
742.00M
740.00M
738.00M
736.00M
734.00M
732.00M
730.00M
Datum = 728.00M

| | | |

CHURACHANDPUR

TUIVAI



LEGEND : -

PROPOSED CENTRE LINE	:	
PROPOSED CARRIAGEWAY	:	
PROPOSED HARD SHOULDER	:	
PROPOSED EARTHEN SHOULDER	:	
PROPOSED ROW	:	PROW
EXISTING ROW	:	EROW
EXISTING CARRIAGEWAY	:	
DESIGN CHAINAGE:-	:	0+000
SURVEY CHAINAGE:-	:	0+000

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- 1:2000

DATE: December, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

PLAN
Km 135+000 to Km 136+000

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

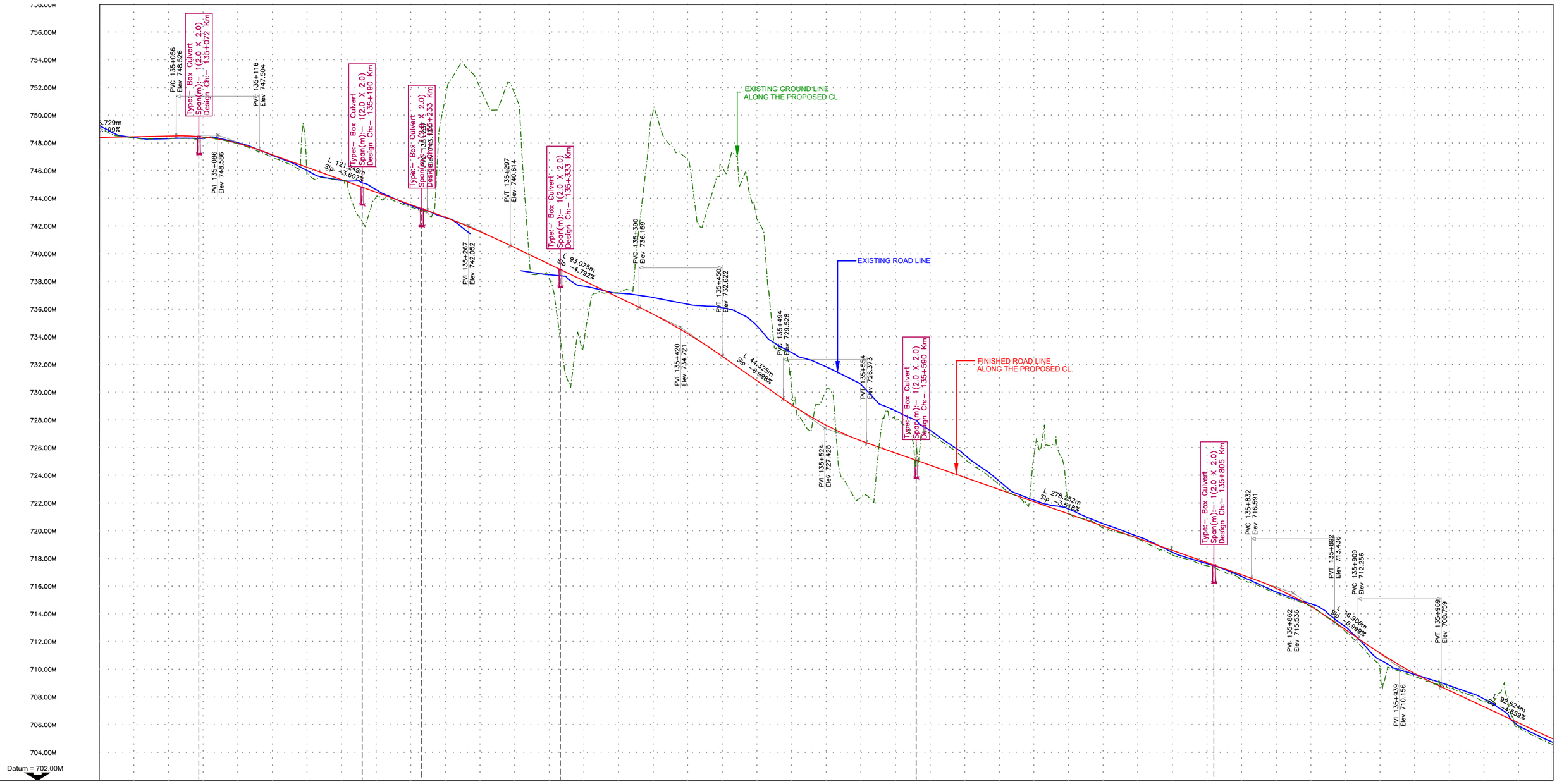
PACKAGE - IVB

CONSULTANT :
CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road,
Kolkata - 700092.

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/PLAN

REVISION MKD. - R0 | SHEET NO. - 06

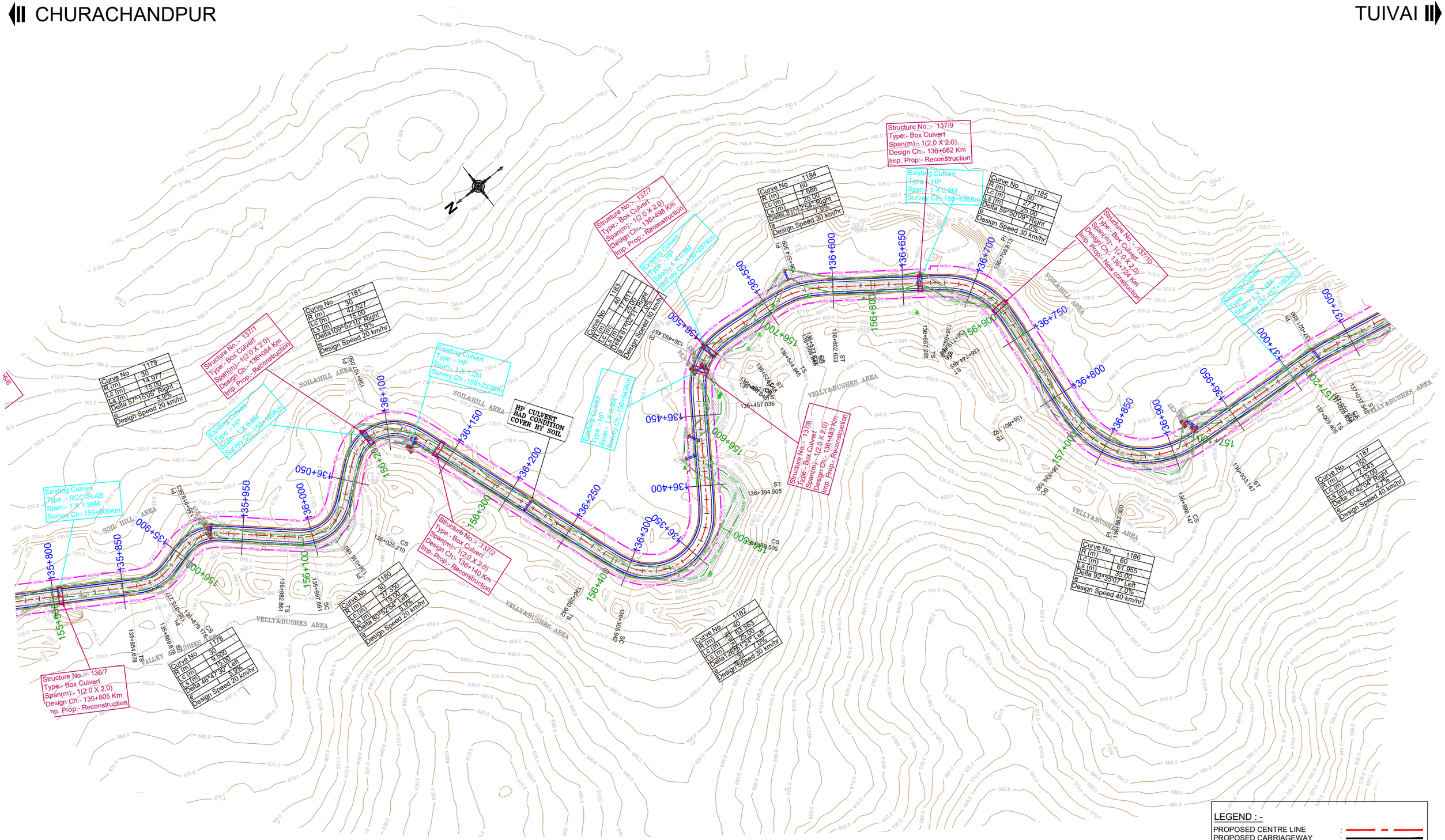
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS


EXISTING GROUND LINE
ALONG THE PROPOSED CL.
EXISTING ROAD LINE
FINISHED ROAD LINE
ALONG THE PROPOSED CL.
Datum = 702.00M
PVC 135+056 Elev 748.526
PVI 135+086 Elev 748.586
PVI 135+116 Elev 747.504
PVI 135+267 Elev 742.052
PVT 135+297 Elev 740.614
PVC 135+390 Elev 736.159
PVI 135+420 Elev 734.721
PVT 135+450 Elev 732.622
PVC 135+494 Elev 729.528
PVI 135+524 Elev 727.428
PVT 135+554 Elev 726.373
PVC 135+832 Elev 716.591
PVI 135+862 Elev 715.536
PVT 135+892 Elev 713.436
PVC 135+909 Elev 712.256
PVT 135+969 Elev 708.759
PVI 135+939 Elev 710.156
Type:- Box Culvert Span(m):- 1(2.0 X 2.0) Design Ch:- 135+072 Km
Type:- Box Culvert Span(m):- 1(2.0 X 2.0) Design Ch:- 135+190 Km
Type:- Box Culvert Span(m):- 1(2.0 X 2.0) Design Ch:- 135+233 Km
Type:- Box Culvert Span(m):- 1(2.0 X 2.0) Design Ch:- 135+333 Km
Type:- Box Culvert Span(m):- 1(2.0 X 2.0) Design Ch:- 135+590 Km
Type:- Box Culvert Span(m):- 1(2.0 X 2.0) Design Ch:- 135+805 Km
L 121.170m Slp -3.607%
L 93.075m Slp -4.792%
L 44.325m Slp -6.998%
L 278.252m Slp -3.518%
L 16.864m Slp -6.998%
L 92.524m Slp -4.659%
5.729m 199%

| | | |

CHURACHANDPUR

TUIVAI



LEGEND : -

PROPOSED CENTRE LINE	:
PROPOSED CARRIAGEWAY	:
PROPOSED HARD SHOULDER	:
PROPOSED EARTHEN SHOULDER	:
PROPOSED ROW	: PROW PROW
EXISTING ROW	: EROW EROW
EXISTING CARRIAGEWAY	:
DESIGN CHAINAGE:-	: 0+000
SURVEY CHAINAGE:-	: 0+000

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- 1:2000

DATE: December, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

PLAN
Km 136+000 to Km 137+000

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

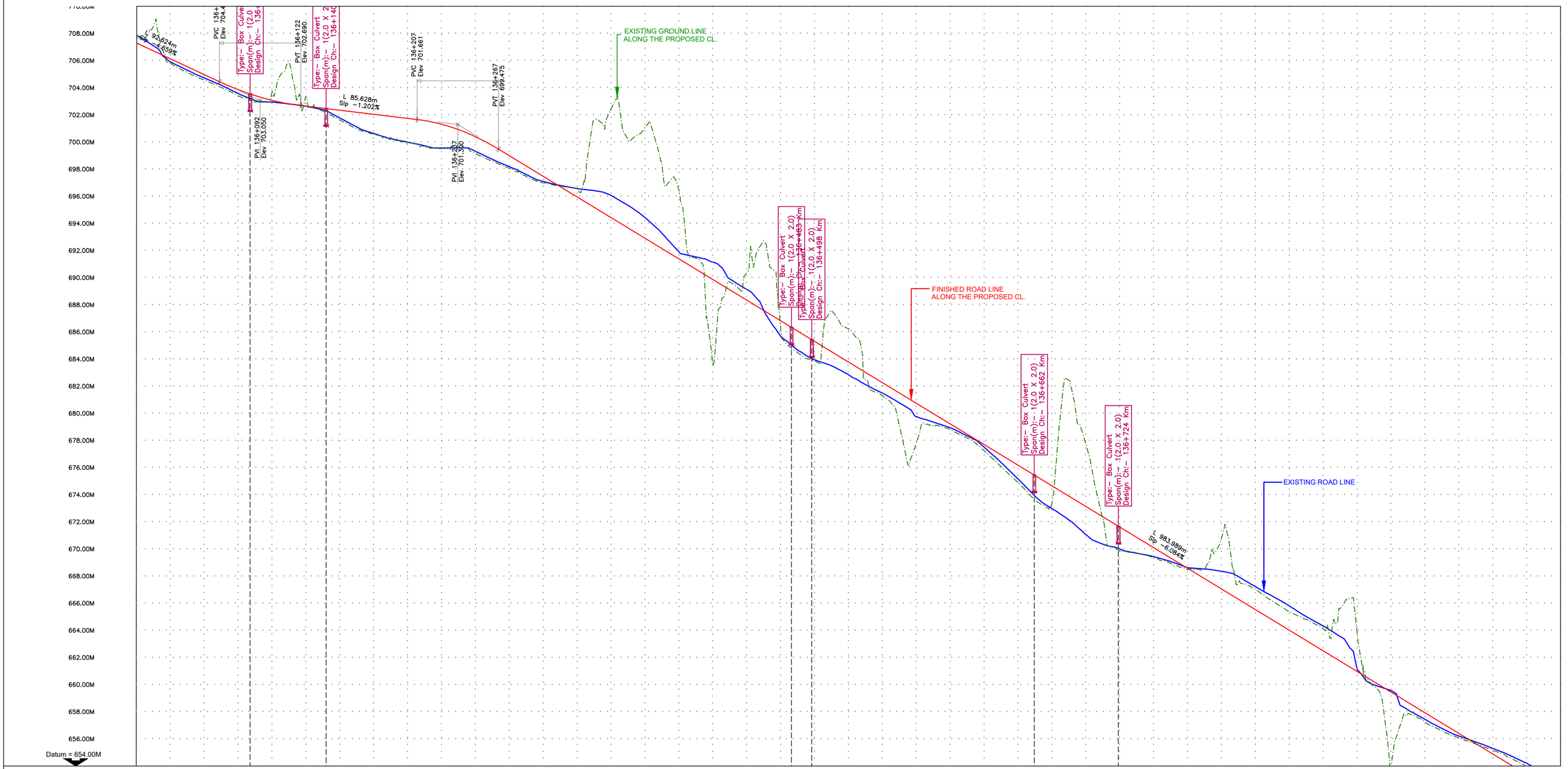
CONSULTANT :
CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092.

CETEST Engineering Consultants
An ISO 9001, 14001 & OHSAS18001 Certified Company

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/PLAN

REVISION MKD. - R0 | SHEET NO. - 07

DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS



FINISHED ROAD LEVEL. ALONG THE PROPOSED CL.	707.676 707.313 705.836 706.149 704.578 704.984 703.425 703.872 703.619 703.081 703.367 702.648 701.634 702.347 700.592 702.047 699.884 701.747 699.527 701.316 699.172 700.398 698.061 698.996 696.999 697.475 696.589 695.954 702.427 694.433 701.040 692.912 696.502 691.391 683.649 689.870 690.343 688.349 686.398 686.828 683.861 685.307 686.242 683.787 681.299 682.286 677.789 680.745 678.806 679.224 677.244 677.703 674.905 676.182 673.351 674.661 677.767 673.140 669.872 671.619 669.368 670.098 668.476 668.577 670.763 667.056 667.034 665.535 665.384 664.014 664.122 662.493 663.811 660.972 653.919 659.451 657.256 657.930 656.043 656.409 655.147 654.888 653.921 653.367 652.413 651.846
EXISTING GROUND LEVEL ALONG THE PROPOSED CL.	
HORIZONTAL ALIGNMENT	L 27.35 L 15.00 A 27.21 R 30.00 L 15.00 A 27.21 L 42.53 R 30.00 L 15.00 A 27.21 L 25.00 A 31.62 L 63.56 R 40.00 L 25.00 A 31.62 L 25.00 A 31.62 L 17.61 R 40.00 L 25.00 A 31.62 L 25.00 A 38.78 L 7.69 60.00 L 25.00 A 38.73 L 25.00 A 35.36 L 27.22 R 50.00 L 25.00 A 35.36 L 35.00 A 45.83 L 61.96 R 60.00 L 35.00 A 45.83 L 15.00 A 49.43 L 45.00 R 450.00
VERTICAL ALIGNMENT	L60.000 L1 30.000 L2 30.000 L85.622 Slp –1.202% L60.000 L1 30.000 L2 30.000 L982.173 Slp–6.084%
SUPERELEVATION (e %)	
CHAINAGE (KM)	136+000 136+025 136+050 136+075 136+100 136+125 136+150 136+175 136+200 136+225 136+250 136+275 136+300 136+325 136+350 136+375 136+400 136+425 136+450 136+475 136+500 136+525 136+550 136+575 136+600 136+625 136+650 136+675 136+700 136+725 136+750 136+775 136+800 136+825 136+850 136+875 136+900 136+925 136+950 136+975 137+000 137+025 137+050

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :-
HOR - 1:2000
VER - 1:200

DATE: December, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

PROFILE
Km 136+000 to Km 137+000

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

CONSULTANT :
CETEST Engineering Consultants
An ISO 9001, 14001 & OHSAS 18001 Certified Company
CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092.

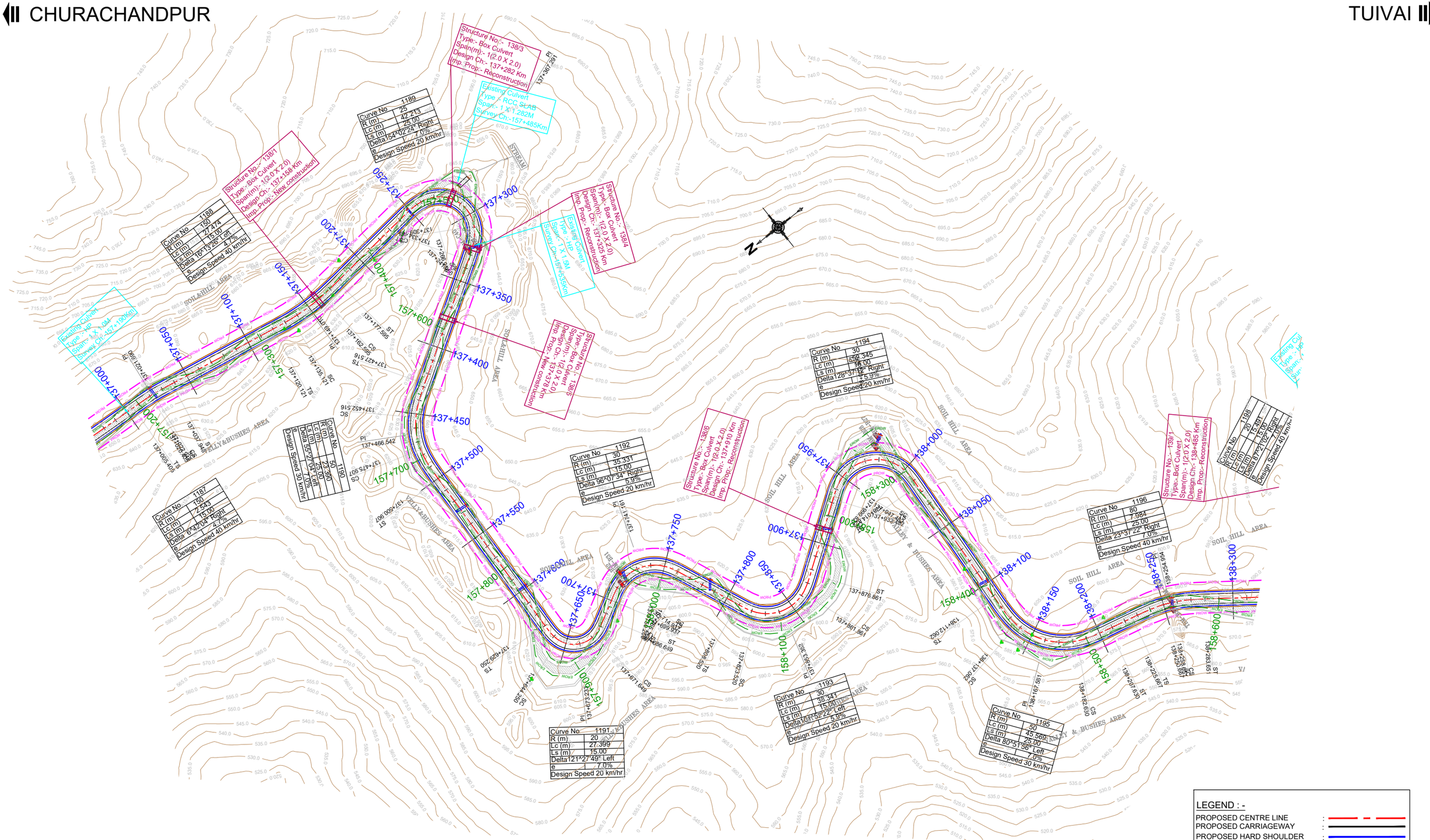
DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/PROFILE

REVISION MKD. - R0 | SHEET NO. - 07A

DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

CHURACHANDPUR

TUIVAI



LEGEND : -

PROPOSED CENTRE LINE	:
PROPOSED CARRIAGEWAY	:
PROPOSED HARD SHOULDER	:
PROPOSED EARTHEN SHOULDER	:
PROPOSED ROW	: PROW PROW
EXISTING ROW	: EROW EROW
EXISTING CARRIAGEWAY	:
DESIGN CHAINAGE:-	: 0+000
SURVEY CHAINAGE:-	: 0+000

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- 1:2000

DATE: December, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street, New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

PLAN
Km 137+000 to Km 138+000

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

CONSULTANT :
CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road,
Kolkata - 700092.

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/PLAN

REVISION MKD. - R0 | SHEET NO. - 18

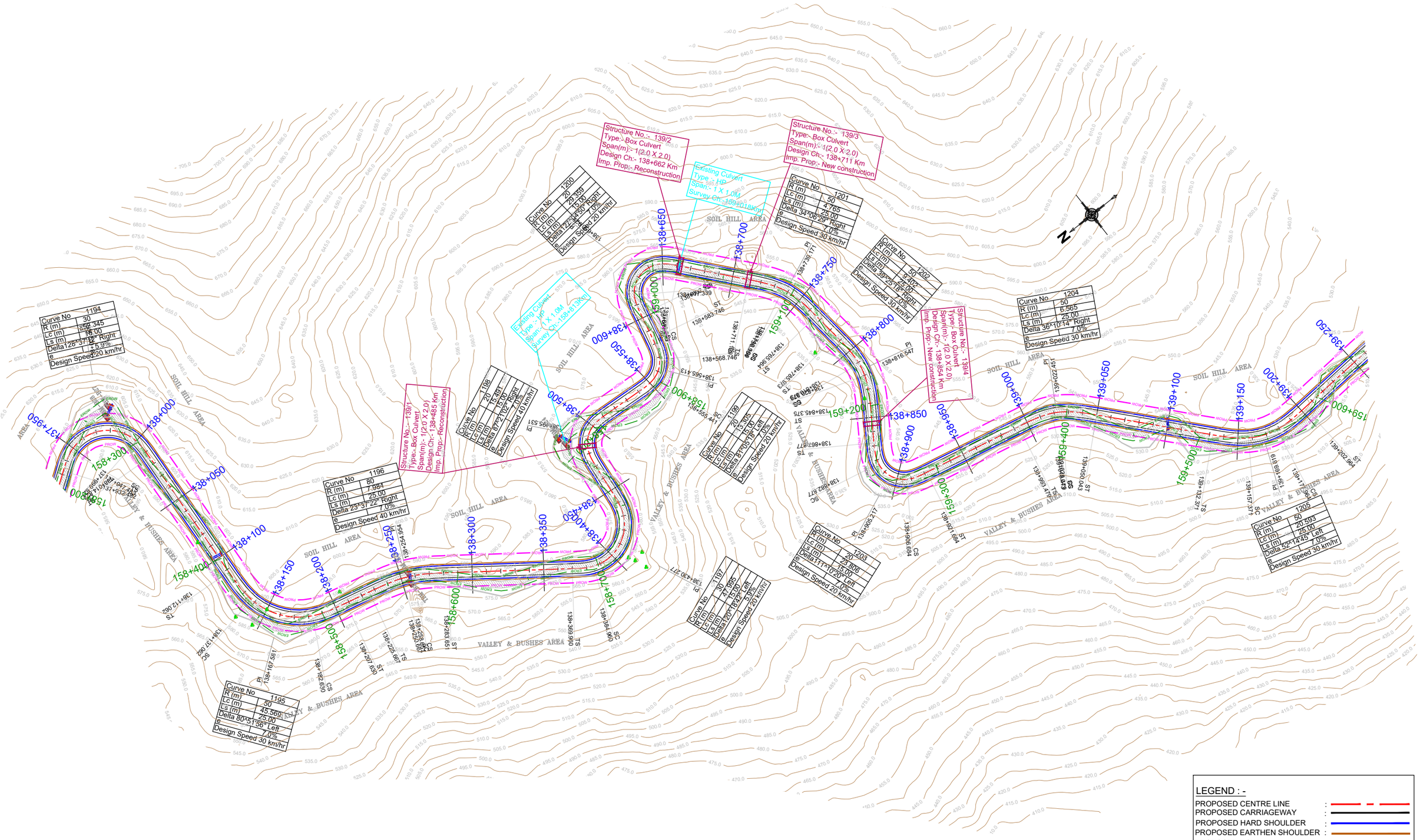
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS


FINISHED ROAD LINE
ALONG THE PROPOSED CL.
EXISTING ROAD LINE
EXISTING GROUND LINE
ALONG.THE PROPOSED CL.
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 137+158 Km
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 137+282 Km
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 137+325 Km
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 137+378 Km
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 137+910 Km
PVC 137+249
Elev 639.721
PVT 137+309
Elev 637.296
PVT 137+279
Elev 637.886
PVC 137+408
Elev 635.312
PVT 137+468
Elev 632.612
PVI 137+438
Elev 634.712
L 99.174m
Slp -2.000%
L 1072.816m
Slp -7.000%
658.00M
656.00M
654.00M
652.00M
650.00M
648.00M
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592.00M
590.00M
588.00M
586.00M
Datum = 584.00M

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CHURACHANDPUR

TUIVAI



MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- 1:2000

DATE: December, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

PLAN
Km 138+000 to Km 139+000

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

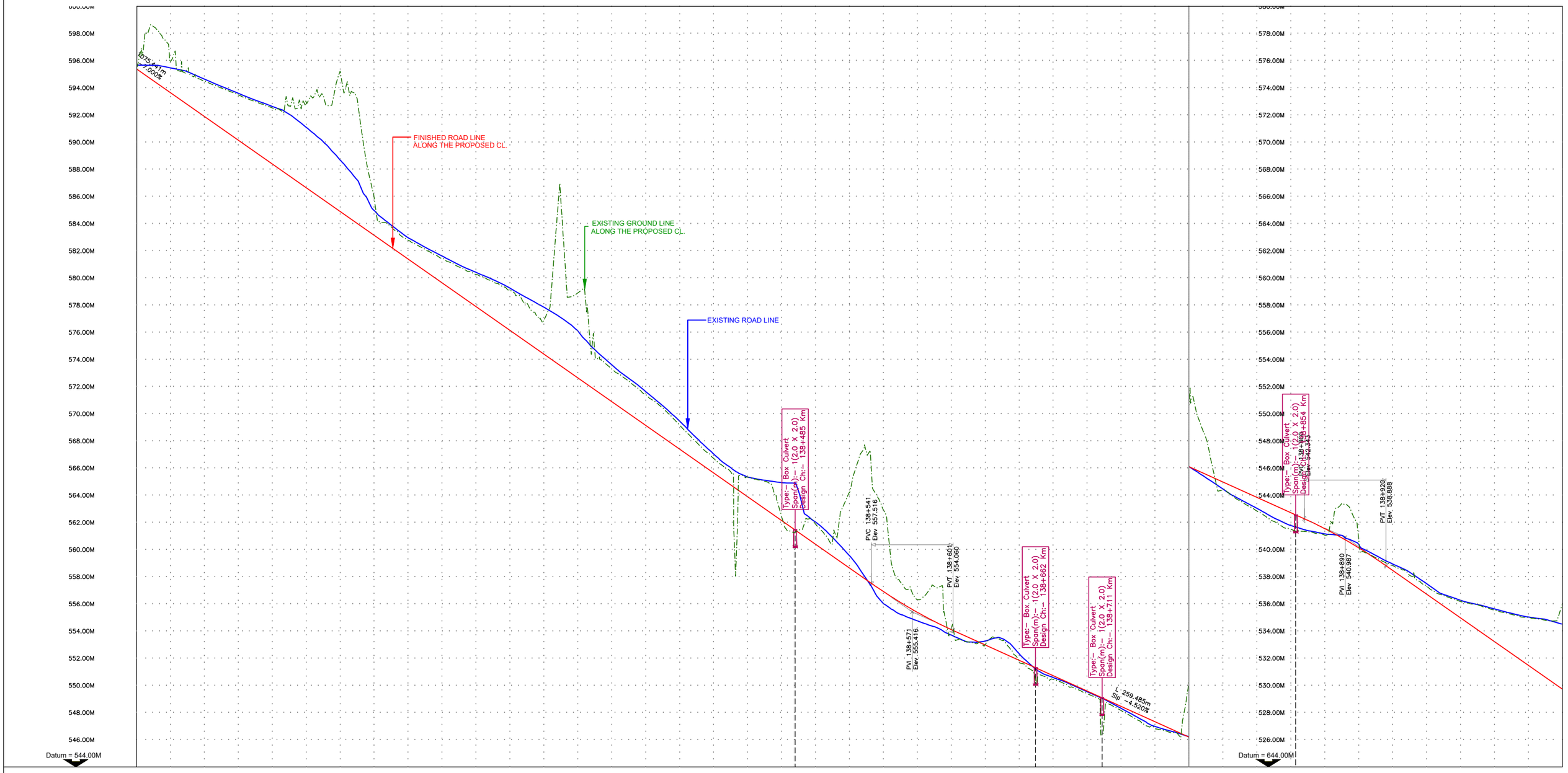
PACKAGE - IVB

CONSULTANT :
CETEST Engineering Consultants
An ISO 9001, 14001 & OHSAS 18001 Certified Company
CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/PLAN

REVISION MKD. - R0 | SHEET NO. - 09

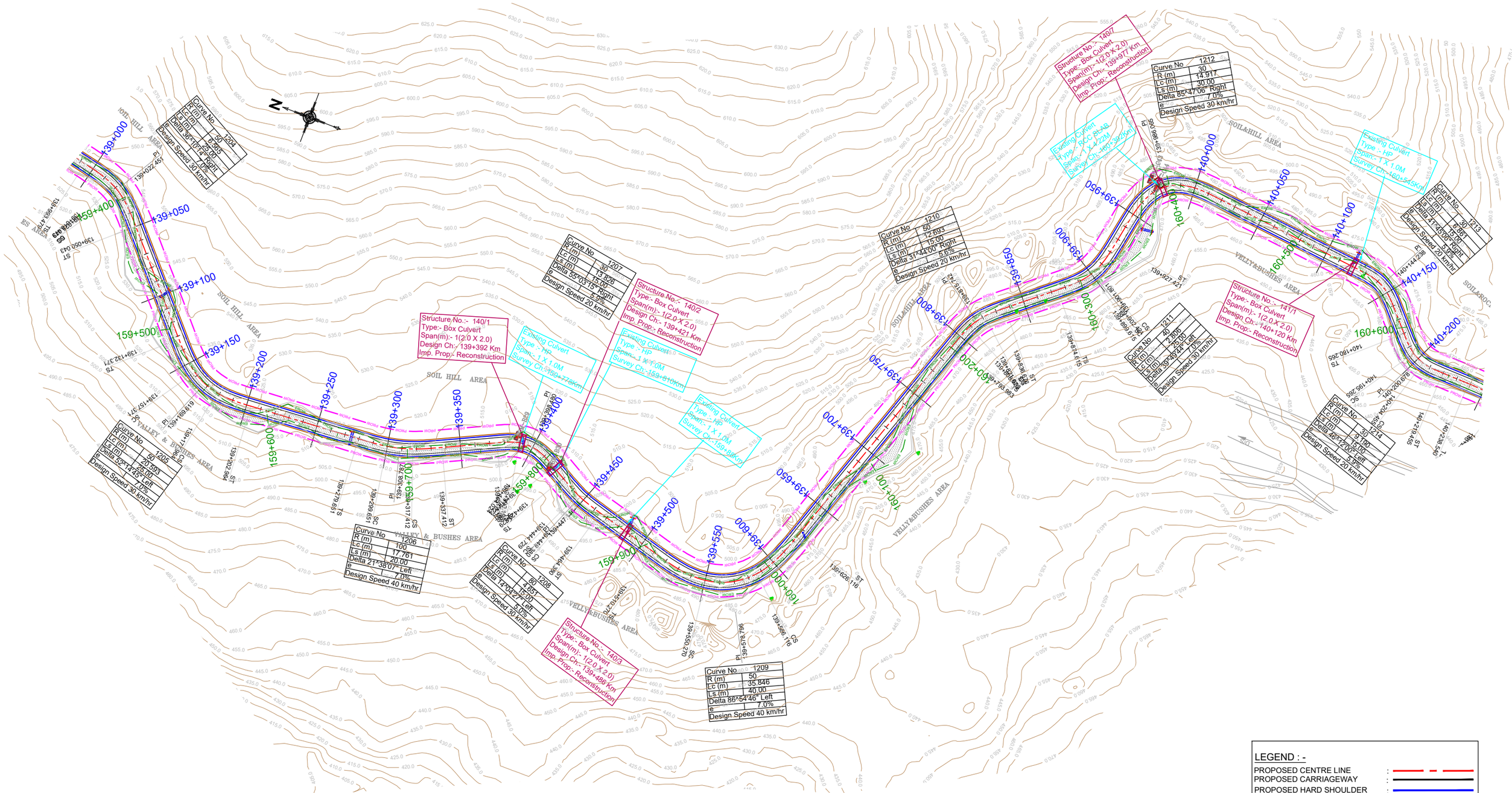
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS


FINISHED ROAD LINE
ALONG THE PROPOSED CL.
EXISTING GROUND LINE
ALONG THE PROPOSED CL.
EXISTING ROAD LINE
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 138+485 Km
PVC 138+541
Elev 557.516
PVT 138+601
Elev 554.060
PVI 138+571
Elev 555.416
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 138+662 Km
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 138+711 Km
L 259.485m
Slp -4.520%
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 138+669 to 138+854 Km
Elev. 542.343
PVT 138+920
Elev. 536.886
PVI 138+890
Elev. 540.897
Datum = 544.00M
Datum = 644.00M

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CHURACHANDPUR

TUIVAI



LEGEND : -

PROPOSED CENTRE LINE	:	
PROPOSED CARRIAGEWAY	:	
PROPOSED HARD SHOULDER	:	
PROPOSED EARTHEN SHOULDER	:	
PROPOSED ROW	:	PROW PROW
EXISTING ROW	:	EROW EROW
EXISTING CARRIAGEWAY	:	
DESIGN CHAINAGE:-	:	0+000
SURVEY CHAINAGE:-	:	0+000

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- 1:2000

DATE: December, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

PLAN
Km 139+000 to Km 140+000

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

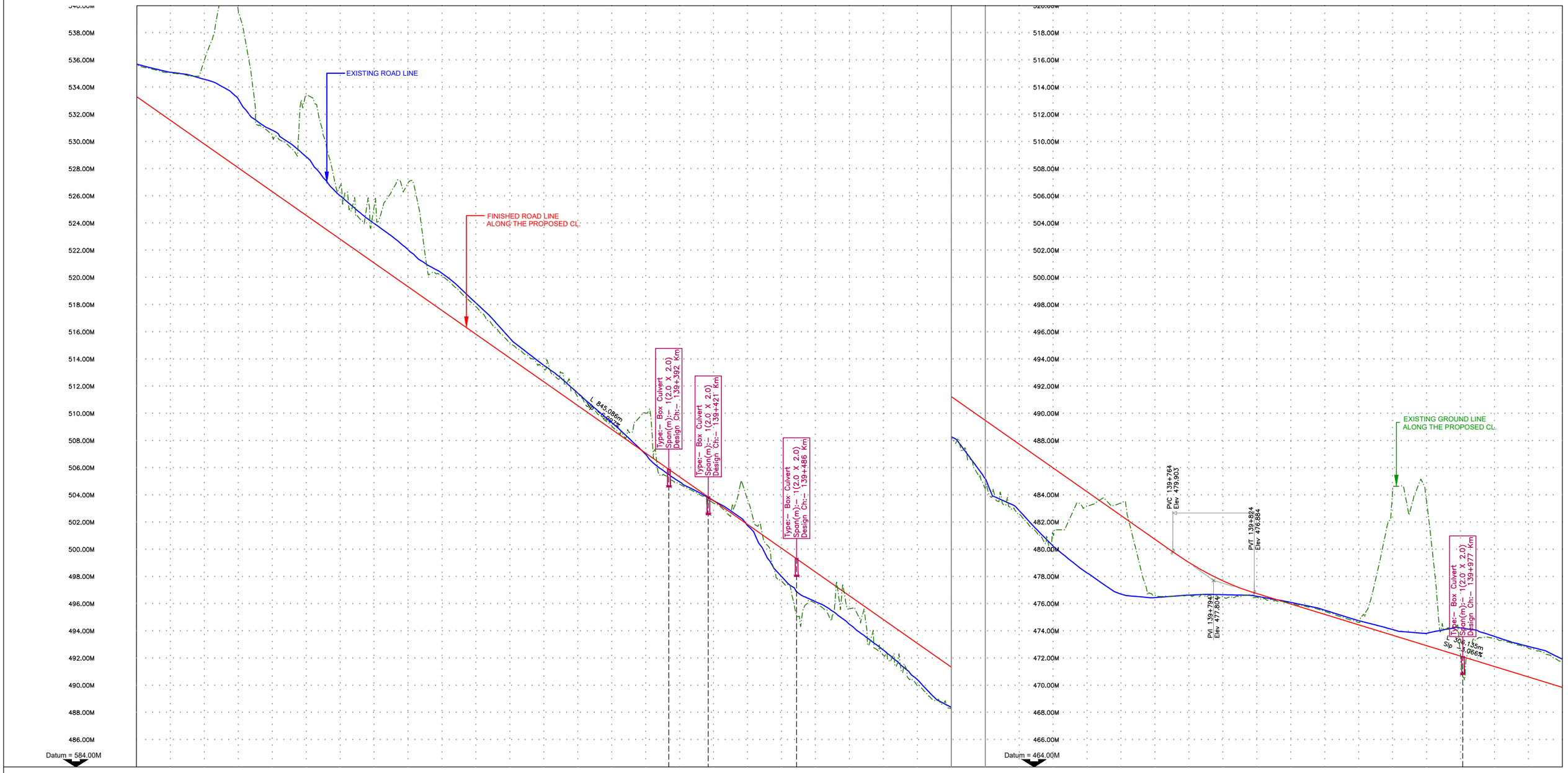
PACKAGE - IVB

CONSULTANT :
CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road,
Kolkata - 700092.

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/PLAN

REVISION MKD. - R0 | SHEET NO. - 10

DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS



FINISHED ROAD LEVEL. ALONG THE PROPOSED CL.	533.324 535.625 535.075 531.575 535.964 529.826 539.703 528.077 530.523 526.328 533.51 524.578 526.720 522.829 525.157 521.080 526.935 519.331 520.126 517.582 517.868 515.833 515.180 514.083 513.316 512.334 511.215 510.585 509.088 508.836 510.043 507.087 504.804 505.337 503.423 503.588 503.653 501.839 497.669 500.090 496.041 498.341 495.638 496.591 492.213 494.842 489.972 493.093 488.272 491.344 484.631 489.595 482.627 487.845 481.339 486.096 483.242 484.347 483.486 482.598 476.686 480.849 476.707 479.143 476.595 477.786 476.545 476.839 476.088 476.072 475.529 475.305 474.721 474.539 483.930 473.772 483.824 473.005 472.610 472.239 473.495 471.472 472.84 470.706 471.737 469.939
EXISTING GROUND LEVEL ALONG THE PROPOSED CL.	535.625 535.075 535.964 539.703 530.523 533.51 526.720 525.157 526.935 520.126 517.868 515.180 513.316 511.215 509.088 510.043 504.804 503.423 503.653 497.669 496.041 495.638 492.213 489.972 488.272 484.631 482.627 481.339 483.242 483.486 476.686 476.707 476.595 476.545 476.088 475.529 474.721 483.930 483.824 472.610 473.495 472.84 471.737
HORIZONTAL ALIGNMENT	L 25.00 A 35.36 6.56 50.00 25.00 35.36 L 25.00 A 35.36 L 20.59 R 50.00 L 25.00 A 35.36 L 20.00 A 44.72 17.76 R 100.00 L 20.00 A 44.72 L 15.00 A 21.21 13.82 R 30.00 15.00 21.21 L 15.00 A 21.21 4.64 R 30.00 5.00 L 40.00 A 44.72 L 35.85 R 50.00 L 40.00 A 44.72 L 15.00 A 27.39 12.69 R 50.00 15.00 27.39 L 25.00 A 37.12 2.84 R 40.00 25.00 31.62 L 30.00 A 30.00 L 14.92 R 30.00 L 30.00 A 30.00
VERTICAL ALIGNMENT	L843.025 Slp-6.997% L60.000 L1 30.000 L2 30.000 L305.991 Slp-3.066%
SUPERELEVATION (e %)	139+002 e 2.500% 139+018 e 2.500% 139+025 e 7.000% 139+041 e 2.500% 139+059 e 2.500% 139+123 e 2.500% 139+141 e 2.500% 139+157 e 7.000% 139+178 e 7.000% 139+194 e 2.500% 139+212 e 2.500% 139+273 e 2.500% 139+287 e 2.500% 139+300 e 7.000% 139+317 e 7.000% 139+330 e 2.500% 139+345 e 2.500% 139+370 e 2.500% 139+381 e 2.500% 139+400 e 5.000% 139+404 e 5.000% 139+445 e 2.500% 139+459 e 2.500% 139+470 e 2.500% 139+496 e 2.500% 139+525 e 2.500% 139+550 e 7.000% 139+586 e 7.000% 139+612 e 2.500% 139+640 e 2.500% 139+789 e 2.500% 139+799 e 2.500% 139+809 e 5.000% 139+822 e 5.000% 139+851 e 2.500% 139+866 e 2.500% 139+884 e 2.500% 139+900 e 2.500% 139+972 e 7.000% 139+987 e 7.000% 140+006 e 2.500% 140+028 e 2.500%
CHAINAGE (KM)	139+000 139+025 139+050 139+075 139+100 139+125 139+150 139+175 139+200 139+225 139+250 139+275 139+300 139+325 139+350 139+375 139+400 139+425 139+450 139+475 139+500 139+525 139+550 139+575 139+600 139+625 139+650 139+675 139+700 139+725 139+750 139+775 139+800 139+825 139+850 139+875 139+900 139+925 139+950 139+975 140+000 140+025 140+050

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :-
HOR - 1:2000
VER - 1:200

DATE:
December, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

PROFILE
Km 139+000 to Km 140+000

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

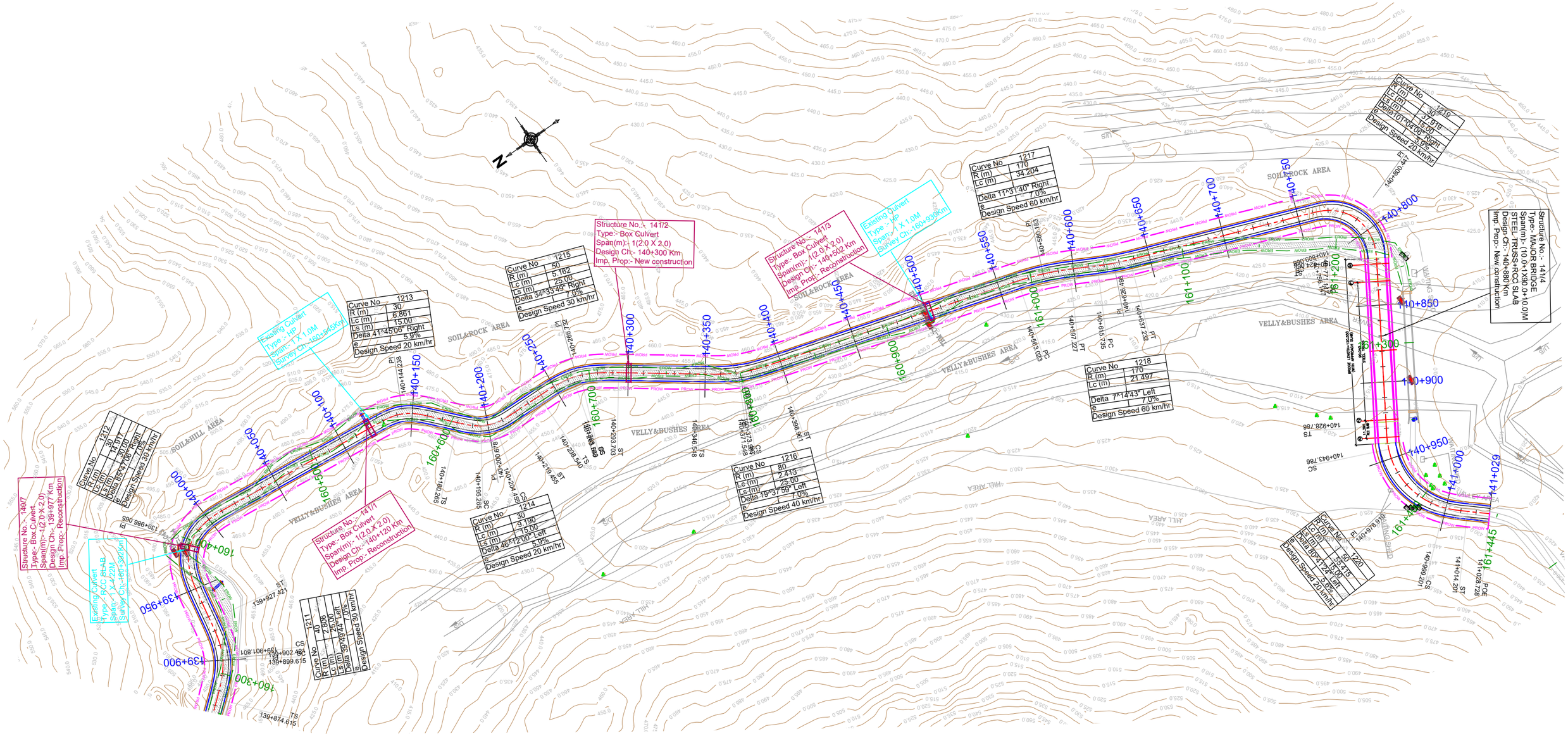
CONSULTANT :
CETEST Engineering Consultants
An ISO 9001, 14001 & OHSAS 18001 Certified Company
CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/PROFILE
REVISION MKD. - R0
SHEET NO. - 10A

DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

CHURACHANDPUR

TUIVAI



LEGEND : -

PROPOSED CENTRE LINE	:	
PROPOSED CARRIAGEWAY	:	
PROPOSED HARD SHOULDER	:	
PROPOSED EARTHEN SHOULDER	:	
PROPOSED ROW	:	PROW PROW
EXISTING ROW	:	EROW EROW
EXISTING CARRIAGEWAY	:	
DESIGN CHAINAGE:-	:	0+000
SURVEY CHAINAGE:-	:	0+000

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- 1:2000

DATE: December, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

PLAN
Km 140+000 to Km 141+029

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

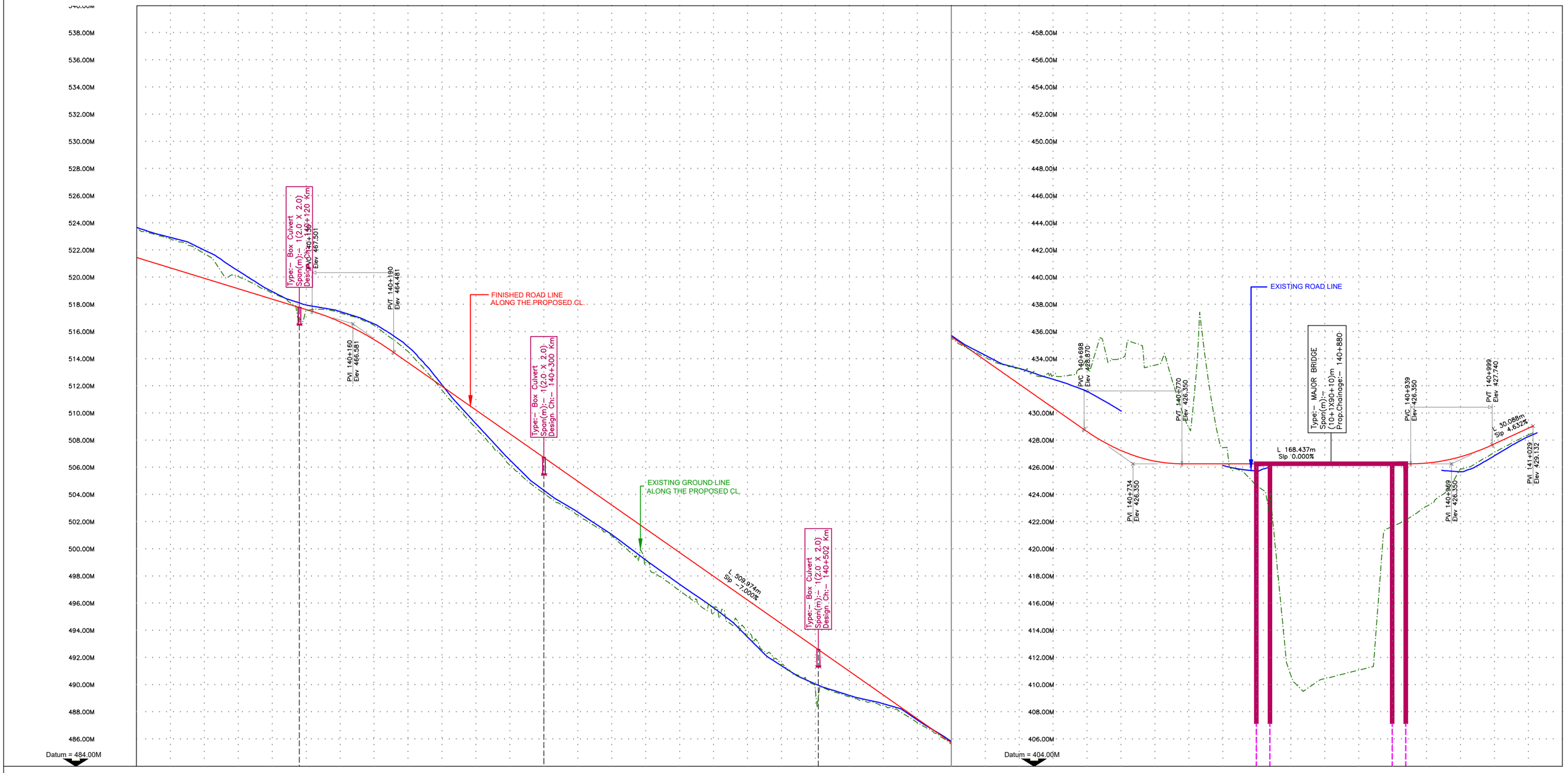
PACKAGE - IVB

CONSULTANT :
CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092.

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/PLAN

REVISION MKD. - R0 | SHEET NO. - 11

DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS


538.00M
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498.00M
496.00M
494.00M
492.00M
490.00M
488.00M
486.00M
Datum = 484.00M
Type:– Box Culvert
Span(m):– 1(2.0 X 2.0)
Design Ch:– 140+120 Km
Elev 467.501
PVI 140+160
Elev 466.581
PVI 140+190
Elev 464.481
FINISHED ROAD LINE
ALONG THE PROPOSED CL.
Type:– Box Culvert
Span(m):– 1(2.0 X 2.0)
Design Ch:– 140+300 Km
EXISTING GROUND LINE
ALONG THE PROPOSED CL.
L 509.974m
Slp –7.000%
Type:– Box Culvert
Span(m):– 1(2.0 X 2.0)
Design Ch:– 140+502 Km
458.00M
456.00M
454.00M
452.00M
450.00M
448.00M
446.00M
444.00M
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440.00M
438.00M
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424.00M
422.00M
420.00M
418.00M
416.00M
414.00M
412.00M
410.00M
408.00M
406.00M
Datum = 404.00M
EXISTING ROAD LINE
PVC 140+698
Elev 428.870
PVI 140+734
Elev 426.350
PVT 140+770
Elev 426.350
Type:– MAJOR BRIDGE
Span(m):–
(10+1X90+10)m
Prop.Chainage:– 140+880
L 168.437m
Slp 0.000%
PVC 140+939
Elev 426.350
PVI 140+969
Elev 426.350
PVT 140+999
Elev 427.740
30.088m
Slp 4.632%
PVI 141+029
Elev 429.132

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HORIZONTAL ALIGNMENT REPORT

HORIZONTAL ALIGNMENT REPORT

HIP/CURVE NO.	HIP		DEFLECTION ANGLE			ELEMENT	START			END			LENGTH (m)	CHORD LENGTH (m)	BEARING (dd mm ss)	RADIUS (m)	HAND OF ARC	SUPERELEVATION (%)	DESIGN SPEED	EXTRA WIDENING
	EASTING	NORTHING	DEG	MIN	SEC		CHAINAGE (m)	EASTING	NORTHING	CHAINAGE (m)	EASTING	NORTHING								
						Straight	129994.851	529858.131	2663149.171	130084.044	529847.841	2663060.574	89.193		S 6^37'28.25" W					
						Transition	130084.044	529847.841	2663060.574	130099.044	529845.371	2663045.794		15						
1136	529843.628	2663039.386	32	19	06.92" Righ	Arc	130099.044	529845.371	2663045.794	130112.247	529840.273	2663033.656		13.203		50	Right	5.6	20	1.2
						Transition	130112.247	529840.273	2663033.656	130127.247	529831.448	2663021.545		15						
						Straight	130127.247	529831.448	2663021.545	130164.387	529808.104	2662992.658	37.14		S 38^56'35.17" W					
						Transition	130164.387	529808.104	2662992.658	130179.387	529800.251	2662979.988		15						
1137	529796.842	2662969.149	102	10	26.59" Lef	Arc	130179.387	529800.251	2662979.988	130200.053	529804.407	2662960.672		20.665		20	Left	7	20	1.5
						Transition	130200.053	529804.407	2662960.672	130215.053	529816.777	2662952.353		15						
						Straight	130215.053	529816.777	2662952.353	130231.387	529831.36	2662944.996	16.334		S 63^13'51.42" E					
						Transition	130231.387	529831.36	2662944.996	130246.387	529844.451	2662937.693		15						
1138	529845.047	2662937.292	15	41	49.04" Righ	Arc	130246.387	529844.451	2662937.693	130247.825	529845.634	2662936.876		1.438		60	Right	6.7	30	1.2
						Transition	130247.825	529845.634	2662936.876	130262.825	529857.103	2662927.226		15						
						Straight	130262.825	529857.103	2662927.226	130279.367	529869.306	2662916.057	16.542		S 47^32'02.38" E					
						Transition	130279.367	529869.306	2662916.057	130294.367	529878.964	2662904.702		15						
1139	529884.653	2662893.06	108	50	54.04" Righ	Arc	130294.367	529878.964	2662904.702	130317.362	529876.354	2662883.109		22.995		20	Right	7	20	1.5
						Transition	130317.362	529876.354	2662883.109	130332.362	529864.27	2662874.381		15						
						Straight	130332.362	529864.27	2662874.381	130336.011	529861.069	2662872.63	3.649		S 61^18'51.67" W					
						Transition	130336.011	529861.069	2662872.63	130356.011	529842.837	2662864.545		20						
1140	529838.24	2662863.368	42	10	41.00" Righ	Arc	130356.011	529842.837	2662864.545	130365.457	529833.495	2662863.3		9.446		40	Right	6.9	20	1.5
						Transition	130365.457	529833.495	2662863.3	130385.457	529813.781	2662866.323		20						
						Straight	130385.457	529813.781	2662866.323	130444.114	529756.743	2662880.009	58.657		N 76^30'27.33" W					
						Transition	130444.114	529756.743	2662880.009	130464.114	529737.47	2662885.318		20						
1141	529713.503	2662893.675	39	56	35.61" Righ	Arc	130464.114	529737.47	2662885.318	130513.828	529696.423	2662912.45		49.714		100	Right	7	40	0.9
						Transition	130513.828	529696.423	2662912.45	130533.828	529683.985	2662928.101		20						
						Straight	130533.828	529683.985	2662928.101	130578.442	529657.408	2662963.934	44.613		N 36^33'51.72" W					
						Transition	130578.442	529657.408	2662963.934	130593.442	529647.528	2662975.165		15						
1142	529638.282	2662982.683	71	58	40.17" Lef	Arc	130593.442	529647.528	2662975.165	130616.129	529626.397	2662981.806		22.688		30	Left	5.9	20	1.5
						Transition	130616.129	529626.397	2662981.806	130631.129	529611.868	2662978.246		15						
						Straight	130631.129	529611.868	2662978.246	130717.254	529530.214	2662950.858	86.125		S 71^27'28.11" W					
						Transition	130717.254	529530.214	2662950.858	130737.254	529511.483	2662943.872		20						
1143	529449.281	2662915.824	80	4	23.79" Lef	Arc	130737.254	529511.483	2662943.872	130857.008	529452.716	2662847.677		119.754		100	Left	7	40	0.9
						Transition	130857.008	529452.716	2662847.677	130877.008	529455.051	2662827.823		20						
						Straight	130877.008	529455.051	2662827.823	130914.802	529460.712	2662790.456	37.793		S 8^36'55.68" E					
						Transition	130914.802	529460.712	2662790.456	130934.802	529464.364	2662770.801		20						
1144	529464.823	2662769.006	13	34	55.50" Lef	Arc	130934.802	529464.364	2662770.801	130938.507	529465.348	2662767.229		3.705		100	Left	7	40	0.9
						Transition	130938.507	529465.348	2662767.229	130958.507	529472.28	2662748.479		20						
						Straight	130958.507	529472.28	2662748.479	131071.17	529514.844	2662644.165	112.663		S 22^11'51.19" E					
						Transition	131071.17	529514.844	2662644.165	131086.17	529519.324	2662629.893		15						
1145	529523.144	2662602.271	114	27	49.11" Righ	Arc	131086.17	529519.324	2662629.893	131131.103	529495.873	2662596.446		44.933		30	Right	5.9	20	1.5
						Transition	131131.103	529495.873	2662596.446	131146.103	529480.929	2662595.791		15						
						Straight	131146.103	529480.929	2662595.791	131174.762	529452.293	2662596.925	28.659		N 87^44'02.08" W					
						Transition	131174.762	529452.293	2662596.925	131199.762	529427.489	2662599.638		25						
1146	529423.363	2662600.682	31	59	16.70" Righ	Arc	131199.762	529427.489	2662599.638	131208.26	529419.426	2662602.299		8.498		60	Right	7	30	1.2
						Transition	131208.26	529419.426	2662602.299	131233.26	529397.877	2662614.879		25						
						Straight	131233.26	529397.877	2662614.879	131258.411	529377.089	2662629.035	25.151		N 55^44'45.37" W					
						Transition	131258.411	529377.089	2662629.035	131278.411	529359.727	2662638.851		20						
1147	529335.529	2662647.625	94	10	12.81" Lef	Arc	131278.411	529359.727	2662638.851	131324.154	529317.517	2662629.237		45.743		40	Left	6.9	20	1.5
						Transition	131324.154	529317.517	2662629.237	131344.154	529306.118	2662612.871		20						
						Straight	131344.154	529306.118	2662612.871	131379.242	529288.53	2662582.509	35.088		S 30^05'01.82" W					
						Transition	131379.242	529288.53	2662582.509	131394.242	529281.563	2662569.237		15						
1148	529279.801	2662565.07	22	56	58.84" Lef	Arc	131394.242	529281.563	2662569.237	131403.275	529278.683	2662560.685		9.033		60	Left	6.7	30	1.2
						Transition	131403.275	529278.683	2662560.685	131418.275	529276.204	2662545.902		15						
						Straight	131418.275	529276.204	2662545.902	131452.227	529271.987	2662512.212	33.953		S 7^08'02.97" W					
						Transition	131452.227	529271.987	2662512.212	131467.227	529270.871	2662497.268		15						
1149	529270.933	2662494.847	22	44	12.09" Lef	Arc	131467.227	529270.871	2662497.268	131472.069	529271.229	2662492.442		4.842		50	Left	5.6	20	1.2
						Transition	131472.069	529271.229	2662492.442	131487.069	529274.533	2662477.826		15						
						Straight	131487.069	529274.533	2662477.826	131551.655	529291.904	2662415.62	64.586		S 15^36'09.11" E					
						Transition	131551.655	529291.904	2662415.62	131566.655	529294.094	2662400.875		15						
1150	529292.665	2662387.004	112	44	36.27" Righ	Arc	131566.655	529294.094	2662400.875	131591.01	529279.155	2662383.549		24.355		20	Right	7	20	1.5
						Transition	131591.01	529279.155	2662383.549	131606.01	529264.248	2662383.546		15						
						Straight	131606.01	529264.248	2662383.546	131685.747	529185.129	2662393.458	79.738		N 82^51'32.84" W					
						Transition	131685.747	529185.129	2662393.458	131700.747	529170.184	2662394.076		15						
1151	529146.469	2662391.087	105	44	23.41" Lef	Arc	131700.747	529170.184	2662394.076	131741.113	529144.084	2662367.304		40.365		30	Left	5.9	20	1.5
						Transition	131741.113	529144.084	2662367.304	131756.113	529145.083	2662352.379		15						
						Straight	131756.113	529145.083	2662352.379	131868.421	529161.875	2662241.333	112.309		S 8^35'56.26" E					
						Transition	131868.421	529161.875	2662241.333	131893.421	529163.539	2662216.458		25						
1152	529161.358	2662194.709	75	52	27.98" Righ	Arc	131893.421	529163.539	2662216.458	131934.634	529143.913	2662181.539		41.213		50	Right	7	30	1.2
						Transition	131934.634	529143.913	2662181.539	131959.634	529121.798	2662170.029		25						
						Straight	131959.634	529121.798	2662170.029	132106.025	528986.771	2662113.478	146.391		S 67^16'31.73" W					
						Transition	132106.025	528986.771	2662113.478	132121.025	528973.846	2662106.052		15						
1153	528963.614	2662096.099	114	0	21.53" Lef	Arc	132121.025	528973.846	2662106.052	132145.82	528969.702	2662083.187		24.796		20	Left	7	20	1.5
						Transition	132145.82	528969.702	2662083.187	132160.82	528979.199	2662071.698		15						
						Straight	132160.82	528979.199	2662071.698	132190.268	529000.641	2662051.513	29.447		S 46^43'49.80" E					
						Transition	132190.268	529000.641	2662051.513	132210.268	529013.976	2662036.682		20						

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: DECEMBER, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

HORIZONTAL ALIGNMENT REPORT

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

CONSULTANT : CE TESTING COMPA
124-A, N.S.C. B
Kolkata - 7

CETEST Engineering Consultants An ISO 9001, 14001 & OHSAS 18001 Certified Company

C.E. TESTING CO. PVT. LTD. KOLKATA 700 092 124A, N.S.C. BOSE ROAD

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/HAR

REVISION MKD. - R0 | SHEET NO. - 01

DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

HORIZONTAL ALIGNMENT REPORT

HIP/CURVE NO.	HIP		DEFLECTION ANGLE			ELEMENT	START			END			LENGTH (m)	CHORD LENGTH (m)	BEARING (dd mm ss)	RADIUS (m)	HAND OF ARC	SUPERELEVATION (%)	DESIGN SPEED	EXTRA WIDENING
	EASTING	NORTHING	DEG	MIN	SEC		CHAINAGE (m)	EASTING	NORTHING	CHAINAGE (m)	EASTING	NORTHING								
1153	528963.614	2662096.099	114	0	21.53" Lef	Arc	132121.025	528973.846	2662106.052	132145.82	528969.702	2662083.187		24.796		20	Left	7	20	1.5
						Transition	132145.82	528969.702	2662083.187	132160.82	528979.199	2662071.698		15						
						Straight	132160.82	528979.199	2662071.698	132190.268	529000.641	2662051.513	29.447		S 46^43'49.80" E					
						Transition	132190.268	529000.641	2662051.513	132210.268	529013.976	2662036.682		20						
1154	529017.077	2662031.797	45	6	31.10" Righ	Arc	132210.268	529013.976	2662036.682	132221.76	529018.666	2662026.234		11.492		40	Right	6.9	20	1.5
						Transition	132221.76	529018.666	2662026.234	132241.76	529020.887	2662006.414		20						
						Straight	132241.76	529020.887	2662006.414	132284.343	529022.092	2661963.848	42.583		S 1^37'18.70" E					
						Transition	132284.343	529022.092	2661963.848	132304.343	529020.996	2661943.933		20						
1155	529019.29	2661936.361	50	36	42.48" Righ	Arc	132304.343	529020.996	2661943.933	132319.676	529014.875	2661929.977		15.334		40	Right	6.9	20	1.5
						Transition	132319.676	529014.875	2661929.977	132339.676	529000.966	2661915.683		20						
						Straight	132339.676	529000.966	2661915.683	132371.853	528976.685	2661894.569	32.177		S 48^59'23.78" W					
						Transition	132371.853	528976.685	2661894.569	132386.853	528965.174	2661884.956		15						
1156	528958.494	2661879.817	14	35	23.72" Righ	Arc	132386.853	528965.174	2661884.956	132403.683	528951.185	2661875.621		16.83		125	Right	5.7	40	0.6
						Transition	132403.683	528951.185	2661875.621	132418.683	528937.89	2661868.681		15						
						Straight	132418.683	528937.89	2661868.681	132535.287	528833.464	2661816.798	116.604		S 63^34'47.50" W					
						Transition	132535.287	528833.464	2661816.798	132550.287	528819.774	2661810.693		15						
1157	528815.222	2661809.102	23	30	52.71" Righ	Arc	132550.287	528819.774	2661810.693	132559.911	528810.473	2661808.259		9.624		60	Right	6.7	30	1.2
						Transition	132559.911	528810.473	2661808.259	132574.911	528795.548	2661806.877		15						
						Straight	132574.911	528795.548	2661806.877	132599.22	528771.27	2661805.645	24.309		S 87^05'40.21" W					
						Transition	132599.22	528771.27	2661805.645	132624.22	528746.676	2661801.807		25						
1158	528728.464	2661794.885	87	44	53.80" Lef	Arc	132624.22	528746.676	2661801.807	132660.48	528722.687	2661776.279		36.26		40	Left	7	30	1.5
						Transition	132660.48	528722.687	2661776.279	132685.48	528720.383	2661751.494		25						
						Straight	132685.48	528720.383	2661751.494	132695.968	528720.503	2661741.007	10.488		S 0^39'13.59" E					
						Transition	132695.968	528720.503	2661741.007	132710.968	528720.05	2661726.024		15						
1159	528719.319	2661719.62	26	35	12.44" Righ	Arc	132710.968	528720.05	2661726.024	132723.809	528717.245	2661713.518		12.842		60	Right	6.7	30	1.2
						Transition	132723.809	528717.245	2661713.518	132738.809	528711.257	2661699.776		15						
						Straight	132738.809	528711.257	2661699.776	132841.853	528666.194	2661607.108	103.044		S 25^55'58.85" W					
						Transition	132841.853	528666.194	2661607.108	132861.853	528656.712	2661589.514		20						
1160	528653.907	2661585.21	21	40	21.58" Righ	Arc	132861.853	528656.712	2661589.514	132872.114	528650.575	2661581.3		10.261		80	Right	6.8	30	0.9
						Transition	132872.114	528650.575	2661581.3	132892.114	528636.388	2661567.222		20						
						Straight	132892.114	528636.388	2661567.222	133060.995	528511.666	2661453.358	168.881		S 47^36'20.43" W					
						Transition	133060.995	528511.666	2661453.358	133075.995	528500.423	2661443.432		15						
1161	528496.917	2661440.539	9	12	03.66" Righ	Arc	133075.995	528500.423	2661443.432	133085.083	528493.242	2661437.863		9.088		150	Right	4.7	40	0.6
						Transition	133085.083	528493.242	2661437.863	133100.083	528480.83	2661429.444		15						
						Straight	133100.083	528480.83	2661429.444	133172.895	528419.899	2661389.582	72.812		S 56^48'24.08" W					
						Transition	133172.895	528419.899	2661389.582	133192.895	528403.543	2661378.086		20						
1162	528350.869	2661335.548	79	39	34.00" Lef	Arc	133192.895	528403.543	2661378.086	133311.927	528370.803	2661270.844		119.032		100	Left	7	40	0.9
						Transition	133311.927	528370.803	2661270.844	133331.927	528377.949	2661252.174		20						
						Straight	133331.927	528377.949	2661252.174	133393.584	528401.895	2661195.356	61.658		S 22^51'09.92" E					
						Transition	133393.584	528401.895	2661195.356	133418.584	528409.632	2661171.656		25						
1163	528414.634	2661138.301	96	39	08.84" Righ	Arc	133418.584	528409.632	2661171.656	133477.929	528385.58	2661121.17		59.345		50	Right	7	30	1.2
						Transition	133477.929	528385.58	2661121.17	133502.929	528362.301	2661112.247		25						
						Straight	133502.929	528362.301	2661112.247	133674.265	528197.769	2661064.445	171.336		S 73^47'58.92" W					
						Transition	133674.265	528197.769	2661064.445	133699.265	528174.348	2661055.838		25						
1164	528134.958	2661034.773	97	12	25.42" Lef	Arc	133699.265	528174.348	2661055.838	133776.06	528143.841	2660990.997		76.795		60	Left	7	30	1.2
						Transition	133776.06	528143.841	2660990.997	133801.06	528152.142	2660967.466		25						
						Straight	133801.06	528152.142	2660967.466	133863.25	528176.847	2660910.395	62.189		S 23^24'26.50" E					
						Transition	133863.25	528176.847	2660910.395	133878.25	528183.37	2660896.899		15						
1165	528187.09	2660890.6	28	13	36.61" Lef	Arc	133878.25	528183.37	2660896.899	133892.809	528192.215	2660885.38		14.559		60	Left	6.7	30	1.2
						Transition	133892.809	528192.215	2660885.38	133907.809	528203.571	2660875.595		15						
						Straight	133907.809	528203.571	2660875.595	133968.685	528251.302	2660837.81	60.877		S 51^38'03.10" E					
						Transition	133968.685	528251.302	2660837.81	133983.685	528261.746	2660827.174		15						
1166	528272.281	2660809.036	135	41	58.70" Righ	Arc	133983.685	528261.746	2660827.174	134016.054	528253.662	2660799.376		32.368		20	Right	7	20	1.5
						Transition	134016.054	528253.662	2660799.376	134031.054	528239.143	2660796.001		15						
						Straight	134031.054	528239.143	2660796.001	134112.273	528158.359	2660787.603	81.219		S 84^03'55.60" W					
						Transition	134112.273	528158.359	2660787.603	134132.273	528138.555	2660784.875		20						
1167	528125.64	2660782.209	26	29	00.02" Lef	Arc	134132.273	528138.555	2660784.875	134158.495	528113.858	2660776.286		26.222		100	Left	7	40	0.9
						Transition	134158.495	528113.858	2660776.286	134178.495	528096.635	2660766.138		20						
						Straight	134178.495	528096.635	2660766.138	134249.447	528036.74	2660728.101	70.952		S 57^34'55.58" W					
						Transition	134249.447	528036.74	2660728.101	134274.447	528016.88	2660713.031		25						
1168	528013.142	2660709.059	41	5	59.37" Lef	Arc	134274.447	528016.88	2660713.031	134285.313	528010.348	2660704.374		10.866		50	Left	7	30	1.2
						Transition	134285.313	528010.348	2660704.374	134310.313	528001.311	2660681.139		25						
						Straight	134310.313	528001.311	2660681.139	134342.836	527992.083	2660649.952	32.523		S 16^28'56.21" W					
						Transition	134342.836	527992.083	2660649.952	134367.836	527983.045	2660626.717		25						
1169	527979.904	2660621.449	42	38	06.75" Righ	Arc	134367.836	527983.045	2660626.717	134380.043	527975.583	2660617.096		12.206		50	Right	7	30	1.2
						Transition	134380.043	527975.583	2660617.096	134405.043	527955.325	2660602.564		25						
						Straight	134405.043	527955.325	2660602.564	134415.791	527946.101	2660597.048	10.748		S 59^07'02.96" W					
						Transition	134415.791	527946.101	2660597.048	134440.791	527925.365	2660583.131		25						
1170	527905.648	2660566.683	53	29	40.28" Lef	Arc	134440.791	527925.365	2660583.131	134490.484	527899.186	2660541.832		49.692		80	Left	7	40	0.9
						Transition	134490.484	527899.186	2660541.832	134515.484	527895.449	2660517.141		25						
						Straight	134515.484	527895.449	2660517.141	134548.623	527892.202	2660484.161	33.139		S 5^37'22.68" W					
						Transition	134548.623	527892.202	2660484.161	134563.623	527890.113	2660469.317		15						
1171	527886.477	2660453.293	44	57	21.01" Righ	Arc	134563.623	527890.113	2660469.317	134595.701	527875.183	2660441.357		32.078		60	Right	6.7	30	1.2
						Transition	134595.701	527875.183	2660441.357	134610.701	527864.01	2660431.364		15						
						Straight	134610.701	527864.01	2660431.364	134622.477	527854.913	2660423.886	11.776		S 50^34'43.69" W					
						Transition	134622.477	527854.913	2660423.886	134637.477	527843.74	2660413.893		15						

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: DECEMBER, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

HORIZONTAL ALIGNMENT REPORT

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

CONSULTANT : CE TESTING COMPA
124-A, N.S.C. B
Kolkata - 7

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/HAR

REVISION MKD. - R0 | SHEET NO. - 02

DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

HORIZONTAL ALIGNMENT REPORT

HIP/CURVE NO.	HIP		DEFLECTION ANGLE			ELEMENT	START			END			LENGTH (m)	CHORD LENGTH (m)	BEARING (dd mm ss)	RADIUS (m)	HAND OF ARC	SUPERELEVATION (%)	DESIGN SPEED	EXTRA WIDENING
	EASTING	NORTHING	DEG	MIN	SEC		CHAINAGE (m)	EASTING	NORTHING	CHAINAGE (m)	EASTING	NORTHING								
1171	527886.477	2660453.293	44	57	21.01" Righ	Arc	134563.623	527890.113	2660469.317	134595.701	527875.183	2660441.357		32.078		60	Right	6.7	30	1.2
						Transition	134595.701	527875.183	2660441.357	134610.701	527864.01	2660431.364		15						
						Straight	134610.701	527864.01	2660431.364	134622.477	527854.913	2660423.886	11.776		S 50^34'43.69" W					
						Transition	134622.477	527854.913	2660423.886	134637.477	527843.74	2660413.893		15						
1172	527838.359	2660408.206	29	11	32.02" Lef	Arc	134637.477	527843.74	2660413.893	134653.047	527834.617	2660401.329		15.57		60	Left	6.7	30	1.2
						Transition	134653.047	527834.617	2660401.329	134668.047	527828.575	2660387.612		15						
						Straight	134668.047	527828.575	2660387.612	134683.757	527822.846	2660372.983	15.71		S 21^23'11.68" W					
						Transition	134683.757	527822.846	2660372.983	134698.757	527816.803	2660359.265		15						
1173	527801.64	2660331.396	70	3	47.09" Righ	Arc	134698.757	527816.803	2660359.265	134757.127	527770.07	2660328.238		58.37		60	Right	6.7	30	1.2
						Transition	134757.127	527770.07	2660328.238	134772.127	527755.083	2660327.992		15						
						Straight	134772.127	527755.083	2660327.992	134943.53	527583.735	2660332.329	171.403		N 88^33'01.24" W					
						Transition	134943.53	527583.735	2660332.329	134958.53	527568.902	2660330.847		15						
1174	527557.066	2660326.53	107	23	26.93" Lef	Arc	134958.53	527568.902	2660330.847	134981.016	527555.848	2660313.99		22.486		20	Left	7	20	1.5
						Transition	134981.016	527555.848	2660313.99	134996.016	527558.126	2660299.259		15						
						Straight	134996.016	527558.126	2660299.259	135068.734	527578.097	2660229.338	72.718		S 15^56'28.17" E					
						Transition	135068.734	527578.097	2660229.338	135088.734	527581.961	2660209.771		20						
1175	527582.383	2660194.831	69	37	22.28" Righ	Arc	135088.734	527581.961	2660209.771	135117.34	527572.905	2660183.275		28.606		40	Right	6.9	20	1.5
						Transition	135117.34	527572.905	2660183.275	135137.34	527557.873	2660170.167		20						
						Straight	135137.34	527557.873	2660170.167	135549.161	527226.053	2659926.257	411.821		S 53^40'54.12" W					
						Transition	135549.161	527226.053	2659926.257	135564.161	527213.55	2659917.997		15						
1176	527193.135	2659907.267	66	42	46.22" Righ	Arc	135564.161	527213.55	2659917.997	135607.379	527171.721	2659915.832		43.218		50	Right	5.6	20	1.2
						Transition	135607.379	527171.721	2659915.832	135622.379	527158.433	2659922.759		15						
						Straight	135622.379	527158.433	2659922.759	135647.036	527137.165	2659935.234	24.657		N 59^36'19.66" W					
						Transition	135647.036	527137.165	2659935.234	135662.036	527123.931	2659942.273		15						
1177	527081.824	2659960.348	89	3	45.98" Lef	Arc	135662.036	527123.931	2659942.273	135740.302	527053.302	2659924.484		78.266		60	Left	6.7	30	1.2
						Transition	135740.302	527053.302	2659924.484	135755.302	527044.981	2659912.016		15						
						Straight	135755.302	527044.981	2659912.016	135854.678	526993.307	2659827.132	99.376		S 31^19'54.36" W					
						Transition	135854.678	526993.307	2659827.132	135869.678	526986.618	2659813.752		15						
1178	526985.217	2659809.172	46	47	30.26" Lef	Arc	135869.678	526986.618	2659813.752	135879.178	526985.312	2659804.382		9.5		30	Left	5.9	20	1.5
						Transition	135879.178	526985.312	2659804.382	135894.178	526988.086	2659789.683		15						
						Straight	135894.178	526988.086	2659789.683	135895.534	526988.448	2659788.377	1.356		S 15^27'35.90" E					
						Transition	135895.534	526988.448	2659788.377	135910.534	526991.222	2659773.678		15						
1179	526991.373	2659766.032	57	15	04.87" Righ	Arc	135910.534	526991.222	2659773.678	135925.511	526987.846	2659759.246		14.977		30	Right	5.9	20	1.5
						Transition	135925.511	526987.846	2659759.246	135940.511	526978.84	2659747.303		15						
						Straight	135940.511	526978.84	2659747.303	135982.861	526950.617	2659715.728	42.35		S 41^47'28.97" W					
						Transition	135982.861	526950.617	2659715.728	135997.861	526941.611	2659703.784		15						
1180	526934.827	2659690.734	80	52	53.81" Lef	Arc	135997.861	526941.611	2659703.784	136025.21	526940.988	2659677.379		27.35		30	Left	5.9	20	1.5
						Transition	136025.21	526940.988	2659677.379	136040.21	526949.421	2659665.025		15						
						Straight	136040.21	526949.421	2659665.025	136056.381	526959.618	2659652.474	16.171		S 39^05'24.84" E					
						Transition	136056.381	526959.618	2659652.474	136071.381	526968.051	2659640.119		15						
1181	526978.827	2659616.762	109	52	09.91" Righ	Arc	136071.381	526968.051	2659640.119	136113.908	526957.388	2659602.548		42.527		30	Right	5.9	20	1.5
						Transition	136113.908	526957.388	2659602.548	136128.908	526943.722	2659596.466		15						
						Straight	136128.908	526943.722	2659596.466	136280.942	526800.163	2659546.415	152.034		S 70^46'45.07" W					
						Transition	136280.942	526800.163	2659546.415	136305.942	526777.638	2659535.823		25						
1182	526745.157	2659511.235	126	51	24.23" Lef	Arc	136305.942	526777.638	2659535.823	136369.505	526770.334	2659479.209		63.563		40	Left	7	30	1.5
						Transition	136369.505	526770.334	2659479.209	136394.505	526789.434	2659463.247		25						
						Straight	136394.505	526789.434	2659463.247	136457.036	526841.323	2659428.35	62.531		S 56^04'39.15" E					
						Transition	136457.036	526841.323	2659428.35	136482.036	526860.423	2659412.388		25						
1183	526865.954	2659405.351	61	2	10.65" Righ	Arc	136482.036	526860.423	2659412.388	136499.648	526867.96	2659396.628		17.611		40	Right	7	30	1.5
						Transition	136499.648	526867.96	2659396.628	136524.648	526868.396	2659371.74		25						
						Straight	136524.648	526868.396	2659371.74	136544.945	526866.642	2659351.519	20.297		S 4^57'31.50" W					
						Transition	136544.945	526866.642	2659351.519	136569.945	526862.766	2659326.87		25						
1184	526861.647	2659323.187	31	12	54.28" Righ	Arc	136569.945	526862.766	2659326.87	136577.633	526860.067	2659319.677		7.688		60	Right	7	30	1.2
						Transition	136577.633	526860.067	2659319.677	136602.633	526846.772	2659298.562		25						
						Straight	136602.633	526846.772	2659298.562	136667.268	526808.622	2659246.387	64.635		S 36^10'25.77" W					
						Transition	136667.268	526808.622	2659246.387	136692.268	526792.284	2659227.556		25						
1185	526781.516	2659218.679	59	50	09.40" Righ	Arc	136692.268	526792.284	2659227.556	136719.485	526767.708	2659216.661		27.217		50	Right	7	30	1.2
						Transition	136719.485	526767.708	2659216.661	136744.485	526742.784	2659217.2		25						
						Straight	136744.485	526742.784	2659217.2	136801.192	526686.388	2659223.137	56.708		N 83^59'24.82" W					
						Transition	136801.192	526686.388	2659223.137	136836.192	526651.521	2659223.407		35						
1186	526618.054	2659217.082	92	35	07.08" Lef	Arc	136836.192	526651.521	2659223.407	136898.147	526606.33	2659185.105		61.955		60	Left	7	40	1.2
						Transition	136898.147	526606.33	2659185.105	136933.147	526600.881	2659150.666		35						
						Straight	136933.147	526600.881	2659150.666	137005.405	526596.565	2659078.537	72.258		S 3^25'28.10" W					
						Transition	137005.405	526596.565	2659078.537	137020.405	526595.419	2659063.582		15						
1187	526595.28	2659062.318	6	42	03.67" Righ	Arc	137020.405	526595.419	2659063.582	137022.948	526595.119	2659061.057		2.543		150	Right	4.7	40	0.6
						Transition	137022.948	526595.119	2659061.057	137037.948	526592.729	2659046.25		15						
						Straight	137037.948	526592.729	2659046.25	137120.121	526578.283	2658965.357	82.173		S 10^07'31.77" W					
						Transition	137120.121	526578.283	2658965.357	137135.121	526575.892	2658950.551		15						
1188	526574.151	2658936.885	16	13	26.36" Lef	Arc	137135.121	526575.892	2658950.551	137162.595	526574.928	2658923.132		27.474		150	Left	4.7	40	0.6
						Transition	137162.595	526574.928	2658923.132	137177.595	526576.273	2658908.194		15						
						Straight	137177.595	526576.273	2658908.194	137241.956	526583.11	2658844.198	64.36		S 6^05'54.59" E					
						Transition	137241.956	526583.11	2658844.198	137266.956	526581.631	2658819.519		25						
1189	526570.843	2658793.538	154	2	24.22" Righ	Arc	137266.956	526581.631	2658819.519	137309.168	526546.31	2658807.302		42.213		25	Right	7	20	1.5
						Transition	137309.168	526546.31	2658807.302	137334.168	526529.9	2658825.794		25						
						Straight	137334.168	526529.9	2658825.794	137427.516	526480.352	2658904.907	93.348		N 32^03'30.37" W					
						Transition	137427.516	526480.352	2658904.907	137452.516	526465.408	2658924.862		25						

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: DECEMBER, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

HORIZONTAL ALIGNMENT REPORT

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

CONSULTANT : CE TESTING COMPA
124-A, N.S.C. B
Kolkata - 7

CETEST Engineering Consultants An ISO 9001, 14001 & OHSAS 18001 Certified Company

C.E. TESTING CO. PVT. LTD. KOLKATA 700 092 124A, N.S.C. BOSE ROAD

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/HAR

REVISION MKD. - R0 | SHEET NO. - 03

DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

HORIZONTAL ALIGNMENT REPORT

HIP/CURVE NO.	HIP		DEFLECTION ANGLE			ELEMENT	START			END			LENGTH (m)	CHORD LENGTH (m)	BEARING (dd mm ss)	RADIUS (m)	HAND OF ARC	SUPERELEVATION (%)	DESIGN SPEED	EXTRA WIDENING
	EASTING	NORTHING	DEG	MIN	SEC		CHAINAGE (m)	EASTING	NORTHING	CHAINAGE (m)	EASTING	NORTHING								
1189	526570.843	2658793.538	154	2	24.22" Righ	Arc	137266.956	526581.631	2658819.519	137309.168	526546.31	2658807.302		42.213		25	Right	7	20	1.5
						Transition	137309.168	526546.31	2658807.302	137334.168	526529.9	2658825.794		25						
						Straight	137334.168	526529.9	2658825.794	137427.516	526480.352	2658904.907	93.348		N 32^03'30.37" W					
						Transition	137427.516	526480.352	2658904.907	137452.516	526465.408	2658924.862		25						
1190	526456.783	2658933.08	55	27	04.40" Lef	Arc	137452.516	526465.408	2658924.862	137475.907	526445.379	2658936.526		23.39		50	Left	7	30	1.2
						Transition	137475.907	526445.379	2658936.526	137500.907	526420.648	2658939.678		25						
						Straight	137500.907	526420.648	2658939.678	137629.25	526292.426	2658945.254	128.343		N 87^30'34.76" W					
						Transition	137629.25	526292.426	2658945.254	137644.25	526277.569	2658944.043		15						
1191	526262.121	2658938.725	121	27	48.58" Lef	Arc	137644.25	526277.569	2658944.043	137671.649	526264.25	2658922.526		27.399		20	Left	7	20	1.5
						Transition	137671.649	526264.25	2658922.526	137686.649	526269.79	2658908.687		15						
						Straight	137686.649	526269.79	2658908.687	137699.937	526276.227	2658897.061	13.289		S 28^58'23.35" E					
						Transition	137699.937	526276.227	2658897.061	137714.937	526282.359	2658883.418		15						
1192	526287.427	2658864.032	96	7	33.78" Righ	Arc	137714.937	526282.359	2658883.418	137750.269	526271.46	2658851.926		35.331		30	Right	5.9	20	1.5
						Transition	137750.269	526271.46	2658851.926	137765.269	526258.207	2658844.991		15						
						Straight	137765.269	526258.207	2658844.991	137808.52	526218.348	2658828.198	43.252		S 67^09'10.43" W					
						Transition	137808.52	526218.348	2658828.198	137823.52	526205.094	2658821.263		15						
1193	526187.333	2658807.795	101	52	22.48" Lef	Arc	137823.52	526205.094	2658821.263	137861.861	526195.101	2658786.903		38.341		30	Left	5.9	20	1.5
						Transition	137861.861	526195.101	2658786.903	137876.861	526202.569	2658773.942		15						
						Straight	137876.861	526202.569	2658773.942	137932.482	526234.248	2658728.224	55.621		S 34^43'12.05" E					
						Transition	137932.482	526234.248	2658728.224	137947.482	526241.716	2658715.263		15						
1194	526254.17	2658681.769	128	37	11.62" Righ	Arc	137947.482	526241.716	2658715.263	137999.827	526219.024	2658675.303		52.345		30	Right	5.9	20	1.5
						Transition	137999.827	526219.024	2658675.303	138014.827	526204.068	2658675.075		15						
						Straight	138014.827	526204.068	2658675.075	138112.062	526107.058	2658681.689	97.235		N 86^06'00.43" W					
						Transition	138112.062	526107.058	2658681.689	138137.062	526082.13	2658681.309		25						
1195	526058.03	2658676.875	80	51	56.35" Lef	Arc	138137.062	526082.13	2658681.309	138182.63	526046.769	2658655.112		45.569		50	Left	7	30	1.2
						Transition	138182.63	526046.769	2658655.112	138207.63	526039.146	2658631.376		25						
						Straight	138207.63	526039.146	2658631.376	138225.667	526035.078	2658613.804	18.036		S 13^02'03.22" W					
						Transition	138225.667	526035.078	2658613.804	138250.667	526028.187	2658589.801		25						
1196	526026.691	2658586.096	23	37	22.29" Righ	Arc	138250.667	526028.187	2658589.801	138258.651	526024.834	2658582.559		7.984		80	Right	7	40	0.9
						Transition	138258.651	526024.834	2658582.559	138283.651	526010.987	2658561.776		25						
						Straight	138283.651	526010.987	2658561.776	138369.96	525959.459	2658492.537	86.309		S 36^39'25.51" W					
						Transition	138369.96	525959.459	2658492.537	138384.96	525951.557	2658479.836		15						
1197	525939.822	2658451.268	120	18	41.69" Lef	Arc	138384.96	525951.557	2658479.836	138432.955	525968.718	2658440.367		47.995		30	Left	5.9	20	1.5
						Transition	138432.955	525968.718	2658440.367	138447.955	525983.395	2658437.483		15						
						Straight	138447.955	525983.395	2658437.483	138468.524	526003.839	2658435.209	20.57		S 83^39'16.18" E					
						Transition	138468.524	526003.839	2658435.209	138483.524	526018.334	2658431.73		15						
1198	526025.548	2658427.921	87	21	02.37" Righ	Arc	138483.524	526018.334	2658431.73	138499.015	526028.04	2658420.154		15.491		20	Right	7	20	1.5
						Transition	138499.015	526028.04	2658420.154	138514.015	526028.939	2658405.274		15						
						Straight	138514.015	526028.939	2658405.274	138540.441	526027.235	2658378.904	26.425		S 3^41'46.19" W					
						Transition	138540.441	526027.235	2658378.904	138555.441	526028.134	2658364.025		15						
1199	526030.245	2658357.446	81	5	18.32" Lef	Arc	138555.441	526028.134	2658364.025	138568.746	526035.967	2658353.573		13.305		20	Left	7	20	1.5
						Transition	138568.746	526035.967	2658353.573	138583.746	526049.996	2658348.533		15						
						Straight	138583.746	526049.996	2658348.533	138602.339	526068.14	2658344.475	18.593		S 77^23'32.14" E					
						Transition	138602.339	526068.14	2658344.475	138617.339	526082.169	2658339.435		15						
1200	526097.11	2658329.321	127	4	49.76" Righ	Arc	138617.339	526082.169	2658339.435	138646.698	526088.584	2658313.421		29.359		20	Right	7	20	1.5
						Transition	138646.698	526088.584	2658313.421	138661.698	526078.506	2658302.436		15						
						Straight	138661.698	526078.506	2658302.436	138711.199	526040.76	2658270.412	49.501		S 49^41'17.63" W					
						Transition	138711.199	526040.76	2658270.412	138736.199	526020.474	2658255.921		25						
1201	526018.331	2658254.876	34	6	28.53" Righ	Arc	138736.199	526020.474	2658255.921	138740.964	526016.098	2658254.04		4.765		50	Right	7	30	1.2
						Transition	138740.964	526016.098	2658254.04	138765.964	525991.623	2658249.293		25						
						Straight	138765.964	525991.623	2658249.293	138785.973	525971.731	2658247.131	20.009		S 83^47'46.16" W					
						Transition	138785.973	525971.731	2658247.131	138810.973	525946.808	2658246.508		25						
1202	525942.141	2658247.174	39	25	18.42" Righ	Arc	138810.973	525946.808	2658246.508	138820.375	525937.68	2658248.701		9.402		50	Right	7	30	1.2
						Transition	138820.375	525937.68	2658248.701	138845.375	525915.759	2658260.576		25						
						Straight	138845.375	525915.759	2658260.576	138867.877	525896.934	2658272.903	22.502		N 56^46'55.42" W					
						Transition	138867.877	525896.934	2658272.903	138882.877	525883.544	2658279.452		15						
1203	525870.286	2658282.206	111	10	19.93" Lef	Arc	138882.877	525883.544	2658279.452	138906.684	525862.806	2658270.918		23.806		20	Left	7	20	1.5
						Transition	138906.684	525862.806	2658270.918	138921.684	525857.904	2658256.841		15						
						Straight	138921.684	525857.904	2658256.841	138993.479	525842.921	2658186.626	71.795		S 12^02'44.65" W					
						Transition	138993.479	525842.921	2658186.626	139018.479	525835.707	2658162.762		25						
1204	525834.247	2658159.817	36	10	13.58" Righ	Arc	139018.479	525835.707	2658162.762	139025.043	525832.414	2658157.089		6.565		50	Right	7	30	1.2
						Transition	139025.043	525832.414	2658157.089	139050.043	525815.271	2658138.988		25						
						Straight	139050.043	525815.271	2658138.988	139132.371	525753.882	2658084.131	82.327		S 48^12'58.23" W					
						Transition	139132.371	525753.882	2658084.131	139157.371	525736.739	2658066.03		25						
1205	525730.915	2658057.36	52	14	45.39" Lef	Arc	139157.371	525736.739	2658066.03	139177.964	525729.048	2658047.084		20.593		50	Left	7	30	1.2
						Transition	139177.964	525729.048	2658047.084	139202.964	525728.725	2658022.155		25						
						Straight	139202.964	525728.725	2658022.155	139279.651	525734.114	2657945.658	76.687		S 4^01'47.17" E					
						Transition	139279.651	525734.114	2657945.658	139299.651	525736.183	2657925.774		20						
1206	525737.692	2657916.999	21	38	06.81" Lef	Arc	139299.651	525736.183	2657925.774	139317.412	525740.728	2657908.629		17.761		100	Left	7	40	0.9
						Transition	139317.412	525740.728	2657908.629	139337.412	525748.781	2657890.332		20						
						Straight	139337.412	525748.781	2657890.332	139375.198	525765.147	2657856.273	37.786		S 25^39'53.98" E					
						Transition	139375.198	525765.147	2657856.273	139390.198	525770.481	2657842.299		15						
1207	525771.865	2657835.398	55	3	15.41" Righ	Arc	139390.198	525770.481	2657842.299	139404.024	525770.036	2657828.602		13.826		30	Right	5.9	20	1.5
						Transition	139404.024	525770.036	2657828.602	139419.024	525763.805	2657815.003		15						
						Straight	139419.024	525763.805	2657815.003	139429.729	525758.552	2657805.676	10.705		S 29^23'21.43" W					
						Transition	139429.729	525758.552	2657805.676	139444.729	525751.605	2657792.388		15						

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: DECEMBER, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

HORIZONTAL ALIGNMENT REPORT

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

CONSULTANT : CE TESTING COMPA
124-A, N.S.C. B
Kolkata - 7

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/HAR

REVISION MKD. - R0 | SHEET NO. - 04

DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

HORIZONTAL ALIGNMENT REPORT

HIP/CURVE NO.	HIP		DEFLECTION ANGLE			ELEMENT	START			END			LENGTH (m)	CHORD LENGTH (m)	BEARING (dd mm ss)	RADIUS (m)	HAND OF ARC	SUPERELEVATION (%)	DESIGN SPEED	EXTRA WIDENING
	EASTING	NORTHING	DEG	MIN	SEC		CHAINAGE (m)	EASTING	NORTHING	CHAINAGE (m)	EASTING	NORTHING								
1207	525771.865	2657835.398	55	3	15.41" Righ	Arc	139390.198	525770.481	2657842.299	139404.024	525770.036	2657828.602		13.826		30	Right	5.9	20	1.5
						Transition	139404.024	525770.036	2657828.602	139419.024	525763.805	2657815.003		15						
						Straight	139419.024	525763.805	2657815.003	139429.729	525758.552	2657805.676	10.705		S 29^23'21.43" W					
						Transition	139429.729	525758.552	2657805.676	139444.729	525751.605	2657792.388		15						
1208	525750.658	2657790.263	14	4	27.35" Lef	Arc	139444.729	525751.605	2657792.388	139449.38	525749.836	2657788.086		4.651		80	Left	5	30	0.9
						Transition	139449.38	525749.836	2657788.086	139464.38	525745.426	2657773.756		15						
						Straight	139464.38	525745.426	2657773.756	139510.27	525733.306	2657729.495	45.89		S 15^18'54.08" W					
						Transition	139510.27	525733.306	2657729.495	139550.27	525727.994	2657690.136		40						
1209	525730.472	2657671.568	86	54	46.35" Lef	Arc	139550.27	525727.994	2657690.136	139586.116	525744.541	2657659.2		35.846		50	Left	7	40	1.2
						Transition	139586.116	525744.541	2657659.2	139626.116	525780.228	2657641.77		40						
						Straight	139626.116	525780.228	2657641.77	139793.983	525939.511	2657588.777	167.867		S 71^35'52.27" E					
						Transition	139793.983	525939.511	2657588.777	139808.983	525953.476	2657583.342		15						
1210	525959.161	2657580.445	31	43	59.94" Righ	Arc	139808.983	525953.476	2657583.342	139821.676	525963.937	2657576.214		12.693		50	Right	5.6	20	1.2
						Transition	139821.676	525963.937	2657576.214	139836.676	525974.105	2657565.206		15						
						Straight	139836.676	525974.105	2657565.206	139874.615	525998.423	2657536.086	37.939		S 39^51'52.33" E					
						Transition	139874.615	525998.423	2657536.086	139899.615	526016.276	2657518.741		25						
1211	526017.464	2657517.992	39	49	44.11" Lef	Arc	139899.615	526016.276	2657518.741	139902.421	526018.7	2657517.329		2.806		40	Left	7	30	1.5
						Transition	139902.421	526018.7	2657517.329	139927.421	526042.595	2657510.355		25						
						Straight	139927.421	526042.595	2657510.355	139942.168	526057.104	2657507.717	14.747		S 79^41'36.45" E					
						Transition	139942.168	526057.104	2657507.717	139972.168	526085.012	2657497.65		30						
1212	526090.935	2657492.861	85	47	06.29" Righ	Arc	139972.168	526085.012	2657497.65	139987.085	526093.856	2657485.828		14.917		30	Right	7	30	1.5
						Transition	139987.085	526093.856	2657485.828	140017.085	526095.635	2657456.213		30						
						Straight	140017.085	526095.635	2657456.213	140125.193	526084.163	2657348.716	108.108		S 6^05'29.84" W					
						Transition	140125.193	526084.163	2657348.716	140140.193	526081.343	2657334.026		15						
1213	526080.141	2657330.796	41	45	06.05" Righ	Arc	140140.193	526081.343	2657334.026	140147.054	526078.239	2657327.924		6.861		30	Right	5.9	20	1.5
						Transition	140147.054	526078.239	2657327.924	140162.054	526068.024	2657316.997		15						
						Straight	140162.054	526068.024	2657316.997	140180.265	526054.524	2657304.774	18.211		S 47^50'35.89" W					
						Transition	140180.265	526054.524	2657304.774	140195.265	526044.309	2657293.847		15						
1214	526041.751	2657289.986	46	11	59.76" Lef	Arc	140195.265	526044.309	2657293.847	140204.455	526040.477	2657285.533		9.19		30	Left	5.9	20	1.5
						Transition	140204.455	526040.477	2657285.533	140219.455	526038.806	2657270.668		15						
						Straight	140219.455	526038.806	2657270.668	140238.54	526038.258	2657251.591	19.085		S 1^38'36.13" W					
						Transition	140238.54	526038.258	2657251.591	140263.54	526035.473	2657226.817		25						
1215	526034.762	2657224.333	34	33	48.51" Righ	Arc	140263.54	526035.473	2657226.817	140268.703	526033.799	2657221.935		5.162		50	Right	7	30	1.2
						Transition	140268.703	526033.799	2657221.935	140293.703	526020.797	2657200.664		25						
						Straight	140293.703	526020.797	2657200.664	140346.548	525989.581	2657158.023	52.846		S 36^12'24.64" W					
						Transition	140346.548	525989.581	2657158.023	140371.548	525975.898	2657137.132		25						
1216	525975.346	2657136.06	19	37	58.96" Lef	Arc	140371.548	525975.898	2657137.132	140373.961	525974.826	2657134.971		2.413		80	Left	7	40	0.9
						Transition	140373.961	525974.826	2657134.971	140398.961	525966.466	2657111.439		25						
						Straight	140398.961	525966.466	2657111.439	140563.023	525919.667	2656954.193	164.062		S 16^34'25.68" W					
1217	525914.773	2656937.746	11	31	40.34" Righ	Arc	140563.023	525919.667	2656954.193	140597.227	525906.69	2656922.609		34.204		170	Right	Normal Camber	30	0.6
						Straight	140597.227	525906.69	2656922.609	140615.735	525897.972	2656906.283	18.508		S 28^06'06.01" W					
1218	525892.902	2656896.789	7	14	42.88" Lef	Arc	140615.735	525897.972	2656906.283	140637.232	525889.07	2656886.731		21.497		170	Left	Normal Camber	30	0.6
						Straight	140637.232	525889.07	2656886.731	140756.147	525846.733	2656775.608	118.915		S 20^51'23.13" W					
						Transition	140756.147	525846.733	2656775.608	140771.147	525840.263	2656762.122		15						
1219	525827.608	2656744.169	101	4	06.24" Righ	Arc	140771.147	525840.263	2656762.122	140809.066	525806.671	2656750.811		37.919		30	Right	5.9	20	1.5
						Transition	140809.066	525806.671	2656750.811	140824.066	525793.361	2656757.637		15						
						Straight	140824.066	525793.361	2656757.637	140928.786	525704.481	2656813.014	104.72		N 58^04'30.63" W					
						Transition	140928.786	525704.481	2656813.014	140943.786	525691.383	2656820.292		15						
1220	525662.971	2656832.546	80	41	24.36" Lef	Arc	140943.786	525691.383	2656820.292	140999.201	525639.328	2656812.587		55.415		50	Left	5.6	20	1.2
						Transition	140999.201	525639.328	2656812.587	141014.201	525628.899	2656801.825		15						
						Straight	141014.201	525628.899	2656801.825	141028.728	525619.325	2656790.901	14.526		S 41^14'05.01" W					

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: DECEMBER, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

HORIZONTAL ALIGNMENT REPORT

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

CONSULTANT : CE TESTING COMPA
124-A, N.S.C. B
Kolkata - 7

C.E. TESTING CO. PVT. LTD. KOLKATA 700 092 124A, N.S.C. BOSE ROAD

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/HAR

REVISION MKD. - R0 | SHEET NO. - 05

DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

VERTICAL ALIGNMENT REPORT

VERTICAL ALIGNMENT REPORT

CURVE NO.	IP		TYPE OF CURVE	CURVE LENGTH	M VALUE	START		END		GRADIENT	
	CHAINAGE	LEVEL				CHAINAGE	LEVEL	CHAINAGE	LEVEL	IN	OUT
435	130068.025	768.649	Sag	60	0.042	130038.025	770.749	130098.025	766.717	-7	-6.441
436	131080.581	703.432	Sag	60	0.851	131050.581	705.365	131110.581	704.905	-6.441	4.91
437	131337.547	716.049	Hog	60	-0.246	131307.547	714.576	131367.547	716.539	4.91	1.634
438	131670.491	721.49	Hog	60	-0.033	131640.491	720.999	131700.491	721.849	1.634	1.199
439	131940.744	724.729	Hog	70	-0.717	131905.744	724.31	131975.744	722.279	1.199	-7
440	132209.346	705.927	Sag	60	0.537	132179.346	708.027	132239.346	705.975	-7	0.159
441	132659.703	706.644	Sag	60	0.345	132629.703	706.597	132689.703	708.074	0.159	4.765
442	133052.274	725.352	Hog	60	-0.069	133022.274	723.923	133082.274	726.504	4.765	3.84
443	133450.666	740.651	Hog	60	-0.458	133420.666	739.498	133480.666	739.972	3.84	-2.263
444	133811.327	732.49	Sag	60	0.611	133781.327	733.169	133841.327	734.253	-2.263	5.878
445	134024.358	745.011	Hog	60	-0.235	133994.358	743.248	134054.358	745.834	5.878	2.743
446	134166.201	748.901	Sag	60	0.319	134136.201	748.079	134196.201	750.999	2.743	6.992
447	134382.04	763.994	Hog	72	-0.755	134346.04	761.476	134418.04	763.49	6.992	-1.399
448	134771.92	758.54	Hog	60	-0.42	134741.92	758.96	134801.92	756.442	-1.399	-6.995
449	134918.953	748.255	Sag	60	0.54	134888.953	750.353	134948.953	748.314	-6.995	0.199
450	135085.682	748.586	Hog	60	-0.285	135055.682	748.526	135115.682	747.504	0.199	-3.607
451	135266.852	742.052	Hog	60	-0.089	135236.852	743.134	135296.852	740.614	-3.607	-4.792
452	135419.819	734.721	Hog	60	-0.165	135389.819	736.159	135449.819	732.622	-4.792	-6.998
453	135524.036	727.428	Sag	60	0.261	135494.036	729.528	135554.036	726.373	-6.998	-3.518
454	135862.117	715.536	Hog	60	-0.261	135832.117	716.591	135892.117	713.436	-3.518	-6.999
455	135938.981	710.156	Sag	60	0.175	135908.981	712.256	135968.981	708.759	-6.999	-4.659
456	136091.505	703.05	Sag	60	0.259	136061.505	704.448	136121.505	702.69	-4.659	-1.202
457	136237.127	701.3	Hog	60	-0.366	136207.127	701.661	136267.127	699.475	-1.202	-6.084
458	137279.299	637.896	Sag	60	0.306	137249.299	639.721	137309.299	637.296	-6.084	-2
459	137438.454	634.712	Hog	60	-0.375	137408.454	635.312	137468.454	632.612	-2	-7
460	138571.27	555.416	Sag	60	0.186	138541.27	557.516	138601.27	554.06	-7	-4.52
461	138890.49	540.987	Hog	60	-0.186	138860.49	542.343	138920.49	538.888	-4.52	-6.997
462	139793.515	477.804	Sag	60	0.295	139763.515	479.903	139823.515	476.884	-6.997	-3.066
463	140159.506	466.581	Hog	60	-0.295	140129.506	467.501	140189.506	464.481	-3.066	-7
464	140734.235	426.35	Sag	72	0.63	140698.235	428.87	140770.235	426.35	-7	0
465	140968.672	426.35	Sag	60	0.347	140938.672	426.35	140998.672	427.74	0	4.632

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: DECEMBER, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

VERTICAL ALIGNMENT REPORT

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

CONSULTANT :
CETEST Engineering Consultants
An ISO 9001, 14001 & OHSAS 18001 Certified Company
CE TESTING COMPA
124-A, N.S.C. B
Kolkata - 7
C.E. TESTING CO. PVT. LTD. KOLKATA 700 092 124A, N.S.C. BOSE ROAD

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/VAR

REVISION MKD. - R0 | SHEET NO. - 01

DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

CURVE DETAIL REPORT

CURVE DETAILS REPORT

HIP NO.	CHAINAGE			HIP COORDINATES		RADIUS	DEFLECTION	Ls (M)	Lc (M)	e (%)	HAND OF ARC	DESIGN SPEED
	PC/SC	HIP/PI	PT/CS	NORTHING	EASTING							
1136	130+099.044	130+106.080	130+112.247	2663038.684	529845.299	50	32^19'06.92" Right	15	13.203	5.6	Right	20
1137	130+179.387	130+197.205	130+200.053	2662967.134	529787.476	20	102^10'26.59" Left	15	20.665	7	Left	20
1138	130+246.387	130+247.175	130+247.825	2662937.885	529845.456	60	15^41'49.04" Right	15	1.438	6.7	Right	30
1139	130+294.367	130+315.445	130+317.362	2662891.699	529895.92	20	108^50'54.04" Right	15	22.995	7	Right	20
1140	130+356.011	130+361.577	130+365.457	2662860.358	529838.641	40	42^10'41.00" Right	20	9.446	6.9	Right	20
1141	130+464.114	130+490.512	130+513.828	2662890.834	529711.626	100	39^56'35.61" Right	20	49.714	7	Right	40
1142	130+593.442	130+607.940	130+616.129	2662987.626	529639.835	30	71^58'40.17" Left	15	22.688	5.9	Left	20
1143	130+737.254	130+811.410	130+857.008	2662920.916	529440.946	100	80^04'23.79" Left	20	119.754	7	Left	40
1144	130+934.802	130+936.726	130+938.507	2662768.779	529463.997	100	13^34'55.50" Left	20	3.705	7	Left	40
1145	131+086.170	131+125.746	131+131.103	2662593.633	529535.463	30	114^27'49.11" Right	15	44.933	5.9	Right	20
1146	131+199.762	131+204.566	131+208.260	2662598.103	529422.512	60	31^59'16.70" Right	25	8.498	7	Right	30
1147	131+278.411	131+311.860	131+324.154	2662659.12	529332.911	40	94^10'12.81" Left	20	45.743	6.9	Left	20
1148	131+394.242	131+398.949	131+403.275	2662565.457	529278.651	60	22^56'58.84" Left	15	9.033	6.7	Left	30
1149	131+467.227	131+469.812	131+472.069	2662494.763	529269.803	50	22^44'12.09" Left	15	4.842	5.6	Left	20
1150	131+566.655	131+589.891	131+591.010	2662378.793	529302.188	20	112^44'36.27" Right	15	24.355	7	Right	20
1151	131+700.747	131+733.267	131+741.113	2662399.365	529137.978	30	105^44'23.41" Left	15	40.365	5.9	Left	20
1152	131+893.421	131+920.276	131+934.634	2662190.061	529169.628	50	75^52'27.98" Right	25	41.213	7	Right	30
1153	132+121.025	132+145.009	132+145.820	2662098.419	528950.814	20	114^00'21.53" Left	15	24.796	7	Left	20
1154	132+210.268	132+217.033	132+221.760	2662033.168	529020.13	40	45^06'31.10" Right	20	11.492	6.9	Right	20
1155	132+304.343	132+313.431	132+319.676	2661934.771	529022.916	40	50^36'42.48" Right	20	15.334	6.9	Right	20
1156	132+386.853	132+395.363	132+403.683	2661879.142	528958.944	125	14^35'23.72" Right	15	16.83	5.7	Right	40
1157	132+550.287	132+555.304	132+559.911	2661807.891	528815.538	60	23^30'52.71" Right	15	9.624	6.7	Right	30
1158	132+624.220	132+650.761	132+660.480	2661803.032	528719.795	40	87^44'53.80" Left	25	36.26	7	Left	30
1159	132+710.968	132+717.677	132+723.809	2661719.299	528720.751	60	26^35'12.44" Right	15	12.842	6.7	Right	30
1160	132+861.853	132+867.201	132+872.114	2661584.313	528655.108	80	21^40'21.58" Right	20	10.261	6.8	Right	30
1161	133+075.995	133+080.569	133+085.083	2661440.16	528497.21	150	9^12'03.66" Right	15	9.088	4.7	Right	40
1162	133+192.895	133+266.435	133+311.927	2661338.372	528341.621	100	79^39'34.00" Left	20	119.032	7	Left	40
1163	133+418.584	133+462.813	133+477.929	2661131.562	528428.78	50	96^39'08.84" Right	25	59.345	7	Right	30
1164	133+699.265	133+755.304	133+776.060	2661041.836	528119.948	60	97^12'25.42" Left	25	76.795	7	Left	30
1165	133+878.250	133+885.871	133+892.809	2660889.635	528185.834	60	28^13'36.61" Left	15	14.559	6.7	Left	30
1166	133+983.685	134+026.427	134+016.054	2660801.971	528296.575	20	135^41'58.70" Right	15	32.368	7	Right	20
1167	134+132.273	134+145.840	134+158.495	2660784.133	528124.971	100	26^29'00.02" Left	20	26.222	7	Left	40
1168	134+274.447	134+280.859	134+285.313	2660711.261	528010.223	50	41^05'59.37" Left	25	10.866	7	Left	30
1169	134+367.836	134+375.025	134+380.043	2660619.086	527982.951	50	42^38'06.75" Right	25	12.206	7	Right	30
1170	134+440.791	134+468.763	134+490.484	2660569.858	527900.639	80	53^29'40.28" Left	25	49.692	7	Left	40
1171	134+563.623	134+581.009	134+595.701	2660451.93	527889.028	60	44^57'21.01" Right	15	32.078	6.7	Right	30
1172	134+637.477	134+645.638	134+653.047	2660409.178	527837.021	60	29^11'32.02" Left	15	15.57	6.7	Left	30
1173	134+698.757	134+733.425	134+757.127	2660326.736	527804.734	60	70^03'47.09" Right	15	58.37	6.7	Right	30
1174	134+958.530	134+978.852	134+981.016	2660333.222	527548.424	20	107^23'26.93" Left	15	22.486	7	Left	20
1175	135+088.734	135+106.815	135+117.340	2660192.721	527588.556	40	69^37'22.28" Right	20	28.606	6.9	Right	20
1176	135+564.161	135+589.693	135+607.379	2659902.251	527193.394	50	66^42'46.22" Right	15	43.218	5.6	Right	20
1177	135+662.036	135+713.712	135+740.302	2659968.969	527079.652	60	89^03'45.98" Left	15	78.266	6.7	Left	30
1178	135+869.678	135+875.277	135+879.178	2659809.537	526982.595	30	46^47'30.26" Left	15	9.5	5.9	Left	20
1179	135+910.534	135+919.563	135+925.511	2659765.218	526994.853	30	57^15'04.87" Right	15	14.977	5.9	Right	20
1180	135+997.861	136+016.180	136+025.210	2659690.886	526928.412	30	80^52'53.81" Left	15	27.35	5.9	Left	20
1181	136+071.381	136+107.050	136+113.908	2659613.147	526991.567	30	109^52'09.91" Right	15	42.527	5.9	Right	20
1182	136+305.942	136+374.676	136+369.505	2659515.557	526711.655	40	126^51'24.23" Left	25	63.563	7	Left	30
1183	136+482.036	136+493.457	136+499.648	2659408.025	526871.544	40	61^02'10.65" Right	25	17.611	7	Right	30
1184	136+569.945	136+574.309	136+577.633	2659322.265	526864.103	60	31^12'54.28" Right	25	7.688	7	Right	30
1185	136+692.268	136+708.813	136+719.485	2659212.85	526784.101	50	59^50'09.40" Right	25	27.217	7	Right	30
1186	136+836.192	136+882.300	136+898.147	2659231.629	526605.726	60	92^35'07.08" Left	35	61.955	7	Left	40
1187	137+020.405	137+021.690	137+022.948	2659062.281	526595.592	150	6^42'03.67" Right	15	2.543	4.7	Right	40
1188	137+135.121	137+149.010	137+162.595	2658936.919	526573.204	150	16^13'26.36" Left	15	27.474	4.7	Left	40
1189	137+266.956	137+367.291	137+309.168	2658719.571	526596.426	25	154^02'24.22" Right	25	42.213	7	Right	20
1190	137+452.516	137+466.542	137+475.907	2658937.982	526459.638	50	55^27'04.40" Left	25	23.39	7	Left	30
1191	137+644.250	137+673.233	137+671.649	2658947.165	526248.485	20	121^27'48.58" Left	15	27.399	7	Left	20
1192	137+714.937	137+741.161	137+750.269	2658860.997	526296.196	30	96^07'33.78" Right	15	35.331	5.9	Right	20
1193	137+823.520	137+853.352	137+861.861	2658810.791	526177.034	30	101^52'22.48" Left	15	38.341	5.9	Left	20
1194	137+947.482	138+002.977	137+999.827	2658670.281	526274.4	30	128^37'11.62" Right	15	52.345	5.9	Right	20
1195	138+137.062	138+167.581	138+182.630	2658685.465	526051.667	50	80^51'56.35" Left	25	45.569	7	Left	30
1196	138+250.667	138+254.954	138+258.651	2658585.271	526028.472	80	23^37'22.29" Right	25	7.984	7	Right	40
1197	138+384.960	138+430.277	138+432.955	2658444.149	525923.448	30	120^18'41.69" Left	15	47.995	5.9	Left	20
1198	138+483.524	138+495.531	138+499.015	2658432.224	526030.68	20	87^21'02.37" Right	15	15.491	7	Right	20
1199	138+555.441	138+565.413	138+568.746	2658353.984	526025.626	20	81^05'18.32" Left	15	13.305	7	Left	20
1200	138+617.339	138+650.925	138+646.698	2658333.869	526115.555	20	127^04'49.76" Right	15	29.359	7	Right	20
1201	138+736.199	138+739.171	138+740.964	2658252.316	526019.431	50	34^06'28.53" Right	25	4.765	7	Right	30
1202	138+810.973	138+816.547	138+820.375	2658243.827	525941.337	50	39^25'18.42" Right	25	9.402	7	Right	30
1203	138+882.877	138+905.217	138+906.684	2658293.358	525865.696	20	111^10'19.93" Left	15	23.806	7	Left	20
1204	139+018.479	139+022.451	139+025.043	2658158.292	525836.874	50	36^10'13.58" Right	25	6.565	7	Right	30
1205	139+157.371	139+169.619	139+177.964	2658059.312	525726.108	50	52^14'45.39" Left	25	20.593	7	Left	30
1206	139+299.651	139+308.787	139+317.412	2657916.593	525736.162	100	21^38'06.81" Left	20	17.761	7	Left	40
1207	139+390.198	139+398.480	139+404.024	2657835.288	525775.23	30	55^03'15.41" Right	15	13.826	5.9	Right	20
1208	139+444.729	139+447.116	139+449.380	2657790.526	525750.019	80	14^04'27.35" Left	15	4.651	5	Left	30
1209	139+550.270	139+578.796	139+586.116	2657663.403	525715.206	50	86^54'46.35" Left	40	35.846	7	Left	40
1210	139+808.983	139+815.742	139+821.676	2657581.908	525960.158	50	31^43'59.94" Right	15	12.693	5.6	Right	20
1211	139+899.615	139+901.801	139+902.421	2657515.219	526015.848	40	39^49'44.11" Left	25	2.806	7	Left	30
1212	139+972.168	139+986.065	139+987.085	2657499.863	526100.293	30	85^47'06.29" Right	30	14.917	7	Right	30
1213	140+140.193	140+144.238	140+147.054	2657329.779	526082.142	30	41^45'06.05" Right	15	6.861	5.9	Right	20
1214	140+195.265	140+200.678	140+204.455	2657291.074	526039.391	30	46^11'59.76" Left	15	9.19	5.9	Left	20
1215	140+263.540	140+266.732	140+268.703	2657223.411	526037.45	50	34^33'48.51" Right	25	5.162	7	Right	30

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: DECEMBER, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street, New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

CURVE DETAILS REPORT

FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

CONSULTANT : CETEST Engineering Consultants An ISO 9001, 14001 & OHSAS 18001 Certified Company

CE TESTING COMPA
124-A, N.S.C. B
Kolkata - 7

C.E. TESTING CO. PVT. LTD. KOLKATA 700 092 124A, N.S.C. BOSE ROAD

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/CDR

REVISION MKD. - R0 | SHEET NO. - 01

DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

CURVE DETAILS REPORT

HIP NO.	CHAINAGE			HIP COORDINATES		RADIUS	DEFLECTION	Ls (M)	Lc (M)	e (%)	HAND OF ARC	DESIGN SPEED
	PC/SC	HIP/PI	PT/CS	NORTHING	EASTING							
1216	140+371.548	140+372.937	140+373.961	2657136.731	525973.993	80	19^37'58.96" Left	25	2.413	7	Left	40
1217	140+563.023	140+580.183	140+597.227	2656937.746	525914.773	170	11^31'40.34" Right	--NA--	34.204	Normal Camber	Right	30
1218	140+615.735	140+626.498	140+637.232	2656896.789	525892.902	170	7^14'42.88" Left	--NA--	21.497	Normal Camber	Left	30
1219	140+771.147	140+800.447	140+809.066	2656734.211	525830.961	30	101^04'06.24" Right	15	37.919	5.9	Right	20
1220	140+943.786	140+978.910	140+999.201	2656839.52	525661.939	50	80^41'24.36" Left	15	55.415	5.6	Left	20

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: DECEMBER, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

CURVE DETAILS REPORT

FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

CONSULTANT :

CETEST Engineering Consultants
An ISO 9001, 14001 & OHSAS 18001 Certified Company

CE TESTING COMPA
124-A, N.S.C. B
Kolkata - 7

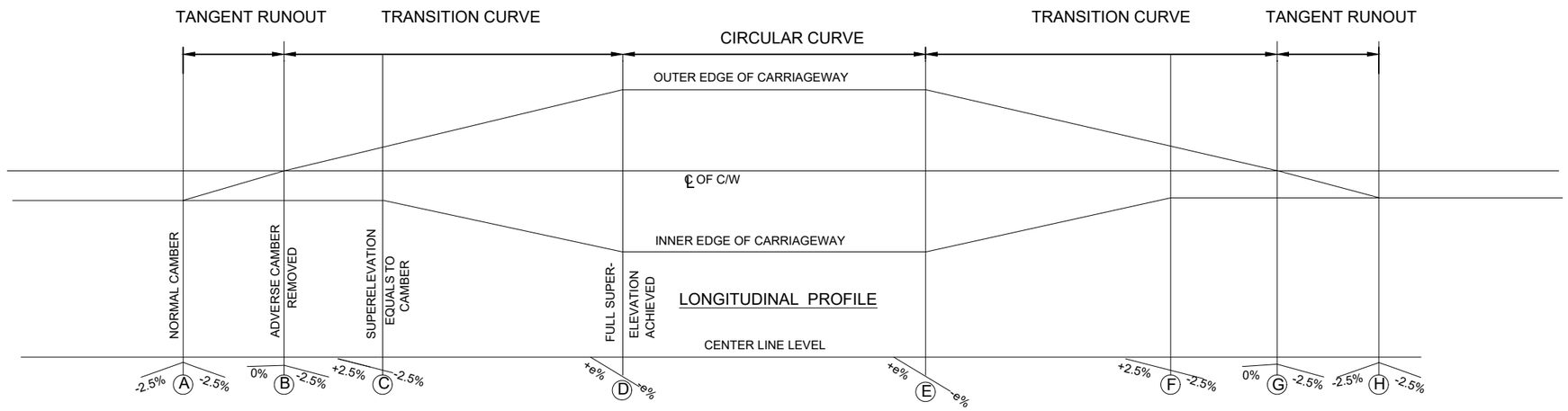
C.E. TESTING CO. PVT. LTD. KOLKATA 700 092 124A, N.S.C. BOSE ROAD

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/CDR

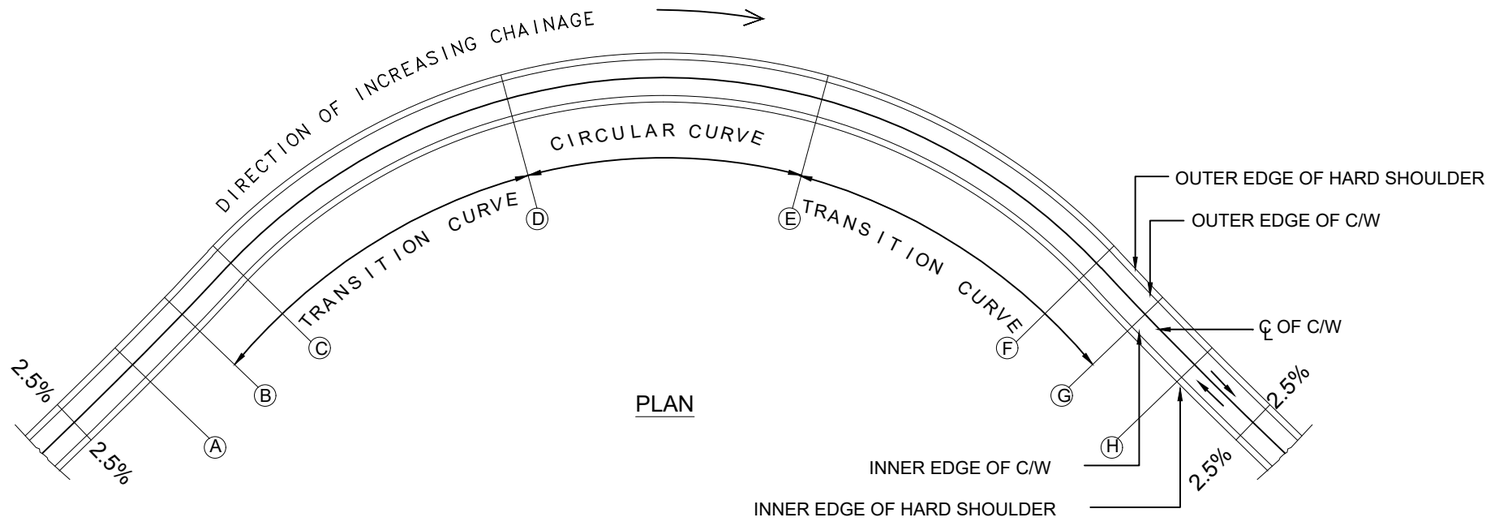
REVISION MKD. - R0 | SHEET NO. - 02

DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

MISCELLANEOUS DRAWINGS



CROSS - SECTIONAL PROFILE



PLAN

TYPICAL DETAILS OF SUPERELEVATION ATTAINMENT FOR A CIRCULAR CURVE WITH TRANSITION (ROTATION ABOUT CARRIAGEWAY CENTRE LINE)

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: DECEMBER, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

DETAILS OF CURVE COMPONENT

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

CONSULTANT : CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/MISC-1			
REVISION MKD. - R0		SHEET NO. - 01 OF 01	
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

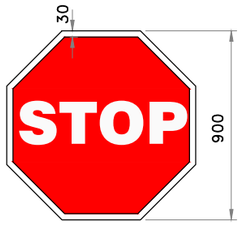


Fig. 14.01
STOP SIGNAL

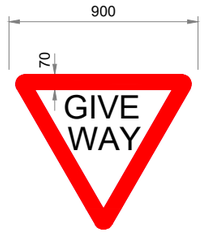


Fig. 14.02
GIVE WAY SIGN

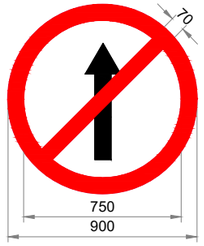


Fig. 14.19
NO ENTRY

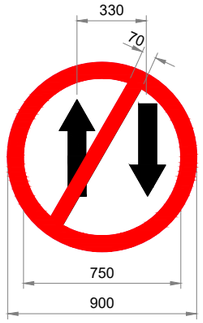


Fig. 14.20
ONE WAY SIGNS



Fig. 14.22
RIGHT TURN PROHIBITED



Fig. 14.21
LEFT TURN PROHIBITED



Fig. 14.24
U - TURN PROHIBITED

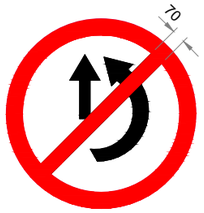


Fig. 14.23
OVERTAKING PROHIBITED



Fig. 14.18
HORN PROHIBITED

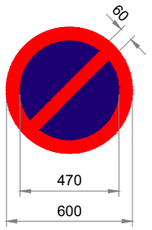


Fig. 14.29
NO PARKING

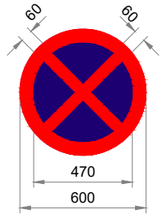


Fig. 14.28
NO STOPPING AND
NO STANDING



Fig. 14.37
SPEED LIMIT

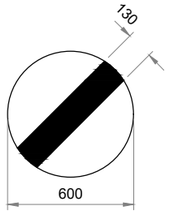


Fig. 14.40
RESTRICTION END



Fig. 14.48
COMPULSORY
KEEP LEFT



Fig. 14.46
COMPULSORY TURN
RIGHT AHEAD

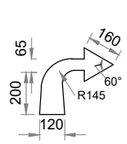




Fig. 14.47
COMPULSORY TURN
LEFT AHEAD

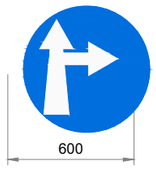


Fig. 14.42
COMPULSORY AHEAD
OR TURN RIGHT



Fig. 14.5
PASS EITHER
SIDE



Fig. 14.43
COMPULSORY AHEAD
OR TURN LEFT

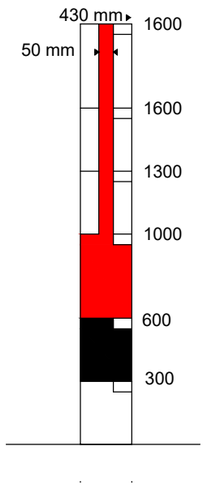


Fig. 18.10
FLOOD GAUGE

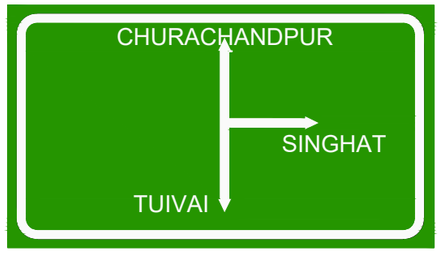


Fig. 16.03
ADVANCE DIRECTION SIGN

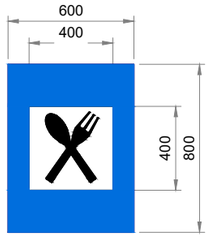


Fig. 17.01
EATING PLACE

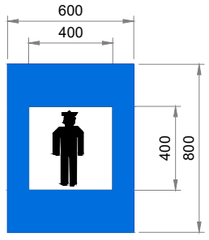


Fig. 17.13
POLICE STATION



Fig. 16.05
REASSURANCE SIGN



Fig. 16.06
PLACE IDENTIFICATION SIGN



Fig. 16.04
PLACE IDENTIFICATION SIGN

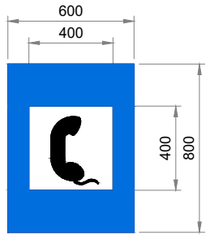


Fig. 17.08
PUBLIC TELEPHONE

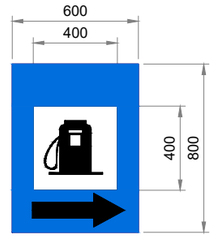


Fig. 17.06
FILLING STATION

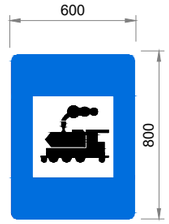


Fig. 17.16
RAILWAY STATION

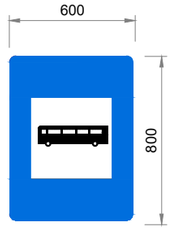


Fig. 17.35
BUS STOP

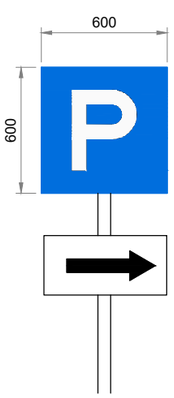


Fig. 18.01
PARKING THIS SIDE

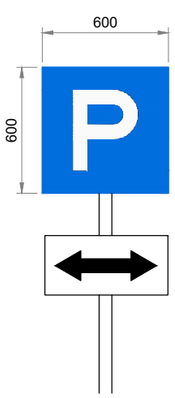


Fig. 14.01
PARKING BOTH SIDE

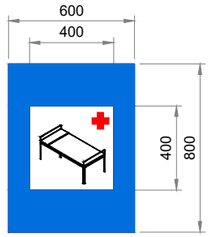


Fig. 17.07
HOSPITAL

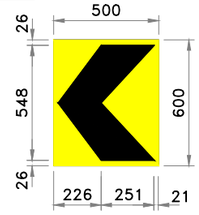


Fig. 15.72
SINGLE CEVRON (NORMAL)

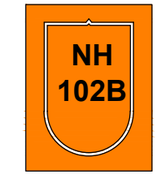


Fig. 20.02
NATIONAL HIGHWAY
ROUTE MARKER SIGN

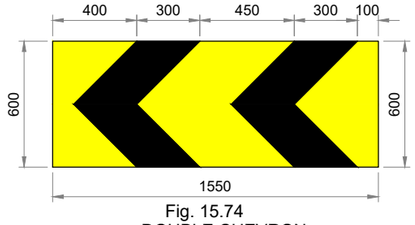


Fig. 15.74
DOUBLE CHEVRON

NOTE:

1. ALL DIMENSIONS ARE IN MM UNLESS AND OTHERWISE SPECIFIED.
2. FOR DETAILS OF ROAD SIGN REFER IRC: 67-2012.

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.
REVISIONS				

Scale :- N.T.S

DATE: DECEMBER, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

TYPICAL DETAILS OF ROAD SIGNS

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

CONSULTANT : CE TESTING COMPANY PVT. LTD.
CETEST Engineering Consultants
An ISO 9001, 14001 & OHSAS 18001 Certified Company
124-A, N.S.C. Bose Road
Kolkata - 700092.

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/MISC-2

REVISION MKD. - R0		SHEET NO. - 01 OF 03	
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

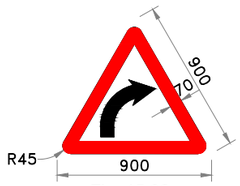


Fig. 15.02
RIGHT HAND CURVE

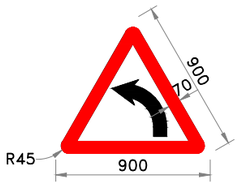


Fig. 15.01
LEFT HAND CURVE

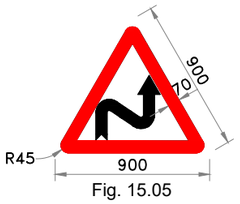


Fig. 15.05
RIGHT REVERSE BEND

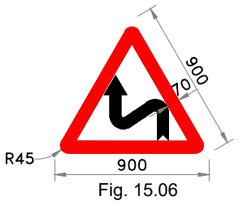


Fig. 15.06
LEFT REVERSE BEND

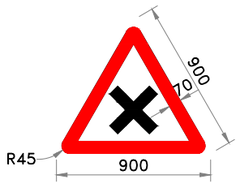


Fig. 15.14
CROSS ROAD

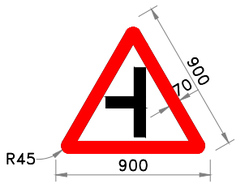


Fig. 15.10
SIDE ROAD LEFT

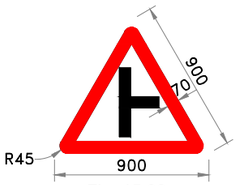


Fig. 15.09
SIDE ROAD RIGHT

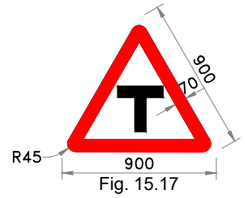


Fig. 15.17
T-INTERSECTION

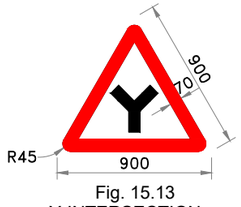


Fig. 15.13
Y-INTERSECTION

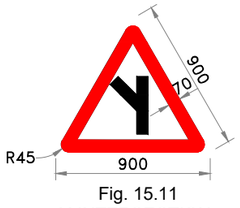


Fig. 15.11
Y-INTERSECTION

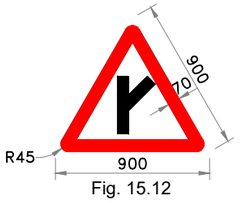


Fig. 15.12
Y-INTERSECTION

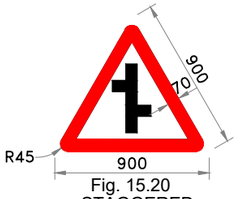


Fig. 15.20
STAGGERED
INTERSECTION

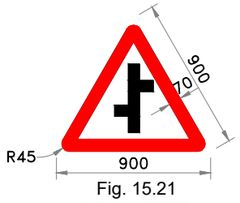


Fig. 15.21
STAGGERED
INTERSECTION

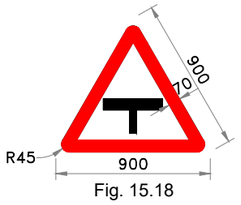


Fig. 15.18
T- INTERSECTION
MAJOR ROAD AHEAD

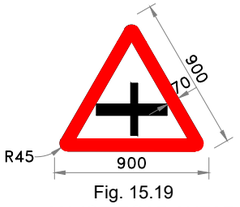


Fig. 15.19
MAJOR ROAD AHEAD

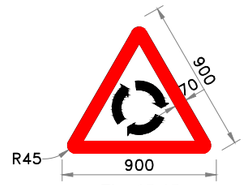


Fig. 15.15
ROUND ABOUT

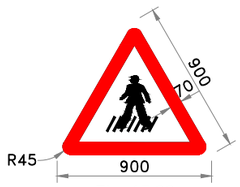


Fig. 15.33
PEDESTRIAN CROSSING

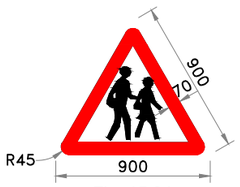


Fig. 15.34
SCHOOL

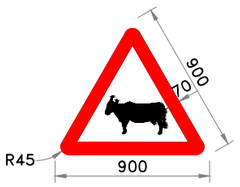


Fig. 15.66
CATTLE

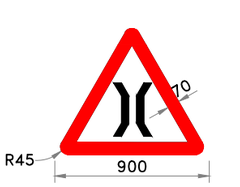


Fig. 15.11
NARROW BRIDGE

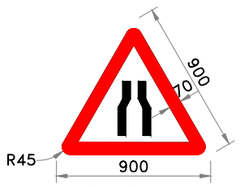


Fig. 15.23
NARROW ROADS

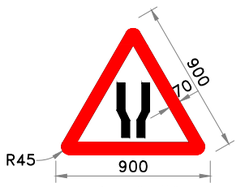


Fig. 15.24
ROAD WIDENS AHEAD

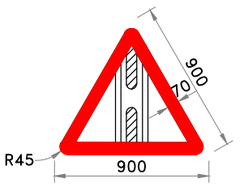


Fig. 15.32
GAP IN MEDIAN

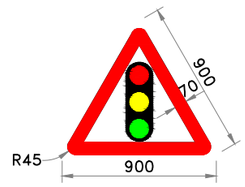


Fig. 15.16
TRAFFICE SIGNAL

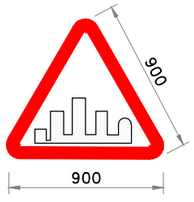


Fig. 15.35
BUILT-UP AREA

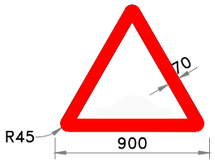


Fig. 15.49
SPEED BREAKER

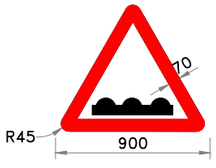


Fig. 15.49
RUMBLE STRIP

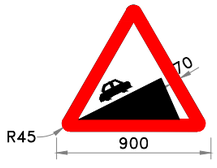


Fig. 15.26
STEEP ASCENT



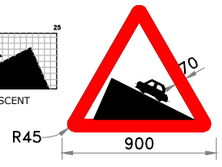


Fig. 15.27
STEEP DESCENT



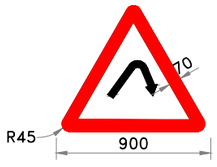


Fig. 15.03
RIGHT HAIRPIN BEND

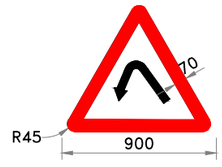


Fig. 15.04
LEFT HAIRPIN BEND

NOTE:

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED
2. FOR DETAILS OF ROAD SIGN REFER IRC-67:2012

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: DECEMBER, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

TYPICAL DETAILS OF ROAD SIGNS

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

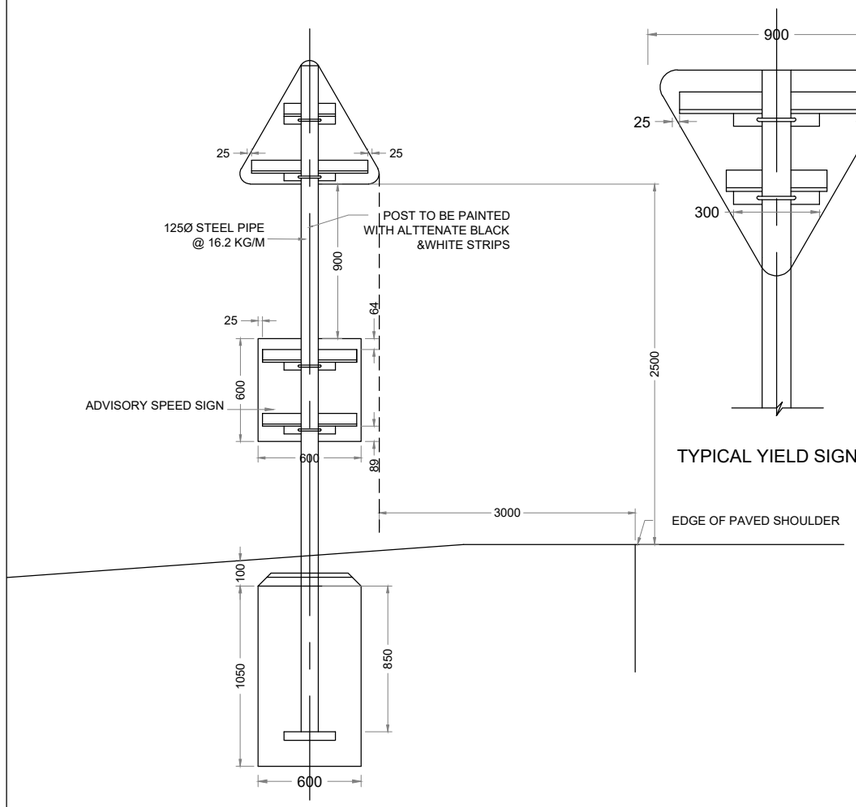
PACKAGE - IVB

CONSULTANT : CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/MISC-2

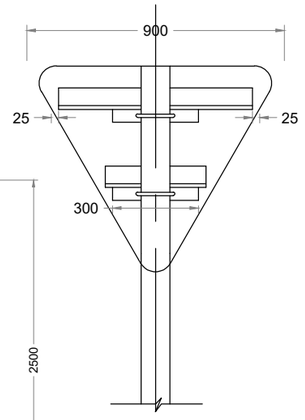
REVISION MKD. - R0 | SHEET NO. - 02 OF 03

DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

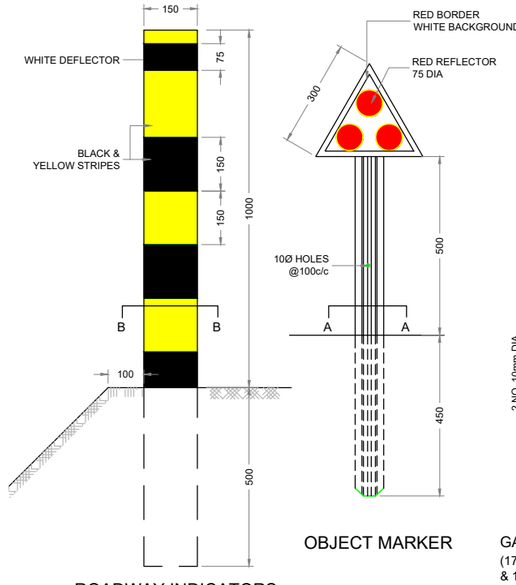


TYPICAL WARNING SIGN

SCALE 1:20



TYPICAL YIELD SIGN

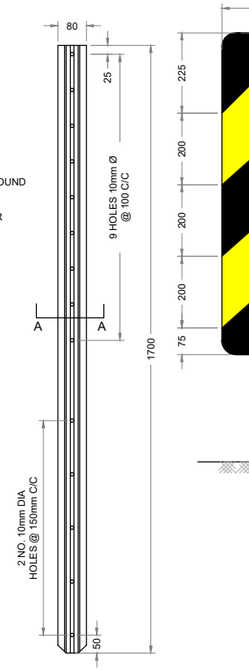


ROADWAY INDICATORS

(TO BE INSTALLED AT 50MC/C
ON BOTH EDGES OF ROAD WAY
ON EMBANKMENT HEIGHT LESS THAN
3M AND AT CARRIAGE WAY TRANSITIONS)

SCALE 1:10

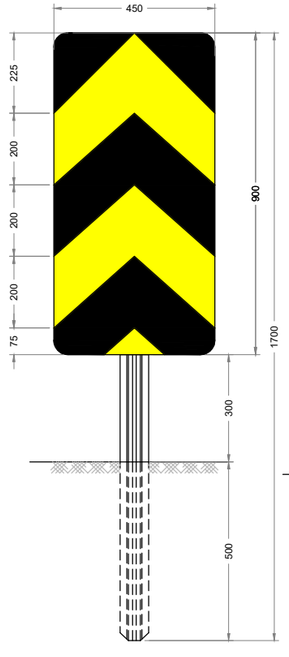
OBJECT MARKER



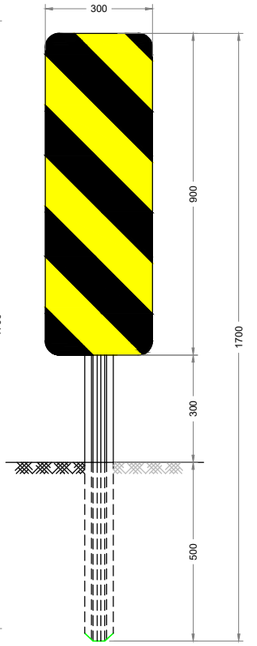
GALVANISED STEEL POST

(1700 FOR HAZARD MARKER
& 1200 FOR OBJECT MARKER)

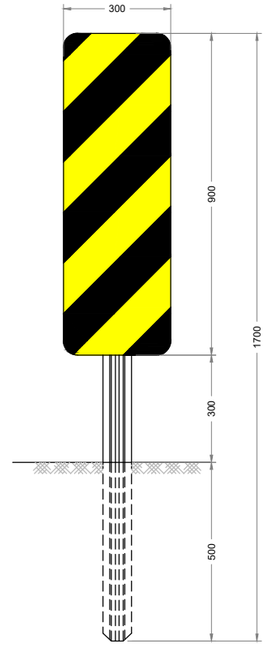
SCALE 1:10



TWO WAY



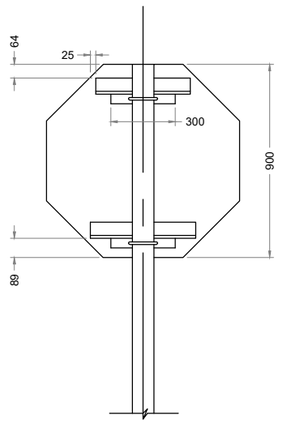
LEFT



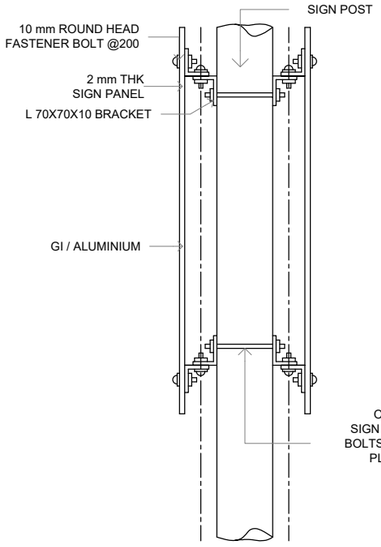
RIGHT

HAZZARD MARKERS

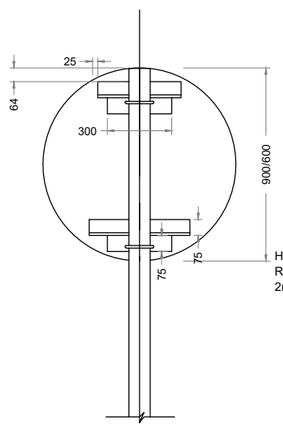
SCALE 1:10



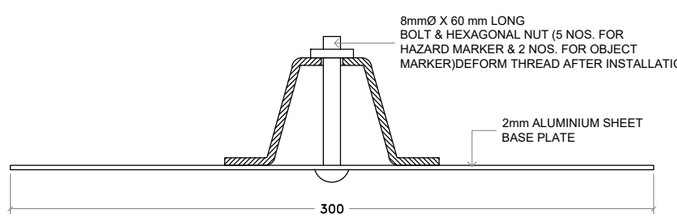
TYPICAL STOP SIGN



BACK TO BACK SIGN ASSEMBLY

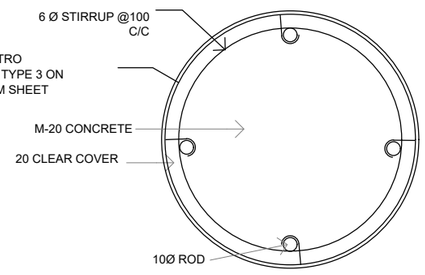


TYPICAL NO ENTRY SIGN



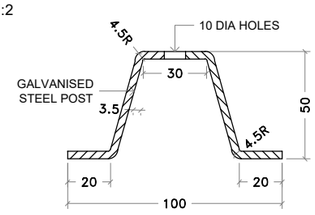
MOUNTING DETAILS OF BACK PLATE

SCALE 1:2



SECTION B-B

SCALE 1:2.5



SECTION A-A'

SCALE 1:2

NOTES:-

01. ALL DIMENSIONS ARE IN MM. AND LEVELS IN METERS, UNLESS OTHERWISE SPECIFIED.

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.
REVISIONS				

Scale :- N.T.S

DATE: DECEMBER, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

TYPICAL DETAILS OF ROAD SIGNS

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

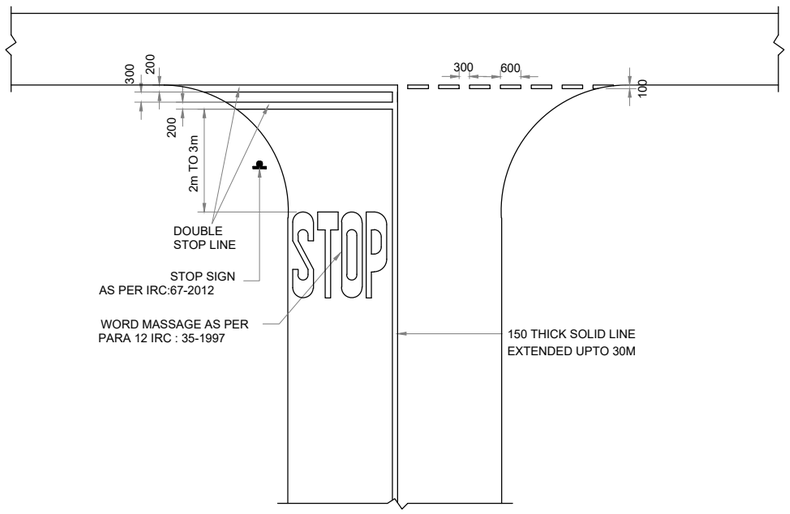
PACKAGE - IVB

CONSULTANT : CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092

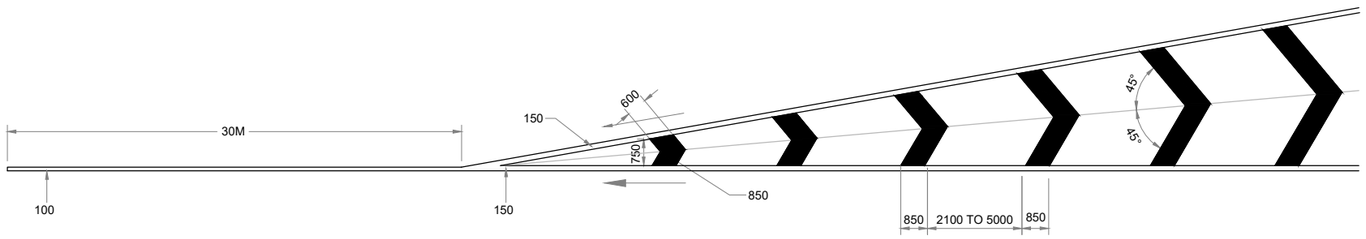
DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/MISC-2

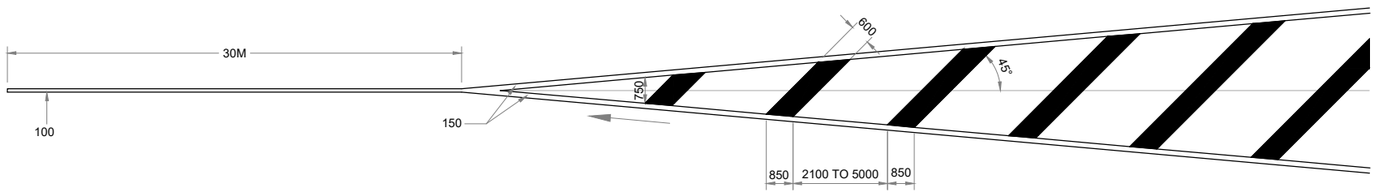
REVISION MKD. - R0 | SHEET NO. - 03 OF 03

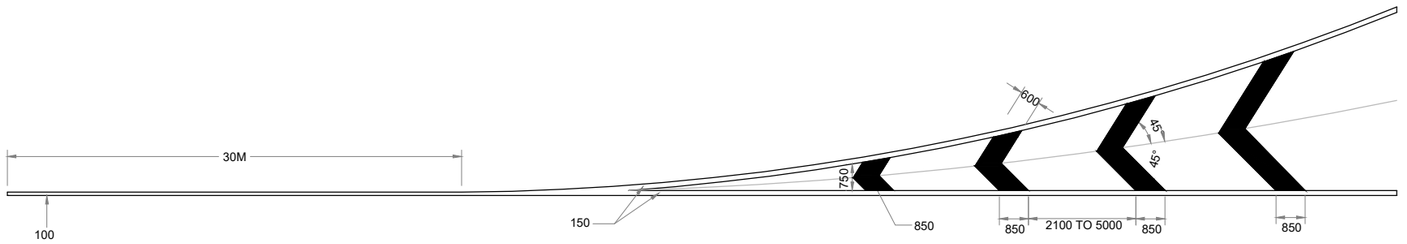
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS



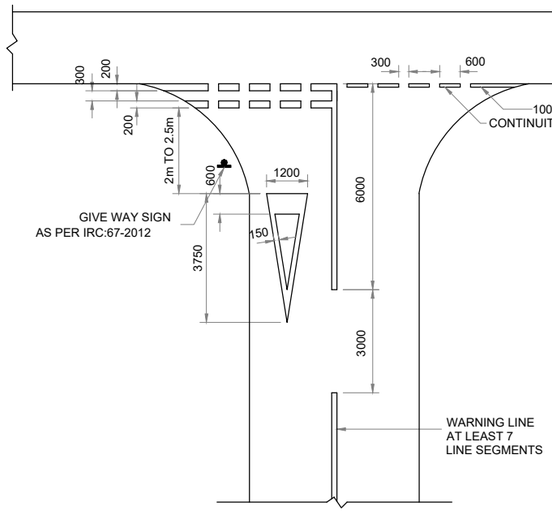
STOP LINES



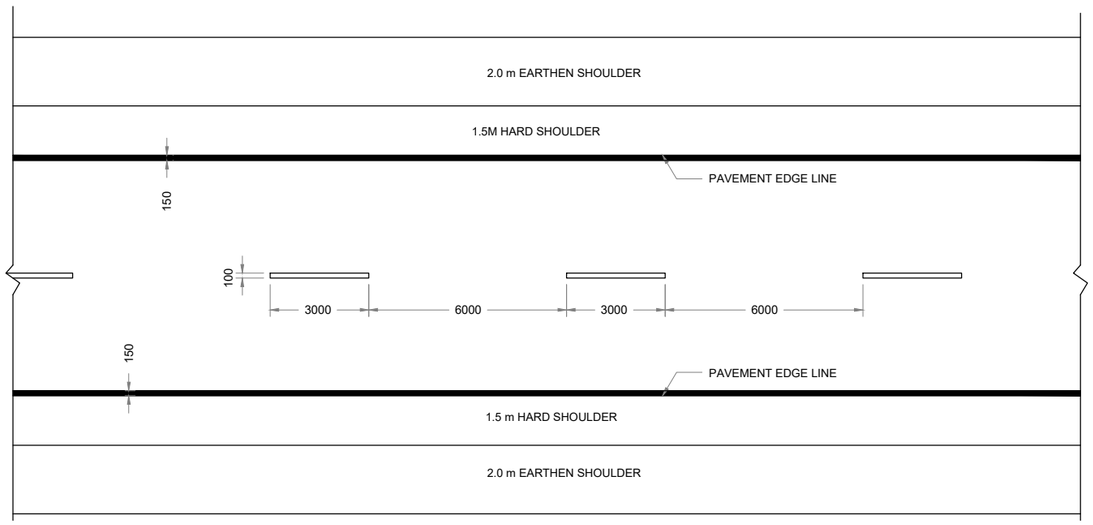




DETAILS OF DIAGONAL AND CHEVRON MARKINGS



GIVEWAY LINES



NOTE:

1: ALL DIMENSIONS ARE IN MM.

2: ALL DIMENSIONS SHOULD FOLLOW RELEVANT IRC CODE N0. IRC :35-1997

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: DECEMBER, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
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PAVEMENT MARKING

SUBMISSION TYPE :

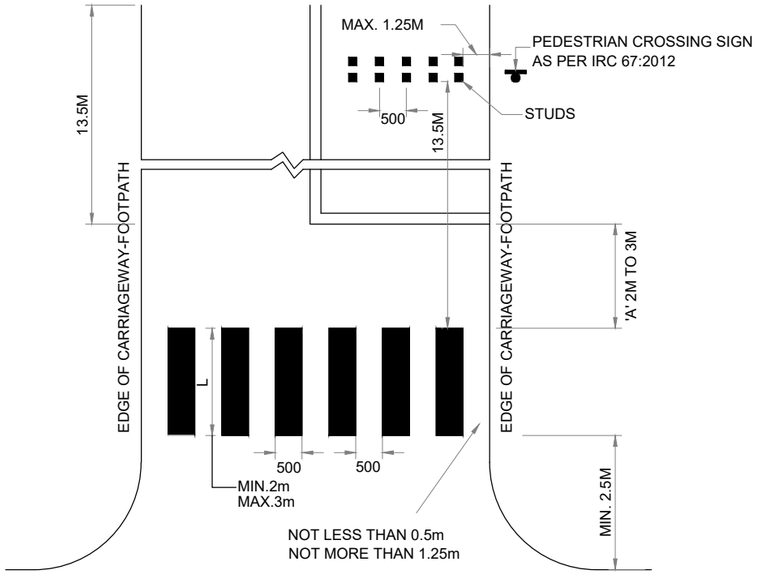
FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

CONSULTANT :

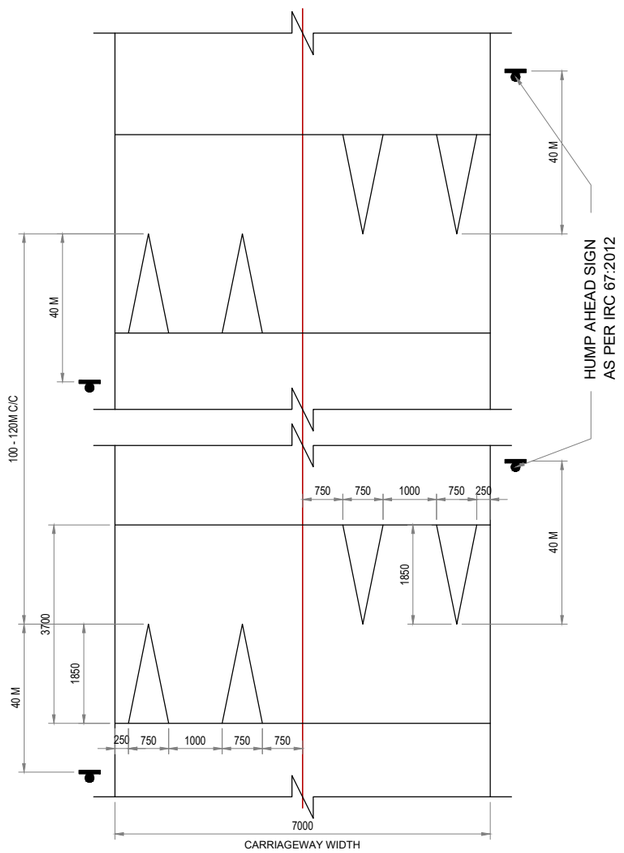
CE TESTING COMPANY PVT. LTD
124-A, N.S.C. Bose Road
Kolkata - 700092.

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/MISC-3			
REVISION MKD. - R0		SHEET NO. - 01 OF 02	
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS



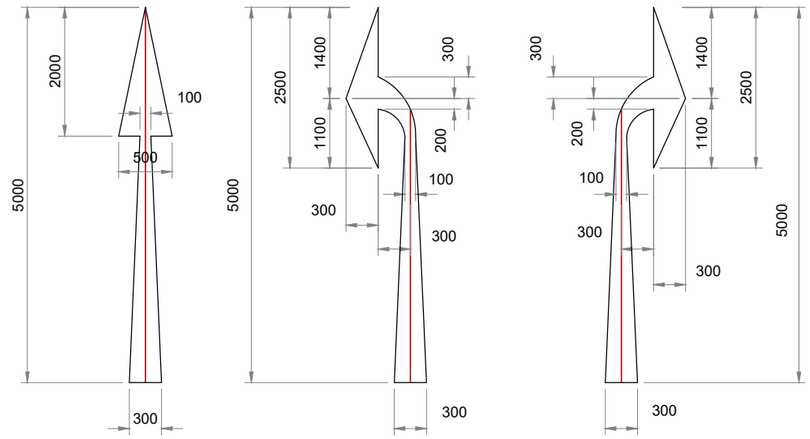
DETAILS OF PEDESTRIAN CROSSING MARKING

SCALE=1:80



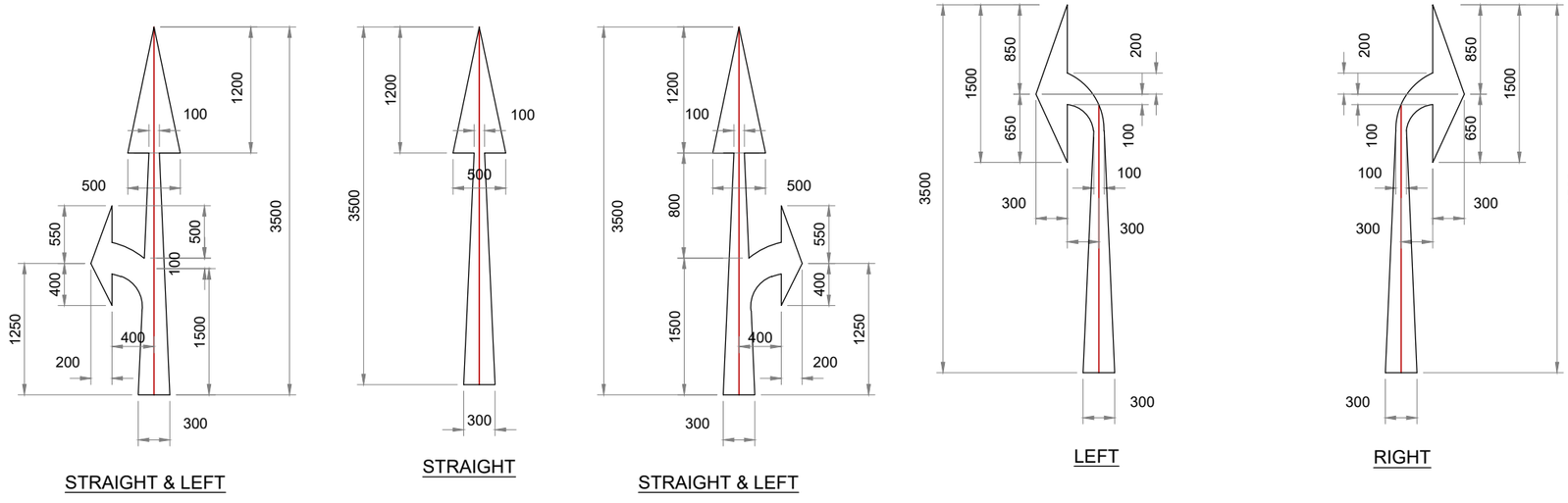
DETAILS OF SPEED BREAKERS MARKING

SCALE=1:80



ARROW MARKINGS FOR ROUTE DIRECTION FOR DESIGN SPEED MORE THAN 50 Km/Hr

SCALE=1:60



ARROW MARKINGS FOR ROUTE DIRECTION FOR DESIGN SPEED OF 50 Km/Hr. OR LESS

SCALE=1:60

NOTE:

1: ALL DIMENSIONS ARE IN MM.

2: ALL DIMENSIONS SHOULD IRC CODE N0. IRC :35-1997

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: DECEMBER, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
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PAVEMENT MARKING

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

CONSULTANT :

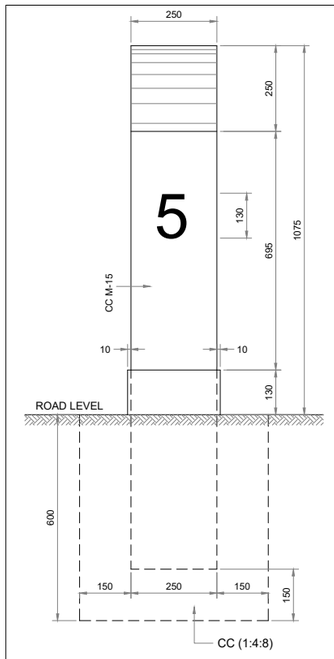
CETEST Engineering Consultants
An ISO 9001, 14001 & OHSAS18001 Certified Company

CE TESTING COMPANY PVT. LTD
124-A, N.S.C. Bose Road
Kolkata - 700092.

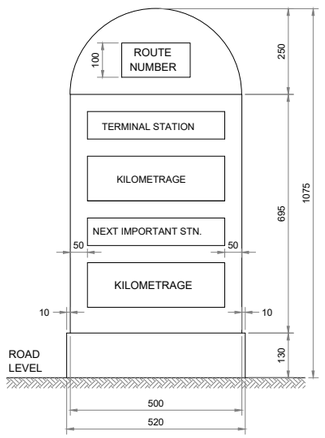
DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/MISC-3

REVISION MKD. - R0 | SHEET NO. - 02 OF 02

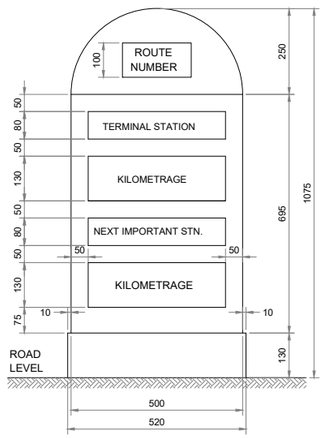
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS



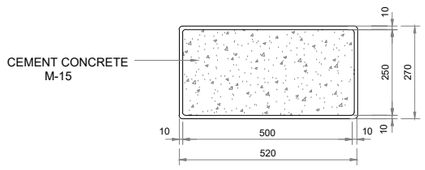
SIDE ELEVATION



FACE - 1

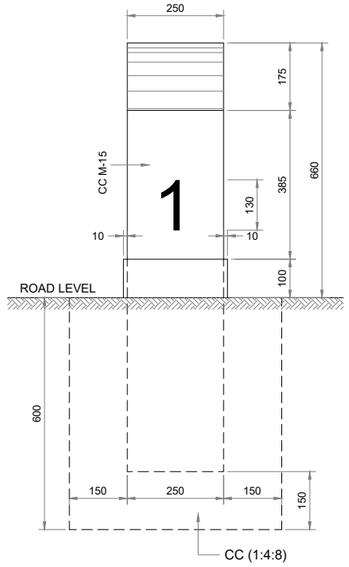


FACE - 2

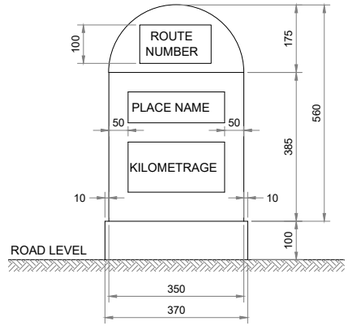


SECTIONAL PLAN

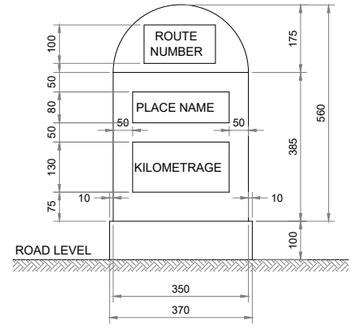
TYPE DESIGN FOR THE 5TH KILOMETRE STONE



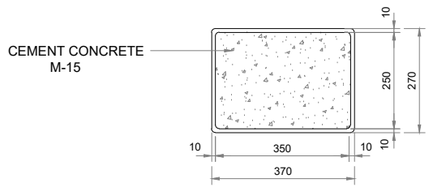
SIDE ELEVATION



FACE - 1



FACE - 2

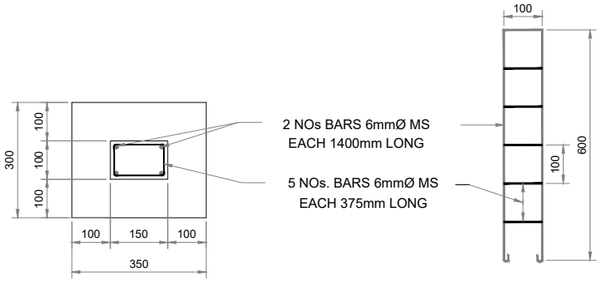


SECTIONAL PLAN

TYPE DESIGN FOR THE ORDINARY KILOMETRE STONE

FRONT ELEVATION

SIDE ELEVATION



PLAN

SCHEDULE OF REINFORCEMENT

TYPE DESIGN FOR 200 - METRE STONES

TYPE DESIGN FOR BOUNDARY STONES

SECTION A

PLAN

LOCATION OF DISTANCE STONE

Notes:

1. Details of kilometre stones and 5th kilometre stones are generally based on IRC:8-1980
2. Details of 200m stones are generally based on IRC:26-1967.
3. The distance stones shall be provided on left side of the road as shown independently for each direction of traffic flow.
4. The letters and numerals on distance stones shall be as per IRC:8-1980.
5. Details of boundary stones are generally based on IRC:25-1967.
6. Reinforcement - Mild steel bars conforming to I.S.432/1966 Grade 1 tested steel
7. CONCRETE MIX -
   RCC : GRADE M-15
   CC :- 1:4:8
8. All dimensions are in millimetres unless otherwise mentioned.

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: DECEMBER, 2019

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DETAILS OF KM STONE, 5TH KM STONE, 200 M STONE, BOUNDARY STONE

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

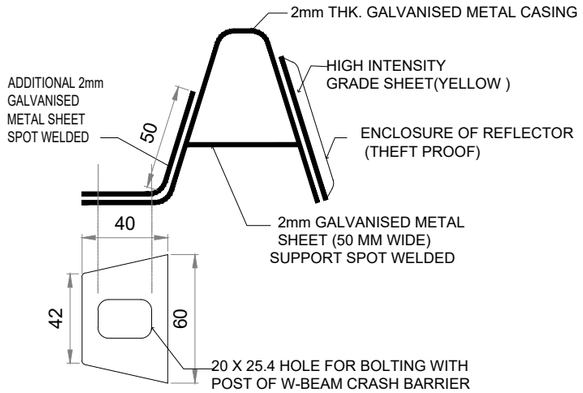
CONSULTANT : CETEST Engineering Consultants (An ISO 9001, 14001 & OHSAS 18001 Certified Company)

CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road,
Kolkata - 700092.

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/MISC-4

REVISION MKD. - R0 | SHEET NO. - 01 OF 01

DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS



GUARD RAIL REFLECTOR

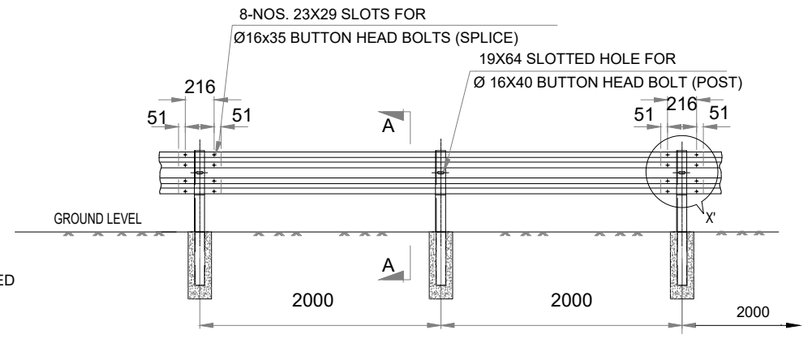
SHAPE : Equilateral Trapezium

DIMENSIONS :

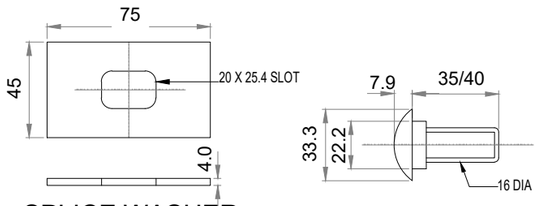
FRONT CASING
- Top: 95 mm
- Bottom: 70 mm
- Height: 80 mm

REFLECTIVE PORTION
- Top: 70 mm
- Bottom: 50 mm
- Height: 50 mm

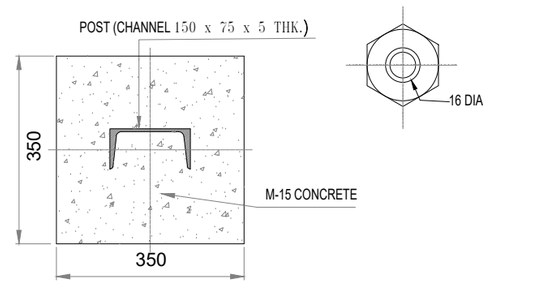
GUARD RAIL REFLECTOR WILL BE BOLTED REPLACING SPLICE WASHER EVERY 10 POSTS INTERVAL



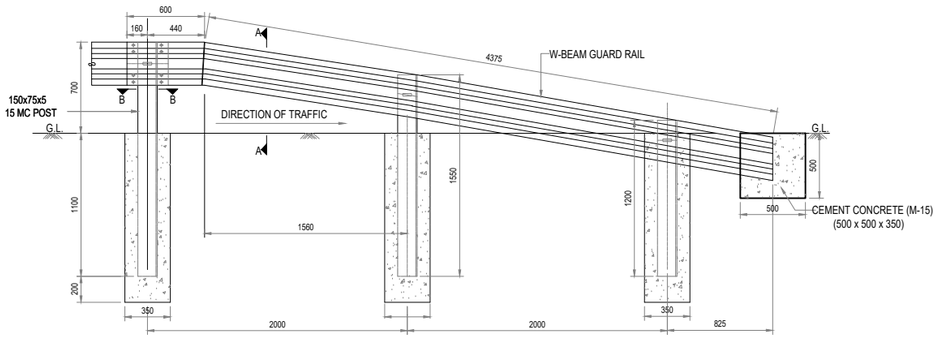
ELEVATION OF SINGLE SIDED GUARD RAIL



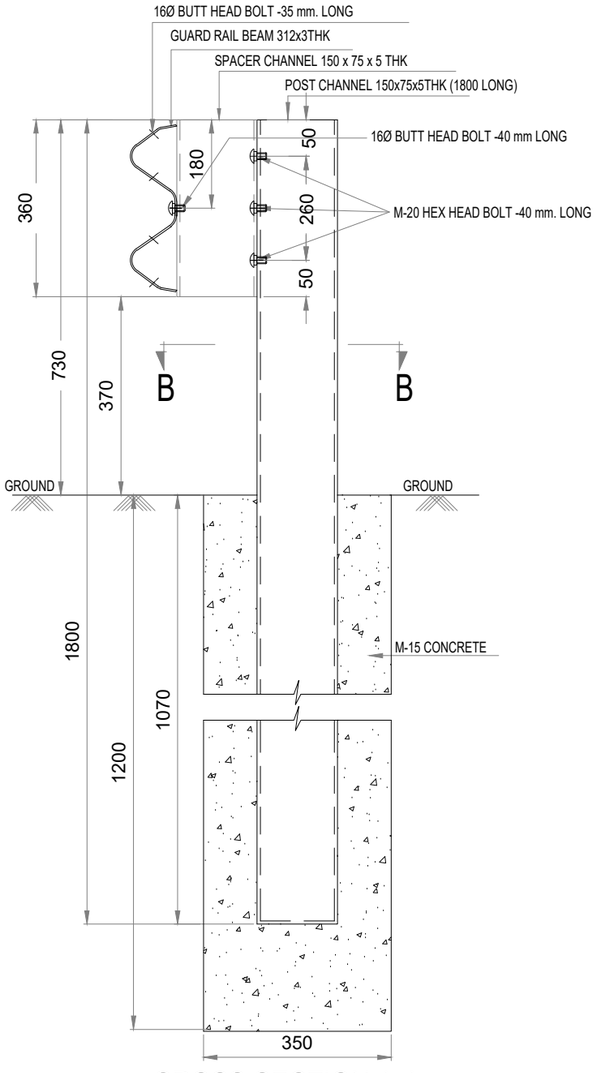
SPLICE WASHER



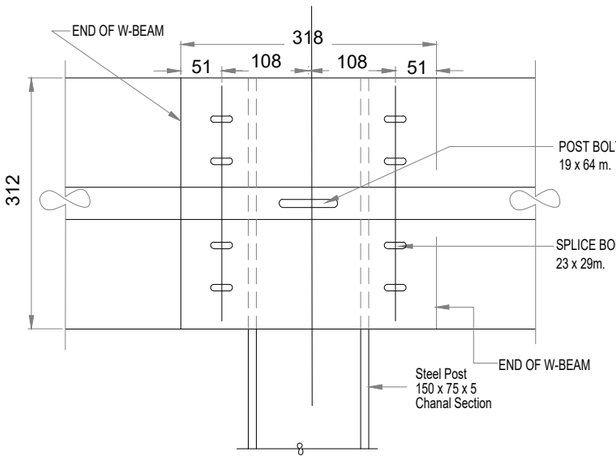
SECTION `B-B'



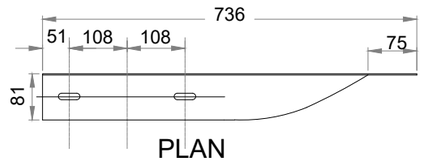
ELEVATION SHOWING SINGLE SIDED GAURD RAIL SYSTEM - END SIDE ARRANGEMENT



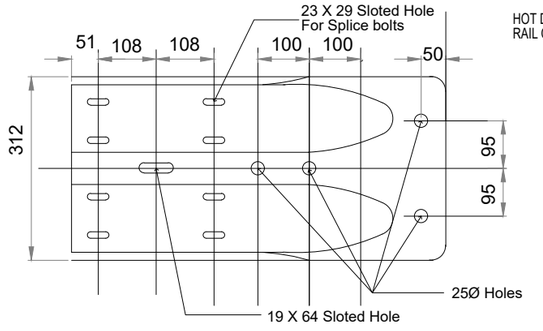
CROSS SECTION A-A



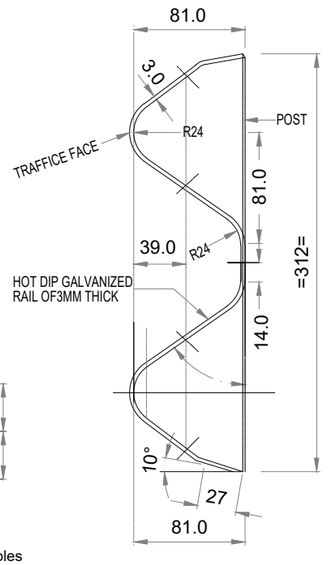
DETAILS OF 'X'



PLAN



ELEVATION OF W BEAM END SECTION (FLARED)



TYPICAL CROSS SECTION OF W-BEAM

NOTES :

01. ALL DIMENSIONS ARE IN mm UNLESS NOTED OTHERWISE.
02. ALL PUNCHING DIMENSIONS UNLESS OTHERWISE STATED = ±1mm.
03 WELDING ELECTRODES SHALL CONFORM TO IS:314.
04. FOR GUARD RAIL BEAMS, POSTS & SPACER MATERIAL SHALL CONFORM TO IS:10748, GRADE-II. IS 808, IS 2062
05. BOLTS,NUTS & WASHERS SHALL BE ELECTRO GALVANISED.
06. GUARD RAIL, POSTS, SPACERS, FOUNDATION BOLTS SHALL BE HOT DIP GALVANISED.
07. THE OVER LAPPING OF THE GAURD RAIL BEAM SHALL BE ACHIEVED USING SUITABLE SIZE WASHERS.
08. GUARD RAILS ARE TO BE PROVIDED WHEREVER:-
a) HEIGHT OF THE EMBANKMENT IS MORE THAN 3M
b) OUTER SIDE OF SUPERELEVATED SECTION, UNDERPASS,PIER OBSTRUCTION AND BOTH SIDES OF BRIDGE APPROACHES.
9. ALL FITTINGS TO CONFORM TO IS : 1367 AND IS : 1364
10. W-BEAM GUARDRAIL ARE TO BE FABRICATED AND INSTALLED AS PER SECTION 810 OF MORT&H'S SPECIFICATION FOR METAL BEAM CRASH BARRIER.

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.
REVISIONS				

Scale :- N.T.S

DATE: DECEMBER, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

DETAILS OF W-BEAM METAL CRASH BARRIER

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

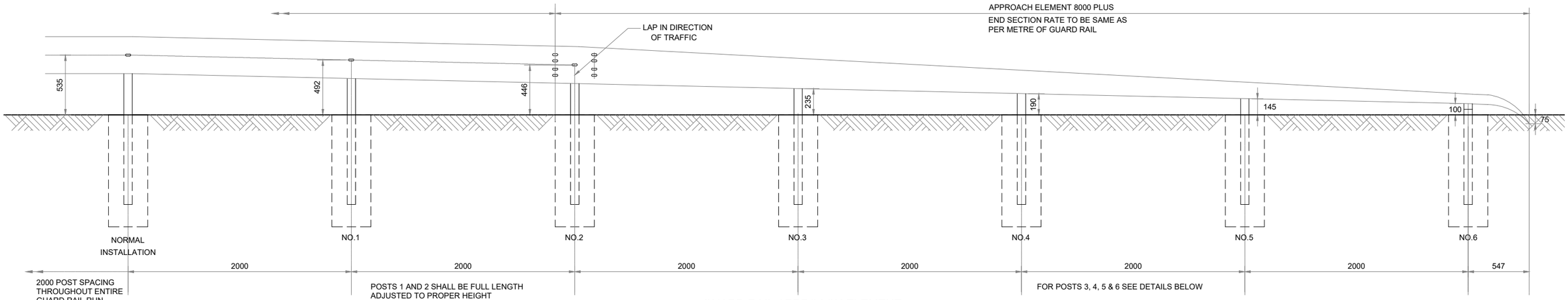
CONSULTANT : CETEST Engineering Consultants (An ISO 9001, 14001 & OHSAS 18001 Certified Company)

CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092.

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/MISC-5

REVISION MKD. - R0 | SHEET NO. - 01 OF 02

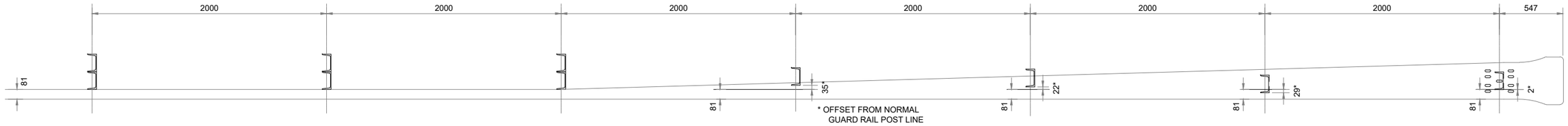
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS



GUARD RAIL APPROACH ELEMENT

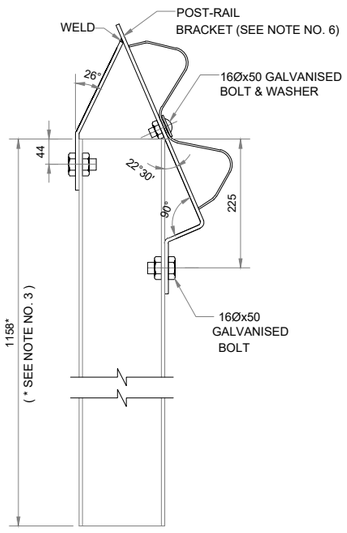
ELEVATION

(SCALE 1:25)

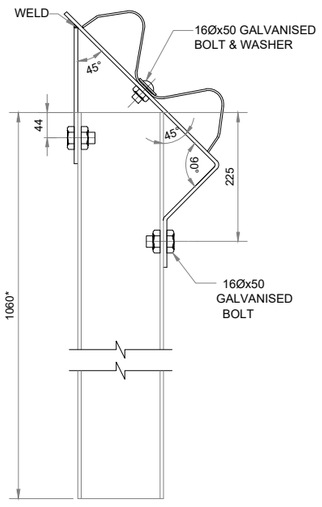


PLAN

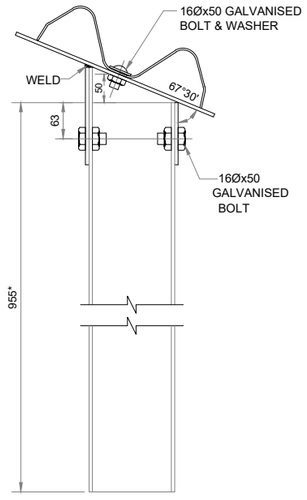
(SCALE 1:25)



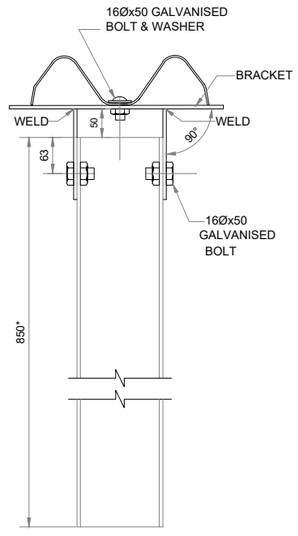
NO.3



NO.4



NO.5



NO.6

(SCALE 1:7.5)

NOTES :

1. THE APPROACH ELEMENT SHALL BE TWISTED TO HORIZONTAL AND SECURED TO THE POSTS, AS SHOWN, WITH THE END SECTION TIP BURIED.
2. PLACE DELINEATOR POST ADJACENT TO THE BEGINNING OF THE APPROACH ELEMENT.
3. THE HEIGHT OF POST NOS. 3,4,5 & 6. IS INDICATIVE ONLY. THIS SHALL BE ADJUSTED TO PROUDUCE A STRAIGHT LINE AT THE CENTRE OF RAIL.
4. THE APPROACH END ELEMENT SHALL BE TANGENT TO THE NORMAL GUARD RAIL LINE.
5. FOR POST, RAIL & TRAILING END ELEMENT DETAILS SEE SEPARATE DRAWING.
6. THE POST-RAIL BRACKET SHALL BE 178 MM WIDE AND HAVE A 25 MM OVERHANG ON EACH SIDE OF THE GUARD RAIL.
7. MANUFACTURERS ARE TO VERIFY DIMENSIONS BEFORE INSTALLATION AND MAKE ADJUSTMENTS, IF NECESSARY, WITH APPROVAL OF ENGINEERS.

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.
REVISIONS				

Scale :- N.T.S

DATE: DECEMBER, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

DETAILS OF W-BEAM METAL CRASH BARRIER

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

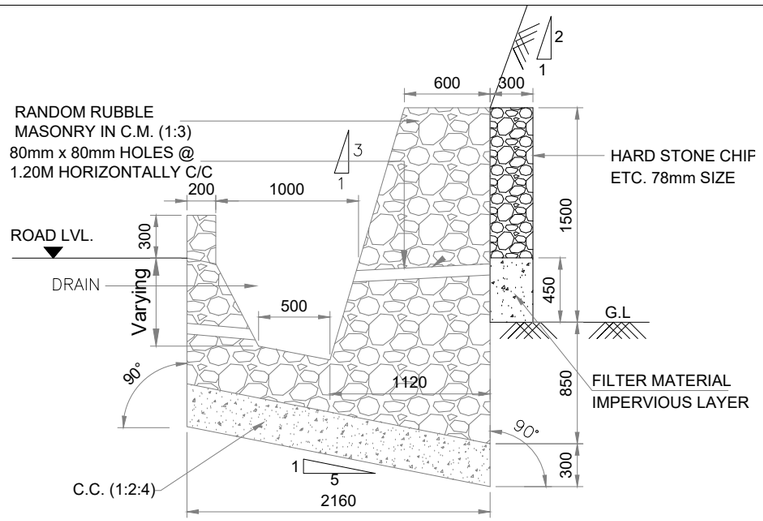
PACKAGE - IVB

CONSULTANT : CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092.

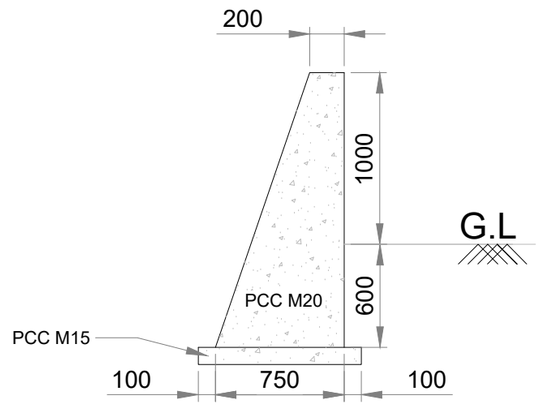
DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/MISC-5

REVISION MKD. - R0 | SHEET NO. - 02 OF 02

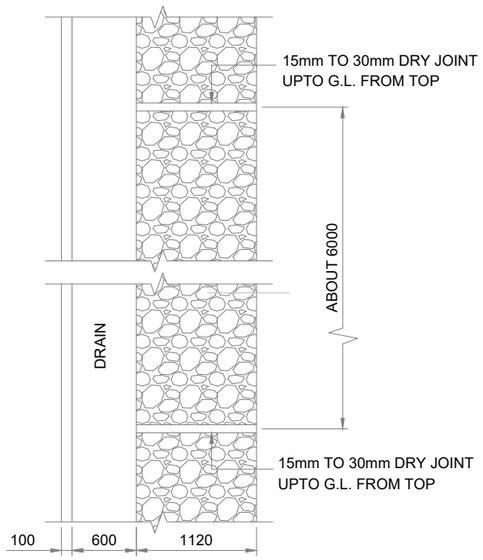
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS



TYPE-2:- TYPICAL CROSS SECTION OF BREAST WALL OF 1.50MTR. HIGHT
(SCALE 1:25)



TYPICAL CROSS SECTION OF TOE WALL



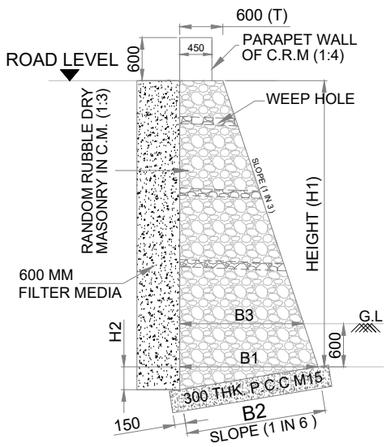
PLAN OF BREAST WALL
(AT GROUND LEVEL)
(SCALE 1:30)

LOCATION OF RETAINING WALL

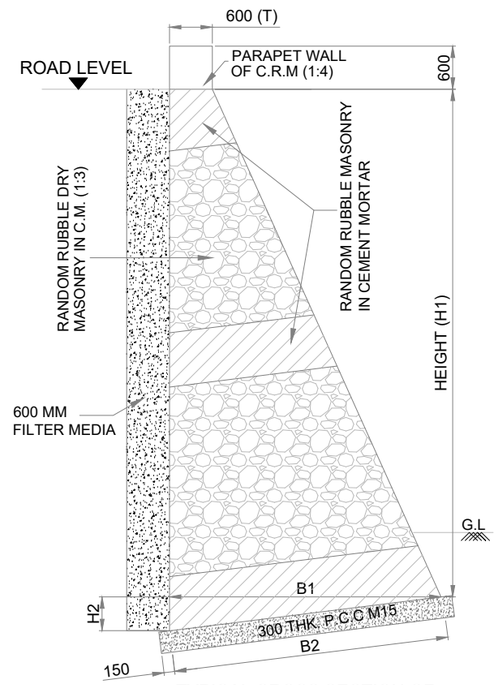
Chainage From (M)	Chainage To (M)	Side	Avg. Height	CD Length	Length	Net Length	TCS
Package-IV B							
130000	130220	single	2.5	2.6	220	217	TCS-11
130970	131620	single	2	7.9	650	642	TCS-11
131770	131970	single	1.5	2.6	200	197	TCS-11
132220	132570	single	2.5	8	350	342	TCS-11
132720	133020	single	4	5.2	300	295	TCS-11
133320	133520	single	2	2.7	200	197	TCS-11
133620	133920	single	2.5	7.8	300	292	TCS-11
134420	134470	single	2	2.6	50	47	TCS-11
134570	135220	single	3	15.6	650	634	TCS-11
135770	135870	single	2	2.6	100	97	TCS-11
136020	136320	single	2	7.9	300	292	TCS-12
136520	136770	single	2	7.9	250	242	TCS-11
136820	136870	single	2		50	50	TCS-11
136970	137620	single	2	13.1	650	637	TCS-11
138720	138770	single	2.5		50	50	TCS-11
138820	138870	single	2.5	2.6	50	47	TCS-11
139470	139720	single	4	8	250	242	TCS-11
139720	139820	single	4	2.7	100	97	TCS-12
130270	130370	single	6	7.8	100	92	TCS-11
130870	130920	single	6	2.6	50	47	TCS-11
133120	133170	single	6	2.6	50	47	TCS-11
135320	135370	single	6	2.6	50	47	TCS-11
135470	135570	single	6	2.7	100	97	TCS-11
140220	140620	single	5	5.2	400	395	TCS-11
Length of retaining wall in package- = IV B =						5347	

LOCATION OF TOE WALL

Chainage (M) From (M)	Chainage (M) To (M)	Total length	Length of CD	Net Length (m)	Side	TCS No.
Package-IV B						
130370	130470	100		100	Single	TCS-14
133170	133220	50		50	Single	TCS-5
134070	134320	250	2.6	247	Single	TCS-5
135870	135970	100	2.7	97	Single	TCS-5
137920	137970	50		50	Single	TCS-5
140020	140170	150	2.6	147	Single	TCS-5
Length of toe wall in Package IV B=				692m		



TYPICAL CROSS SECTION OF
RETAINING WALL (1.5M TO 4.0M HIGHT)
(SCALE 1:50)



TYPICAL CROSS SECTION OF
RETAINING WALL (5.0M TO 8.0M HIGHT)
(SCALE 1:50)

LOCATION OF BREAST WALL

Chainage From (M)	Chainage To (M)	Total length	Length of CD	Net Length (m)	Side	TCS No.
Package-IV B						
130220	130270	50		50	Single	TCS-8
130370	130470	100		100	Single	TCS-14
130470	130870	400	2.6	397	Single	TCS-8
130920	130970	50		50	Single	TCS-9
131970	132220	250	2.6	247	Single	TCS-8
132570	132720	150		150	Single	TCS-9
133520	133620	100		100	Single	TCS-8
134470	134570	100		100	Single	TCS-8
135220	135320	100	2.6	97	Single	TCS-8
135370	135470	100		100	Single	TCS-9
135570	135770	200	2.6	197	Single	TCS-8
135970	136020	50		50	Single	TCS-8
136020	136320	300	7.9	292	Single	TCS-12
136770	136820	50		50	Single	TCS-8
137970	138470	500	2.7	497	Single	TCS-8
138570	138670	100	2.6	97	Single	TCS-8
138970	139170	200		200	Single	TCS-9
139720	139820	100	2.7	97	Single	TCS-12
139820	140020	200	2.6	197	Single	TCS-8
140170	140220	50		50	Single	TCS-8
Length of breast wall in package- IV B=				3121m		

DIMENSION TABLE OF RETAINING WALL

HEIGHT 'H1'	T	B1	B2	B3	H2	FOUNDATION BED
1.5	0.60	1.10	1.15	1.1	0.183	300mm THK. P.C.C. (M15)
2	0.60	1.27	1.284	1.07	0.211	300mm THK. P.C.C. (M15)
2.5	0.60	1.43	1.453	1.43	0.239	300mm THK. P.C.C. (M15)
3	0.60	1.60	1.622	1.60	0.267	300mm THK. P.C.C. (M15)
4	0.60	1.93	1.960	1.93	0.322	300mm THK. P.C.C. (M15)
6	0.60	2.7	2.74	1.60	0.450	300mm THK. P.C.C. (M15)

NOTES :-

1. ALL DIMENSIONS ARE IN mm, UNLESS NOTED OTHERWISE.
2. ON THE RETAINING WALL SIDE THERE SHALL BE NO FOOTPATH AND DRAIN.
3. FOR OTHER DETAILS REFER IRC:SP:48 HILL ROAD MANUAL.

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: DECEMBER, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

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(PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

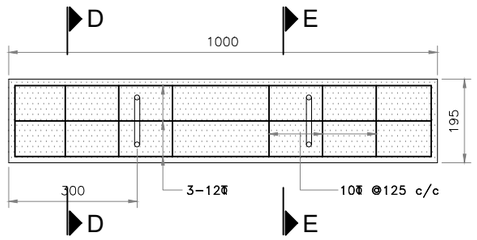
DETAILS OF RETAINING WALL, TOE WALL & BREAST WALL

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT
PACKAGE - IVB

CONSULTANT :
CETEST Engineering Consultants
An ISO 9001, 14001 & OHSAS 18001 Certified Company
CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road,
Kolkata - 700092.

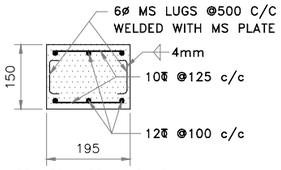
DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/MISC-06

REVISION MKD. - R0	SHEET NO. - 01		
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS



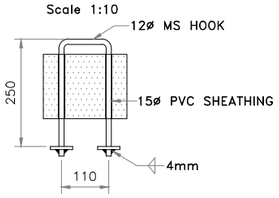
SECTIONAL PLAN OF PRECAST SLAB

Scale 1:10



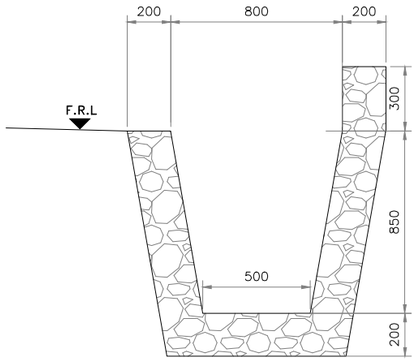
SECTION D-D

Scale 1:10



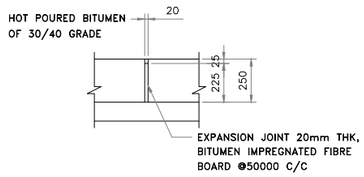
SECTION E-E

Scale 1:10



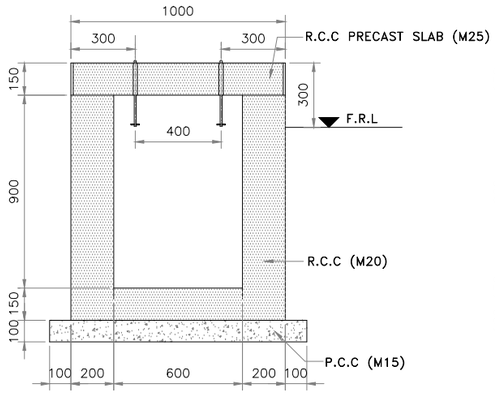
TYPICAL DETAILS OF RR MASONRY TRAPEZOIDAL DRAIN

Scale 1:20

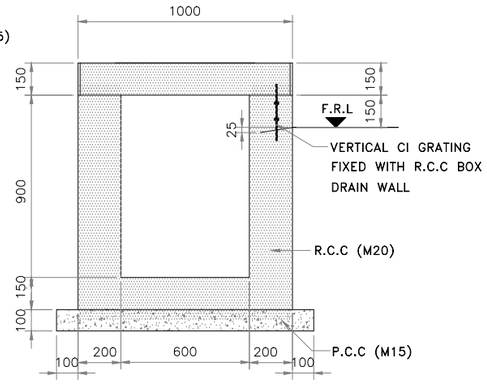


DETAIL OF EXP. JOINT

Scale 1:25

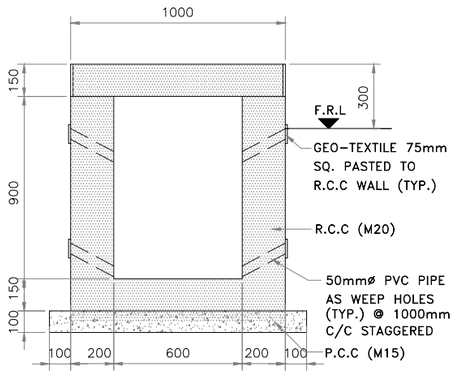


SECTION A-A



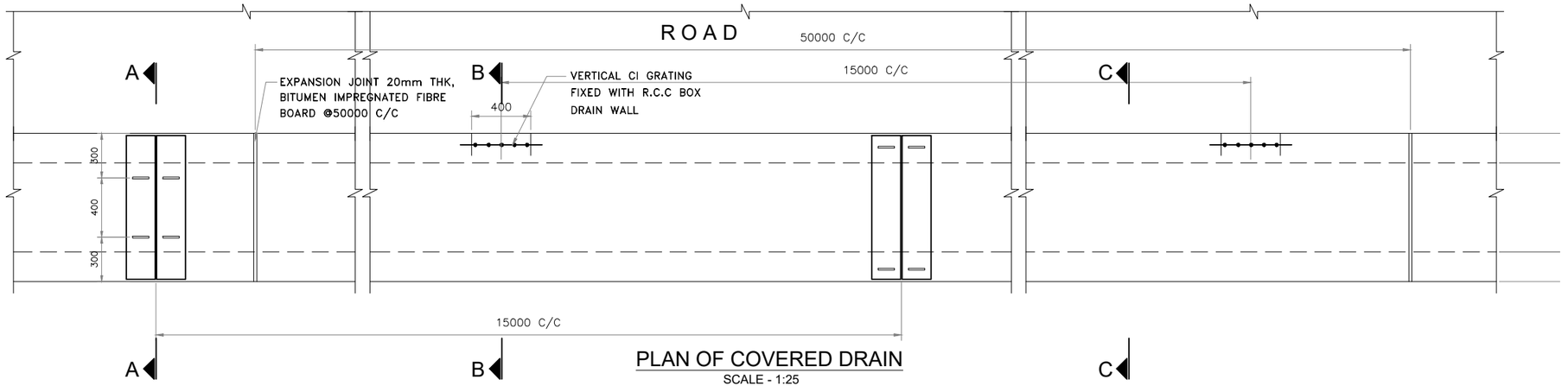
SECTION B-B

Scale 1:20



SECTION C-C

Scale 1:20



PLAN OF COVERED DRAIN

SCALE - 1:25

Chainage		Total Length	Length of CD	Net Length (m)	Side	TCS No.
From (M)	To (M)					
Package-IV B						
130000	130220	220	2.6	217	Single	TCS-11
130270	130370	100	7.8	92	Single	TCS-11
130870	130920	50	2.6	47	Single	TCS-11
130920	130970	50		50	Single	TCS-9
130970	131620	650	7.9	642	Single	TCS-11
131620	131770	150	2.6	147	Single	TCS-7
131770	131970	200	2.6	197	Single	TCS-11
132220	132570	350	8	342	Single	TCS-11
132570	132720	150		150	Single	TCS-9
132720	133020	300	5.2	295	Single	TCS-11
133020	133120	100		100	Single	TCS-7
133120	133170	50	2.6	47	Single	TCS-11
133170	133220	50		50	Single	TCS-5
133220	133320	100		100	Single	TCS-7
133320	133520	200	2.7	197	Single	TCS-11
133620	133920	300	7.8	292	Single	TCS-11
133920	134070	150		150	Single	TCS-7
134070	134320	250	2.6	247	Single	TCS-5
134320	134420	100	2.6	97	Single	TCS-7
134420	134470	50	2.6	47	Single	TCS-11
134570	135220	650	15.6	634	Single	TCS-11
135320	135370	50	2.6	47	Single	TCS-11
135370	135470	100		100	Single	TCS-9
135470	135570	100	2.7	97	Single	TCS-11
135770	135870	100	2.6	97	Single	TCS-11
135870	135970	100	2.7	97	Single	TCS-5
136320	136520	200	10.6	189	Single	TCS-7
136520	136770	250	7.9	242	Single	TCS-11
136820	136870	50		50	Single	TCS-11
136870	136970	100	2.7	97	Single	TCS-7
136970	137620	650	13.1	637	Single	TCS-11
137620	137920	300	2.6	297	Single	TCS-7
137920	137970	50		50	Single	TCS-5
138470	138570	100	2.6	97	Single	TCS-7
138670	138720	50	2.6	47	Single	TCS-7
138720	138770	50		50	Single	TCS-11
138770	138820	50		50	Single	TCS-7
138820	138870	50	2.6	47	Single	TCS-11
138870	138970	100		100	Single	TCS-7
138970	139170	200		200	Single	TCS-9
139170	139470	300	5.2	295	Single	TCS-7
139470	139720	250	8	242	Single	TCS-11
140020	140170	150	2.6	147	Single	TCS-5
140220	140620	400	5.2	395	Single	TCS-11
140620	141029	409	110	299	Single	TCS-7
Length of trapezoidal drain in Package- IV B=				**8117**		

LOCATION OF COVERED DRAIN CUM FOOTPATH

Chainage (Km)		Total length	Length of CD	Net Length (m)	Side	TCS No.
From	To					
Package - IVB						
NIL						

Notes:

1. All dimensions are in millimetres unless otherwise mentihill sided
2. Bearing capacity of soil is assumed as 10T/M^2
3. Catch pits have been proposed at suitable location / intervels
4. All fillet welds shall be 4mm.thick.
6. Temporary opening on outer wall of catch pit have been proposed till land is developed in plot areas
7. These openings to be closed after land is developed by Vendors.

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: DECEMBER, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

TYPICAL DETAILS OF DRAIN

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

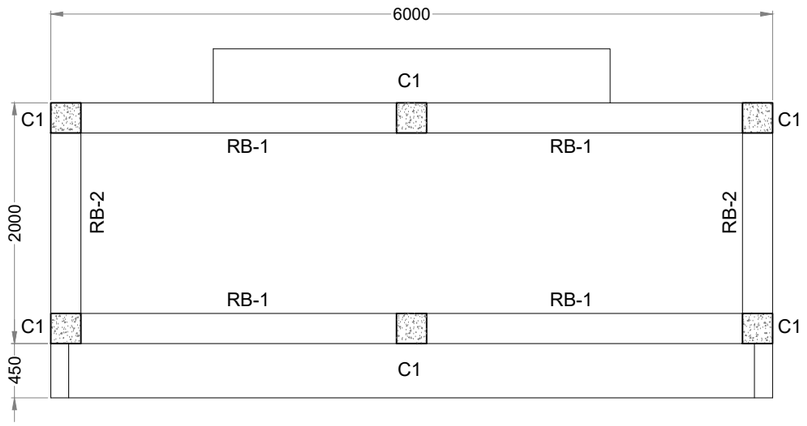
PACKAGE - IVB

CONSULTANT : CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092

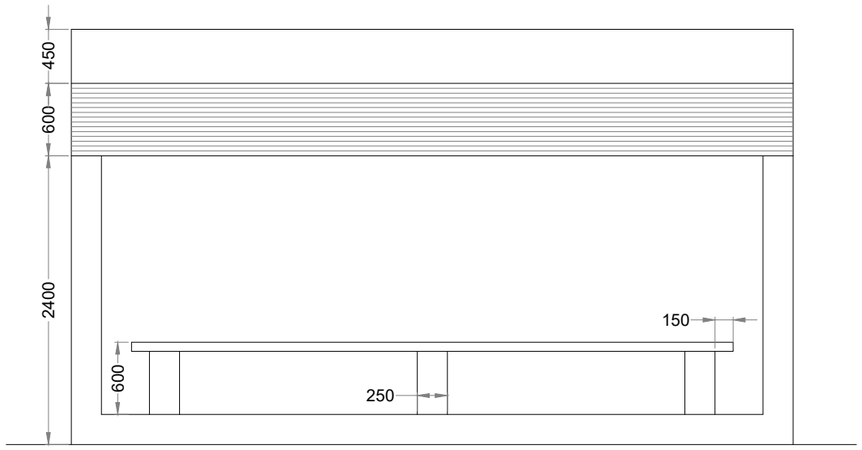
DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/MISC-7

REVISION MKD. - R0 | SHEET NO. - 01 OF 01

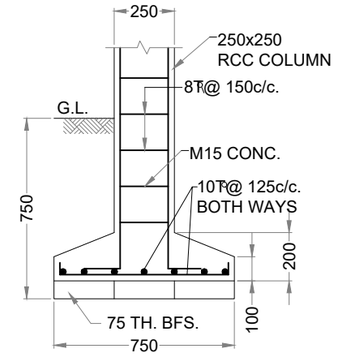
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS



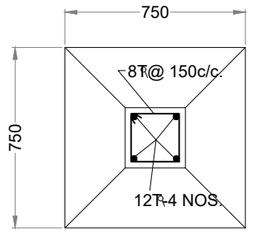
STRUCTURAL ARRANGEMENT PLAN



FRONT ELEVATION

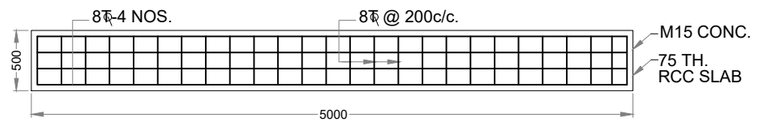


SECTION

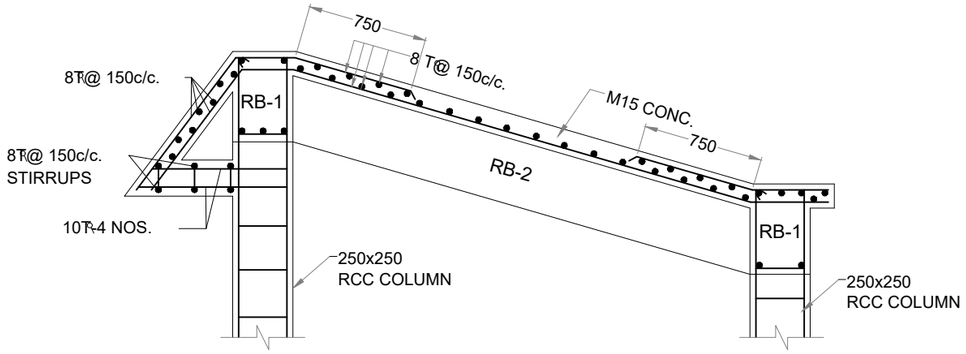


PLAN

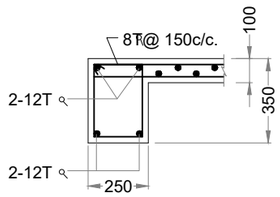
COLUMN FOUNDATION DETAILS



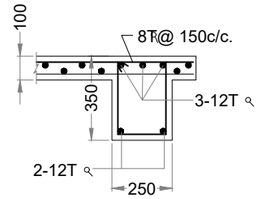
SEATING BENCH REINFORCEMENT DETAIL



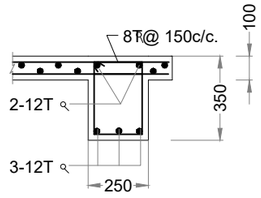
ROOF SLAB REINFORCEMENT DETAIL



2.0M BEAM SECTION
BEAM MKD. RB-2

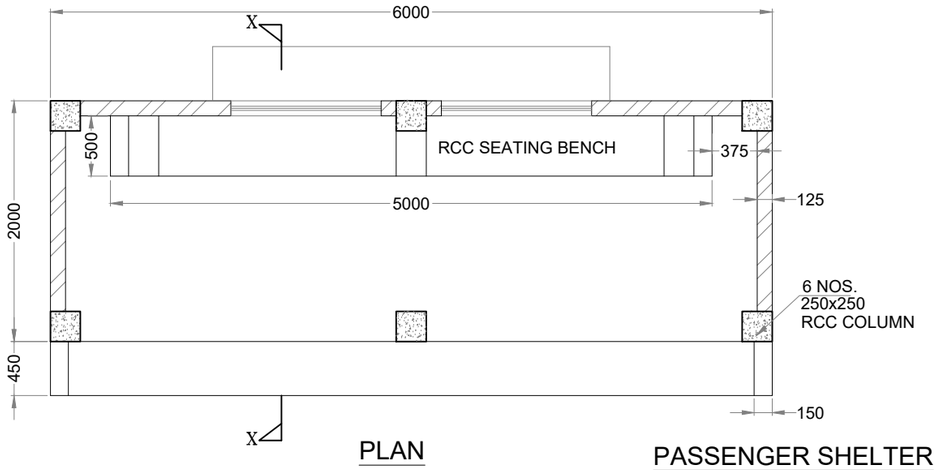


END SECTION



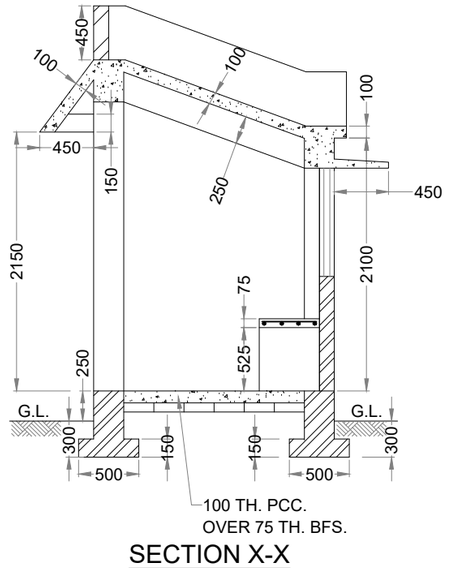
MID SPAN SECTION

3.0M BEAM SECTIONS
BEAM MKD. RB-1



PLAN

PASSENGER SHELTER



SECTION X-X

NOTE :

MATERIAL

a) CONCRETE : i) M-20 FOR FOUNDATION, COLUMNS, BEAMS & SLABS.
ii) M-15 OR 1:3:6 FOR LEVELING COURSE (P.C.C.)

b) STEEL : CONFORMING TO IS:1786

c) CONCRETE MORTAR : i) 1:4 (1 CEMENT : 4 SAND) FOR BRICK WORK & CELING PLASTER.
ii) 1:6 (1 CEMENT : 6 SAND) FOR WALL PLASTER.

ALL DIMENSIONS ARE IN MILIMITER.

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.
REVISIONS				

Scale :- N.T.S

DATE: DECEMBER, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street, New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

DETAILS OF TYPICAL PASSENGER SHELTER

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

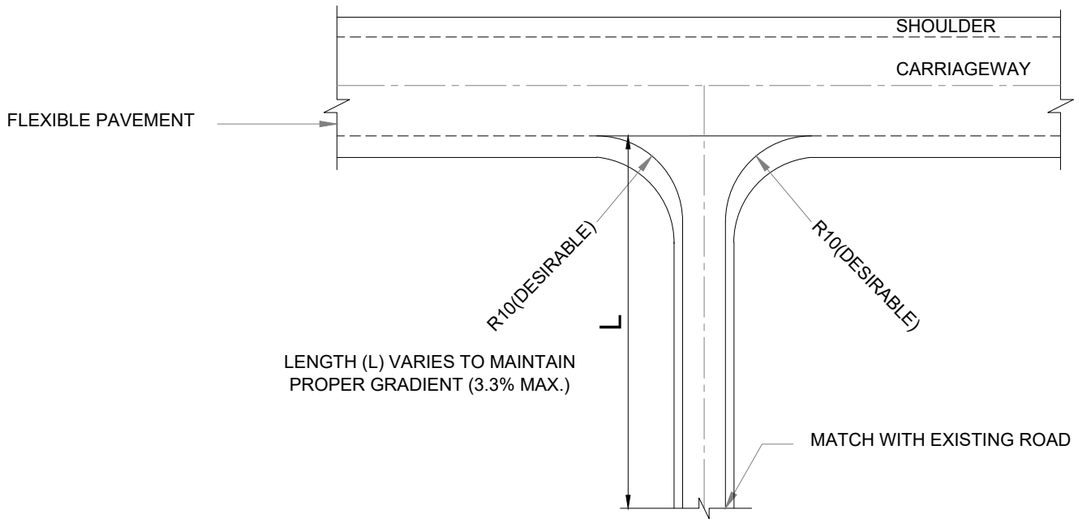
PACKAGE - IVB

CONSULTANT : CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092.

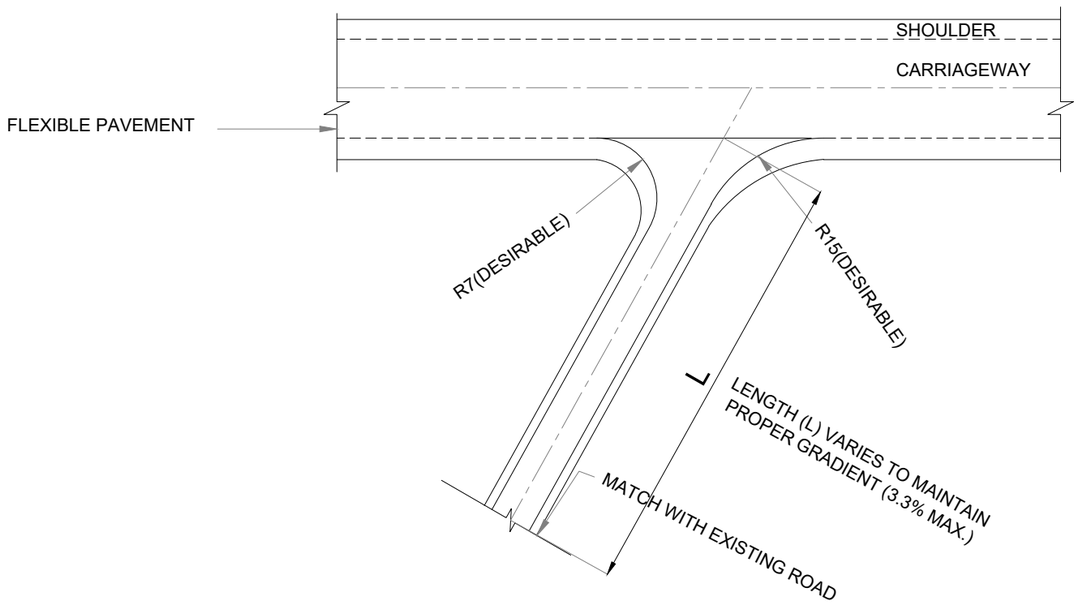
DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/MISC-8

REVISION MKD. - R0 | SHEET NO. - 01 OF 01

DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS



T - JUNCTION



Y - JUNCTION

NOTES :

1. ALL DIMENSION ARE IN METER UNLESS OTHERWISE MENTIONED
2. THE DESIGN IS SUITABLE FOR AN INTERSECTION OF A TWO LANE STATE HIGHWAY AND A SINGLE LANE OTHER DISTRICT ROAD / VILLAGE ROAD

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: DECEMBER, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

TYPICAL DETAILS OF MINOR INTERSECTION

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

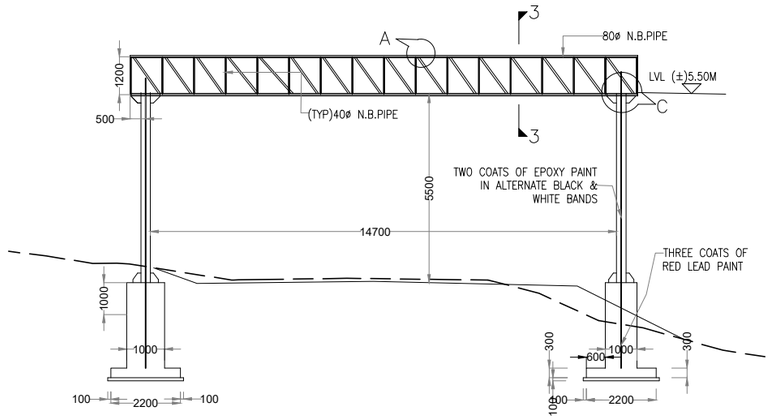
CONSULTANT : CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road,
Kolkata - 700092

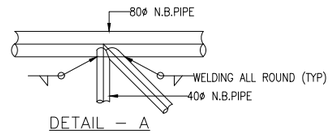
CETEST Engineering Consultants
An ISO 9001, 14001 & OHSAS 18001 Certified Company

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/MISC-9

REVISION MKD. - R0 | SHEET NO. - 01 OF 01

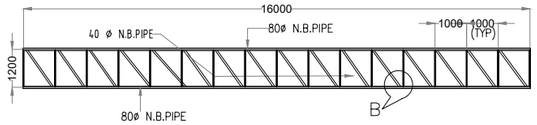
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS





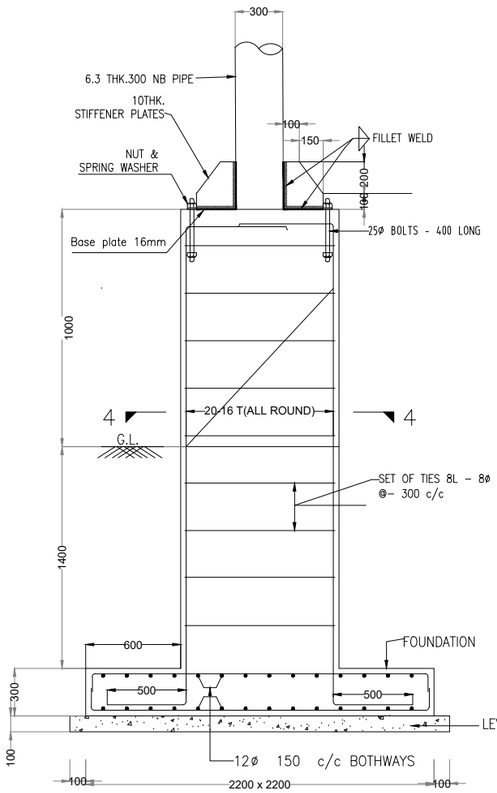
DETAIL – A

SCALE:– 1 : 12.5



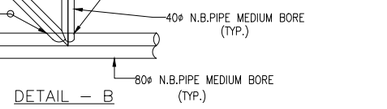
TOP AND BOTTOM PLAN

SCALE:– 1 : 125



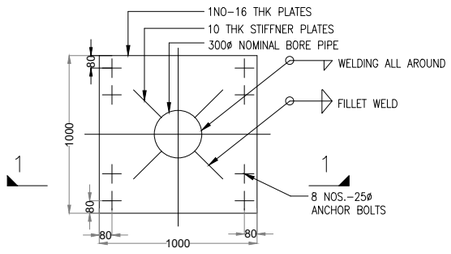
SECTION 1–1

SCALE:– 1 : 25



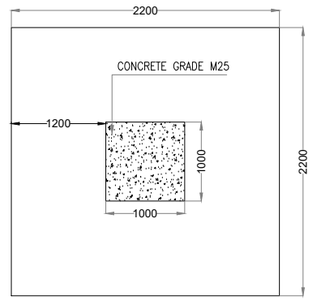
DETAIL – B

SCALE:– 1 : 12.5



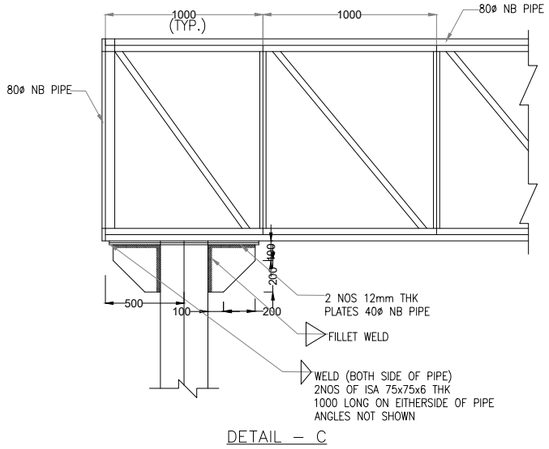
DETAILS OF COLUMN BASE P–1

SCALE:– 1 : 25



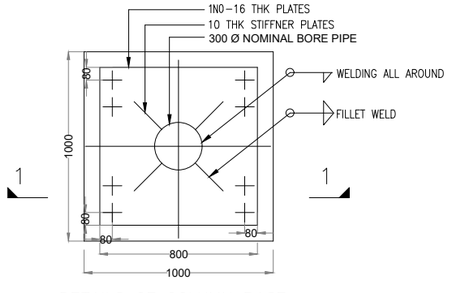
GA PLAN FOR COLUMN

SCALE:– 1 : 25



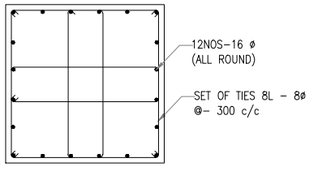
DETAIL – C

SCALE:– 1 : 25



DETAILS OF COLUMN BASE

SCALE:– 1 : 25



SECTION 4–4

SCALE:– 1 : 25

NOTES:

1. BESIDES THE ABOVE, STANDARDS AND SPECIFICATIONS MENTIONED IN IRC : SP : 84-2014 SHALL BE FOLLOWED STRICTLY WHENEVER APPLICABLE.
2. ALL DIMENSIONS ARE IN MILIMETRES UNLESS OTHERWISE MENTIONED.
3. GRADE OF CONCRETE IN LEVELLING COURSE PCC M15
4. GRADE OF CONCRETE IN FOUNDATION RCC M25
5. 80 ø AND 40 ø NB PIPES ARE HEAVY
6. OVERHEAD CLEARANCE SHALL BE 5.5M

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: DECEMBER, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
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TYPICAL DETAILS OF GANTRY GIRDER FOR OVERHEAD SIGNS

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

PACKAGE - IVB

CONSULTANT : CETEST Engineering Consultants, An ISO 9001, 14001 & OHSAS 18001 Certified Company
CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092.

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/MISC-10

REVISION MKD. - R0 | SHEET NO. - 01 OF 01

DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

STRUCTURAL DRAWING

PROPOSED BRIDGES

(PACKAGE - IVB)

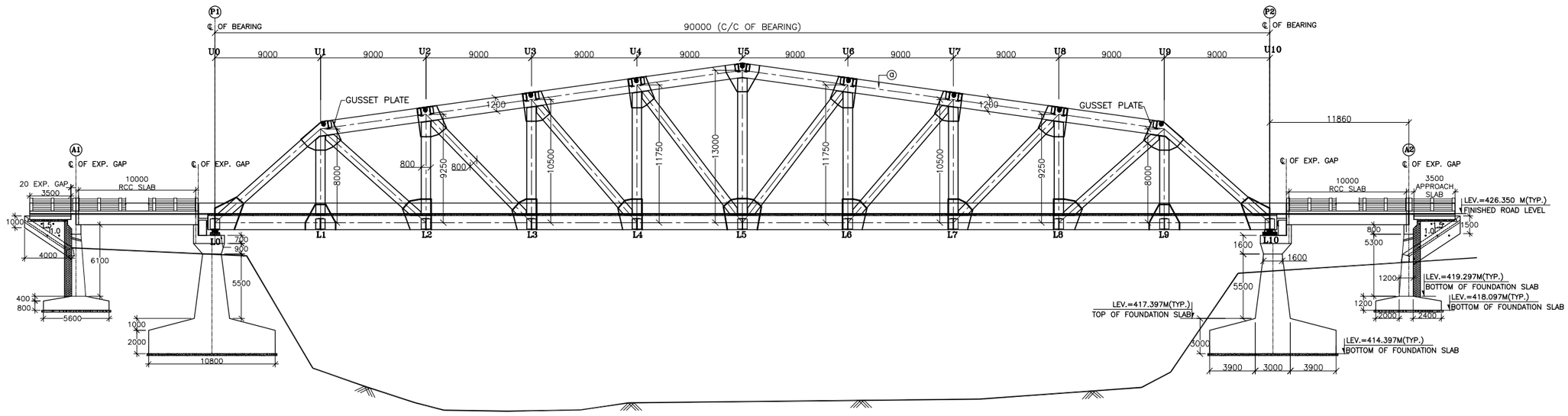
CONTENT

(PROPOSED BRIDGES)

(ROAD NAME: CHURACHANDPUR-TUIVAI)

PKG-IVB

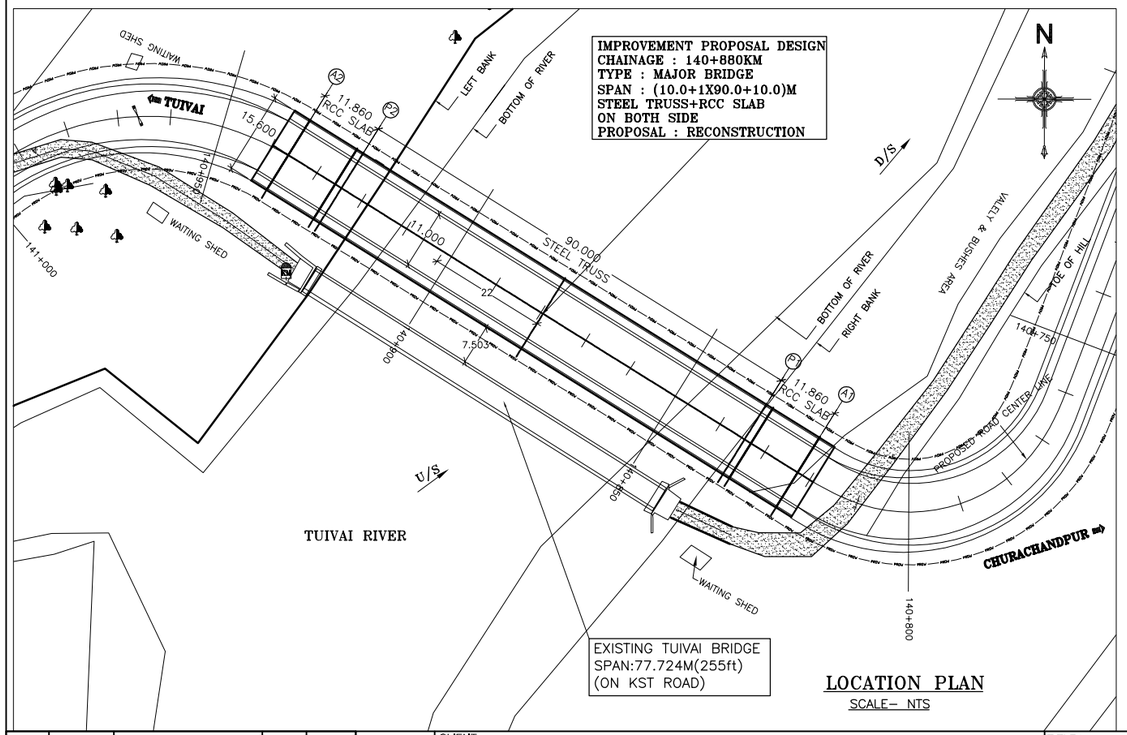
SL. NO.	DESIGN CHAINAGE	STR. NO.	DESCRIPTION	DRAWING NO.	NO. OF SHEETS
01.	140.880KM	141/5	(1 X 10.0M) R.C.C SLAB+(1 X 90.0M) TRUSS+(1 X 10.0M) R.C.C SLAB :-		
			GENERAL ARRANGEMENT DRAWING	CET/BDG/2017/4047/NH-102B/C-T/FDPR/PKG-IVB/MJ/(STR-141/5)/GA	05
			MISCELLANEOUS DRAWING	CET/BDG/2017/4047/NH-102B/C-T/FDPR/PKG-IVB/MJ/(STR-141/5)/MISC	01



EGL IN METRE	423.125	422.746	413.159	411.537	410.205	409.579	409.4976	409.601	410.204	410.525	411.525	421.262	422.589
OFFSET IN METRE	30.596	22.275	16.640	11.970	7.858	5.420	0.000	−6.225	−10.286	−40.277	−54.090	−62.328	−82.701

SECTIONAL ELEVATION OF BRIDGE

SCALE 1:275



LOCATION PLAN

SCALE− NTS

GENERAL NOTES :

A. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN M . UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.

B. MATERIALS SPECIFICATIONS :

(I) CONCRETE :

1. GRADE OF CONCRETE USED :−
   a) SUPERSTRUCTURE = M30,
   b) SUB STRUCTURE = M30,
   c) FIN WALL = M30,
   d) FOUNDATION SLAB = M30,
   e) APPROACH SLAB (FOR 10.0M SLAB) = M30,
   f) P.C.C. BELOW APPROACH SLAB = M15,
   g) R.C.C. RAILING & KERB = M30,
   h) CRASH BARRIER = M40
2. CONCRETE SHALL BE OF DESIGN MIX AND SHALL HAVE TO ACHIEVE MINIMUM 28 DAYS CHARACTERISTICS STRENGTH ON 150MM CUBES FOR MODERATE EXPOSURE.
3. 33/43/53 GRADE ORDINARY PORTLAND CEMENT CONFORMING TO IS : 269, IS : 8112, IS : 12269 OR PORTLAND SLAG CEMENT CONFORMING TO IS. 455 CAPABLE OF ACHIEVING THE REQUIRED DESIGN CONCRETE STRENGTH SHALL ONLY BE USED.
4. TO IMPROVE WORKABILITY OF CONCRETE, ADMIXTURES CONFORMING TO IS:9103 MAY BE USED SUBJECT TO SATISFACTORY PROVEN USE.
5. THE MINIMUM CEMENT CONTENT IN CONCRETE SHALL BE AS PER TABLE 14.2, IRC −112−2011
6. MAX. WATER CEMENT RATIO SHALL BE AS PER TABLE−14.2, IRC:112−2011.

(II) REINFORCEMENT :

ALL REINFORCING STEEL SHALL BE OF HIGH YIELD STRENGTH DEFORMED BARS (GRADE DESIGNATION Fe 500) CONFORMING TO IS : 1786 (EXCEPT FOR MESH REINFORCEMENT WHICH SHALL BE MS BARS GRADE. DESIGNATION Fe 250 CONFORMING TO IS:432 PART−I MILD STEEL)

(III) WATER :

WATER TO BE USED IN CONCRETING AND CURING SHALL CONFORM TO IRC : 112 − 2011.

(IV) EXPANSION JOINTS :

THE EXPANSION JOINTS SHOULD BE STRIP SEAL TYPE.

(V) FILTER MATERIAL BEHIND ABUTMENT AND FIN WALL SHALL CONFORM TO CLAUSE 2504.2.2 OF MoRTH SPECIFICATIONS TO A THICKNESS OF NOT LESS THAN 600mm. WITH SMALLER SIZE TOWARDS THE SOIL AND BIGGER SIZE TOWARDS THE WALL TO THE FULL HEIGHT.

(VI) PROPERTIES OF BACKFILL SOIL γ=2.0t/m³ , ø=30°.

C. WORKMANSHIP/DETAILING :

1. MINIMUM CLEAR COVER :
   a) SUPERSTRUCTURE = 40MM
   b) ABUTMENT & ABUTMENT CAP, PIER & PIER CAP = 50MM
   c) FIN WALL = 50MM
   d) FOUNDATION SLAB = 75MM
2. DESIGN LOAD :
   a) CLASS A THREE LANES OR CLASS 70R TRACKED/WHEELED ONE LANE AND CLASS A ONE LANE OR IRC CLASS SV LOADING WHICHEVER RPRODUCES WORST EFFECT IS CONSIDERED FOR DESIGN.
   b) THE BRIDGE IS IN SEISMIC ZONE−V.
   c) SEISMIC LOADING :− AS PER CL. NO. 219 OF IRC:6−2017.
   d) FOOTPATH LOADING :− AS PER CL.NO. 206.1 OF IRC:6−2017
3. BENDING OF REINFORCEMENT BARS SHALL BE AS PER IS:2502.
4. LAP LENGTH & DEVELOPMENT LENGTH (Ld) OF REINFORCING BARS SHALL BE DONE IN ACCORDANCE WITH RELEVANT CLAUSE 15.2.5.1 & 15.2.3.3 OF IRC : 112−2011.
5. PROPER COMPACTION OF CONCRETE SHALL BE ENSURED BY USE OF FORM VIBRATOR OR NEEDLE VIBRATORS. USE OF FULL WIDTH SCREED VIBRATORS FOR COMPACTION OF CONCRETE IN DECK SLAB SHALL BE ENSURED.
6. SHUTTERING PLATES SHALL SUITABLY BE STIFFENED TO ENABLE THE COMPACTION BY FORM VIBRATORS.
7. SHARP EDGES OF CONCRETE SHALL BE CHAMFERED.
8. THE WEEP HOLES SHALL BE WITH 100MM DIA AC PIPE IN 1:20 SLOPE @ 1M C/C STAGGERED HORIZONTALLY & VERTICALLY AT ABUTMENT & FIN WALLS.
9. CONSTRUCTION JOINT SHOULD BE PROVIDED WHERE MOMENT EQUAL TO ZERO.
10. IN CASE ANY LOOSE POCKET IS OBSERVED AT THE FOUNDING LEVEL, THEN THE SAME SHOULD BE EXCAVATED OUT AND THE SAME SHALL BE FILLED UP WITH PCC UPTO THE FOUNDING LEVEL.
11. MAXIMUM BASE PRESSURE OF SOIL
    AT ABUTMENT = 29.2 TON/SQ.M
    AT PIER = 42.0 TON/SQ.M
12. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DWG. NO.:
    CET/BDG/2017/4047/NH−102B/C−T/FDPR/PKG−IVB/MJ/(STR−141/5)/GA (SHEET NO. 02 TO 05)
    CET/BDG/2017/4047/NH−102B/C−T/FDPR/PKG−IVB/MJ/(STR−141/5)/MISC (SHEET NO. 01)

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.
R0				

REVISIONS

SCALE: AS SHOWN

DATE: DEC. 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building, 3rd Floor, 4 Parliament Street, New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF **CHURACHADPUR - TUIVAI ROAD SECTION** (LENGTH - 162 KM) ON **NH- 102B (MANIPUR)** ON EPC MODE **IN THE STATE OF MANIPUR**

TITLE : GENERAL ARRANGEMENT DRAWING (10.0M+90.0M+10.0M) STEEL TRUSS + RCC SLAB (AT CHAINAGE - 140.880 KM)
PACKAGE :- NHIDCL/DPR/CT-IJ-TP/MANIPUR/2017

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT (PKG- IVB)

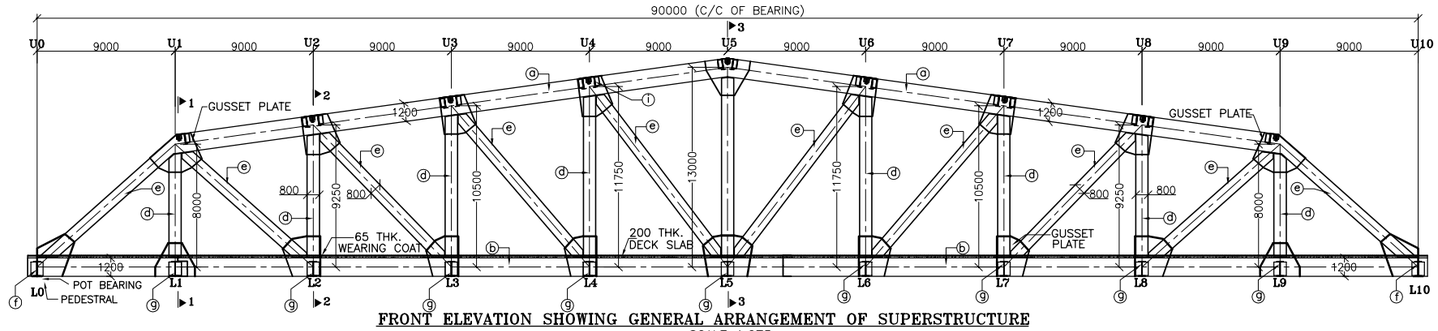
CONSULTANT : CETEST Engineering Consultants (An ISO 9001, 14001 & OHSAS 18001 Certified Company)

C.E. TESTING COMPANY PVT. LTD.
124-A, N.S.C. BOSE ROAD
KOLKATA - 700092.

DRG. NO. : CET/BDG/2017/4047/NH -102B/C-T/FDPR/ PKG-IVB/MJ/(STR-141/5)/GA

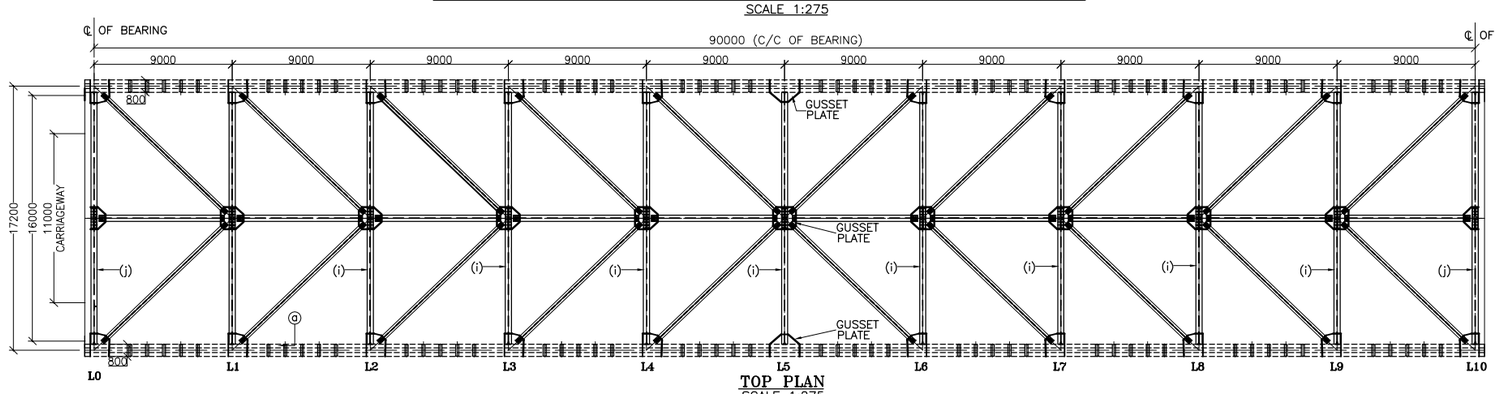
REVISION MKD.- R0 | SHEET NO.- 1 OF 5

DRAWN BY	DESIGN BY	CHECKED BY	ISSUED BY
S.CHATTERJEE	S.ALI	A. DEY	A.K.DAS (TEAM LEADER)



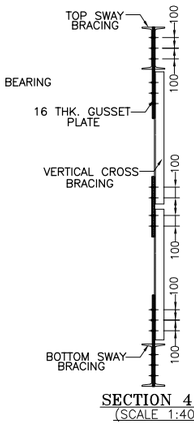
FRONT ELEVATION SHOWING GENERAL ARRANGEMENT OF SUPERSTRUCTURE

SCALE 1:275



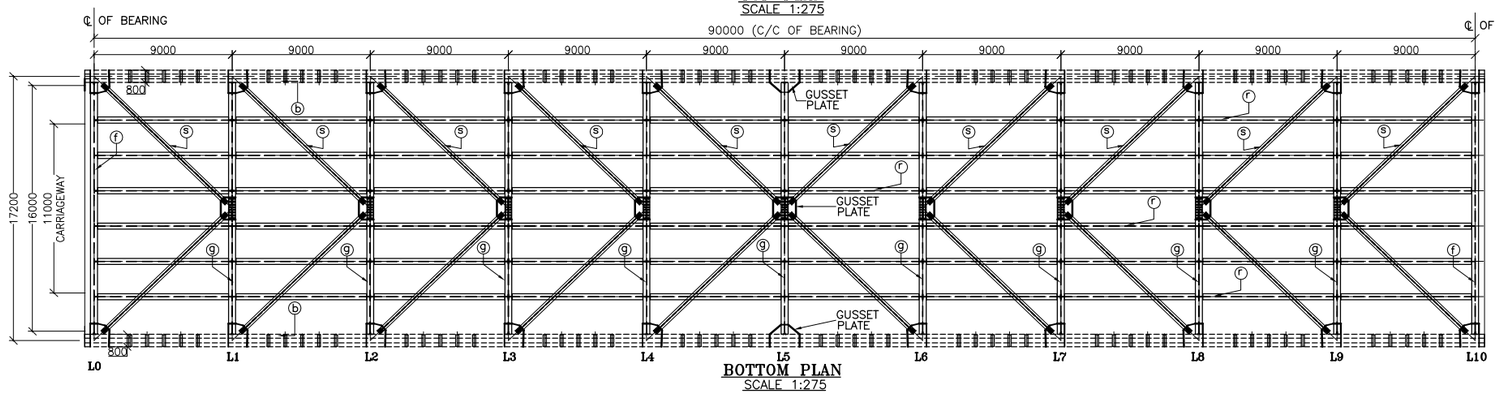
TOP PLAN

SCALE 1:275



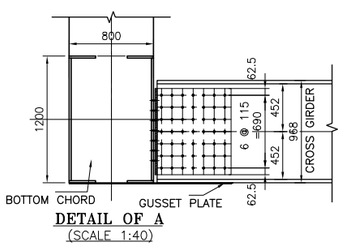
SECTION 4-4

(SCALE 1:40)



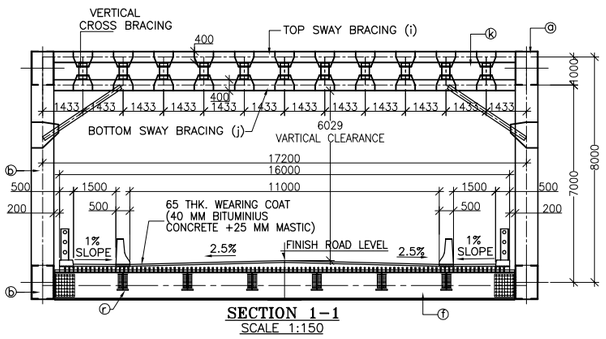
BOTTOM PLAN

SCALE 1:275



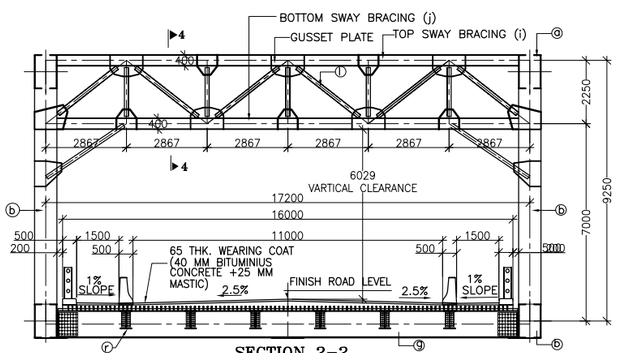
DETAIL OF A

(SCALE 1:40)



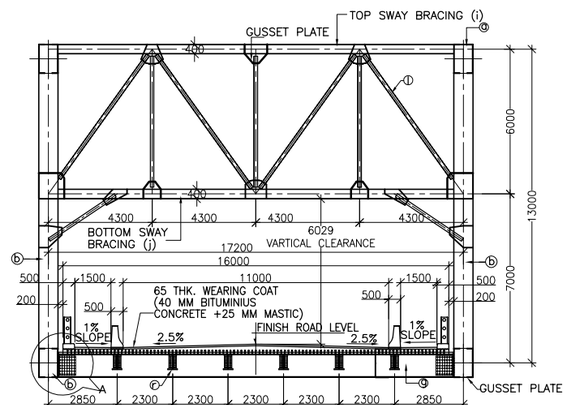
SECTION 1-1

SCALE 1:150



SECTION 2-2

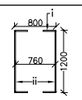
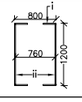
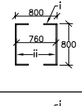
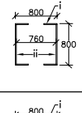
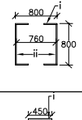
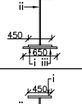
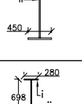
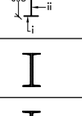
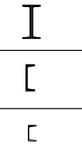
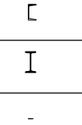
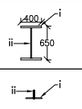
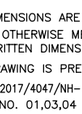
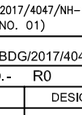
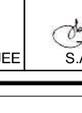
SCALE 1:150



SECTION 3-3

SCALE 1:175

SCHEDULE OF MEMBERS

SL. NO.	MKD.	MEMBER NAME	PROFILE	MEMBER SIZE	MATERIAL SPECIFICATION
1.	a	TOP CHORD		(i) 250X20 THK. PL. (ii) 1160X20 THK. PL.	(i) FE 490 BO FOR PLATE CONFORMING TO IS:2062-2011
2.	b	BOTTOM CHORD		(i) 250X20 THK. PL. (ii) 1160X20 THK. PL.	(i) FE 490 BO FOR PLATE CONFORMING TO IS:2062-2011
3.	c	END VERTICAL		(i) 250X20 THK. PL. (ii) 760X20 THK. PL.	(i) FE 490 BO FOR PLATE CONFORMING TO IS:2062-2011
4.	d	INTERMEDIATE VERTICAL		(i) 250X20 THK. PL. (ii) 760X20 THK. PL.	(i) FE 490 BO FOR PLATE CONFORMING TO IS:2062-2011
5.	e	DIAGONAL		(i) 250X20 THK. PL. (ii) 760X20 THK. PL.	(i) FE 490 BO FOR PLATE CONFORMING TO IS:2062-2011
6.	f	END CROSS GIDER		(i)450X32 THK. PL. (ii) 904X20 THK. PL. (iii) 650x32 THK. PL.	(i) FE 490 BO FOR PLATE CONFORMING TO IS:2062-2011
7	g	INTERMEDIATE CROSS GIDER		(i)450X32 THK. PL. (ii) 904X20 THK. PL.	(i) FE 490 BO FOR PLATE CONFORMING TO IS:2062-2011
8	h	TOP CROSS BRACING		(i) 280X16 THK. PL. (ii) 666X12 THK. PL.	(i) FE 490 BO FOR PLATE CONFORMING TO IS:2062-2011
9.	i	TOP SWAY BRACING		2-ISMC 400	(i) FE 410 A FOR ROLLED SECTION CONFORMING TO IS:2062-2011
10.	j	BOTTOM SWAY BRACING		2-ISMC 400	(i) FE 410 A FOR ROLLED SECTION CONFORMING TO IS:2062-2011
11.	k	END VERTICAL CROSS BRACING		ISMC-300	(i) FE 410 A FOR ROLLED SECTION CONFORMING TO IS:2062-2011
12.	l	INTERMEDIATE VERTICAL CROSS BRACING		ISMC-150	(i) FE 410 A FOR ROLLED SECTION CONFORMING TO IS:2062-2011
13.	m	BRACKET BEAM		ISMB 200	(i) FE 410 A FOR ROLLED SECTION CONFORMING TO IS:2062-2011
14.	n	CHQD. PLATE	-	8mm THK.	(i) CHQD. PLATE CONFORMING TO IS:1730-1961
15.	r	STRINGER		(i) 400X32 THK. PL. (ii) 586X20 THK. PL.	(i) FE 490 BO FOR PLATE CONFORMING TO IS:2062-2011
15.	s	DIAGONAL STRINGER		(i) ISA-150X150X12 (ii) 170X10 THK. PL.	ROLLED STEEL EQUAL ANGEL BACK TO BACK CONFORMING TO IS:SP:6.1-1964
16.	q	HANDRAIL		-	(i) FE 410 A FOR ROLLED SECTION CONFORMING TO IS:2062-2011 (ii) TOP RAIL CONFORMING TO IS:1161

NOTES:-

1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN M. UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
2. THIS DRAWING IS PREPARED IN CONNECTION WITH :
   CET/BDG/2017/4047/NH-102B/C-T/FDPR/PKG-IVB/MJ/(STR-141/5)/GA (SHEET NO. 01,03,04 & 05)
   CET/BDG/2017/4047/NH-102B/C-T/FDPR/PKG-IVB/MJ/(STR-141/5)/MISC (SHEET NO. 01)

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.
R0				

REVISIONS

SCALE: AS SHOWN

DATE: DEC, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building, 3rd Floor, 4 Parliament Street, New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF **CHURACHADPUR - TUIVAI ROAD SECTION** (LENGTH - 162 KM) ON **NH- 102B (MANIPUR)** ON EPC MODE **IN THE STATE OF MANIPUR**

TITLE : DETAILS OF SUPERSTRUCTURE

PACKAGE :- NHIDCL/DPR/CT-IJ-TP/MANIPUR/2017

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT (PKG- IVB)

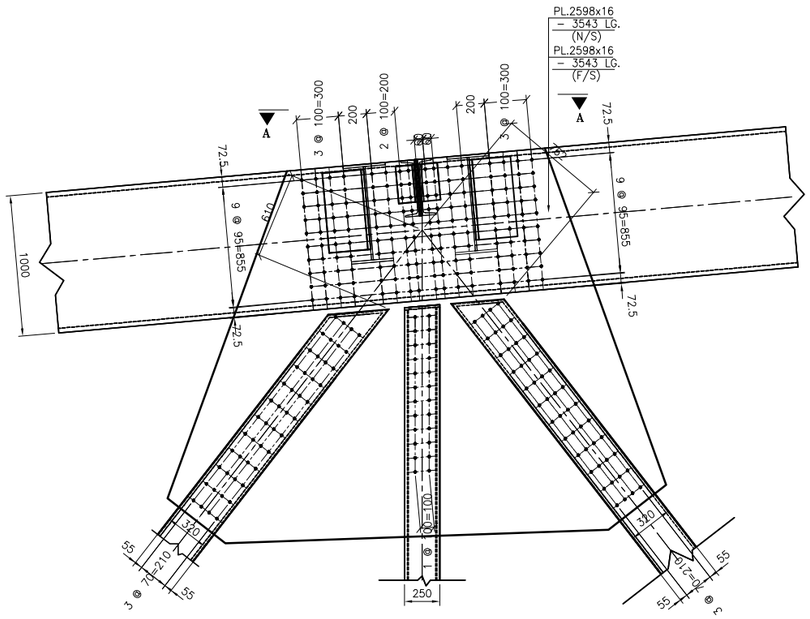
CONSULTANT : CETEST Engineering Consultants
An ISO 9001, 14001 & OHSAS 18001 Certified Company

C.E. TESTING COMPANY PVT. LTD.
124-A, N.S.C. BOSE ROAD
KOLKATA - 700092.

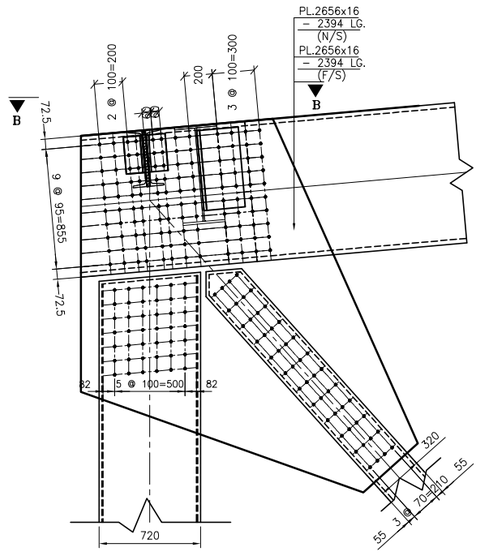
DRG. NO. : CET/BDG/2017/4047/NH -102B/C-T/FDPR/ PKG-IVB/MJ/(STR-141/5)/GA

REVISION MKD.- R0 | SHEET NO.- 2 OF 5

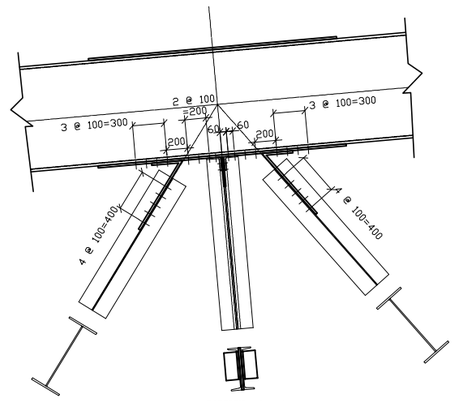
DRAWN BY	DESIGN BY	CHECKED BY	ISSUED BY
S.CHATTERJEE	S.ALI	A. DEY	A.K.DAS (TEAM LEADER)



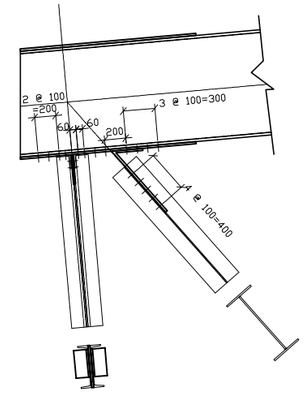
1–NO.EACH TOP CHORD JOINT REQD.
AS DRN. MKD. –U2'
1–NO.EACH TOP CHORD JOINT REQD.
OPP.HAND MKD. –U2
(SCALE 1:30)



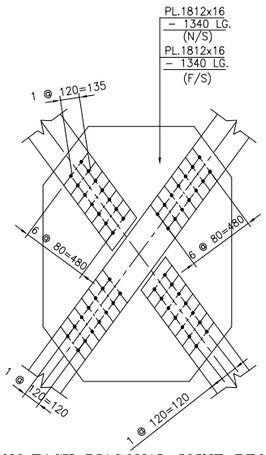
1–NO.EACH TOP CHORD JOINT REQD.
AS DRN. MKD. –U2',U10'
1–NO.EACH TOP CHORD JOINT REQD.
OPP.HAND MKD. –U2,U10
(SCALE 1:30)



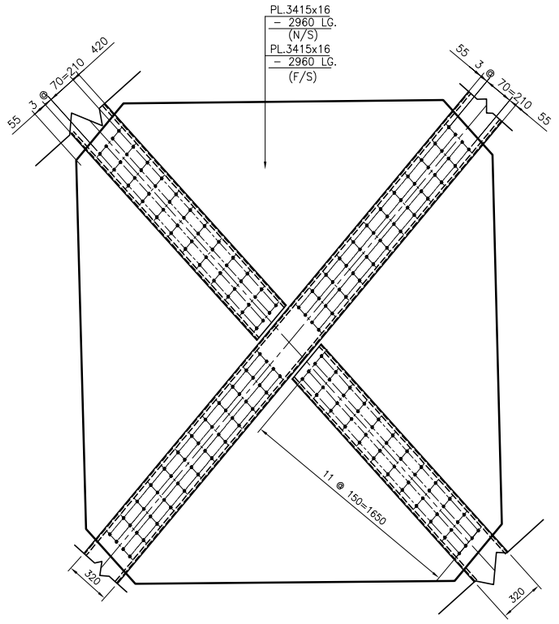
VIEW A–A
(SCALE 1:40)



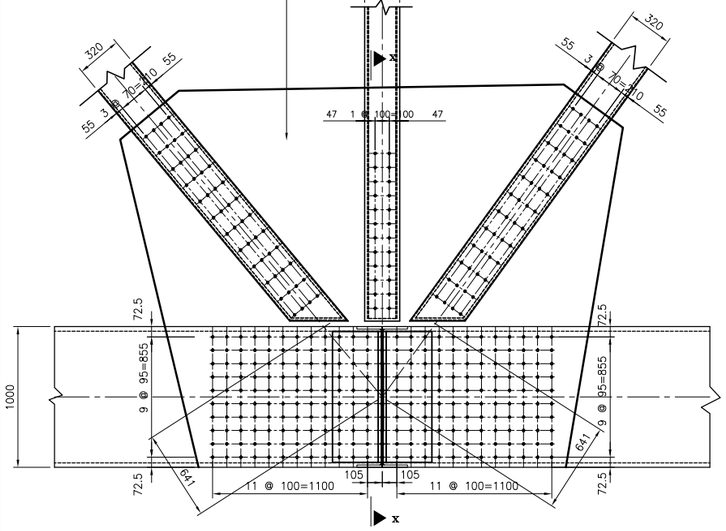
VIEW B–B
(SCALE 1:40)



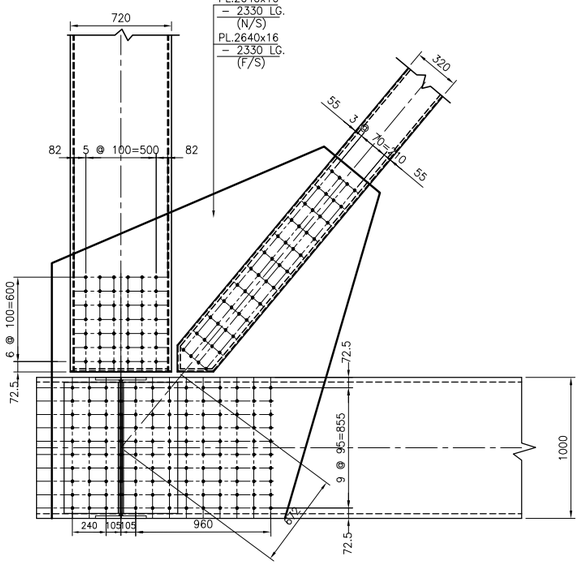
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AS DRN. MKD. U0–U1 & U0'–U1'
(SCALE 1:30)



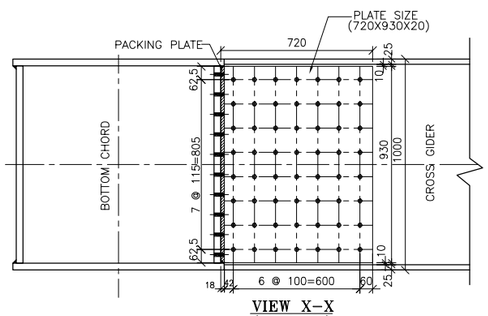
1–NO.EACH DIAGONAL JOINT REQD.
AS DRN. MKD. –L0 & L1
1–NO.EACH DIAGONAL JOINT REQD.
AS DRN. MKD. –L0' & L1'
(SCALE 1:30)



1–NO.EACH BOTTOM CHORD JOINT REQD.
AS DRN. MKD. –L2'
1–NO.EACH BOTTOM CHORD JOINT REQD.
OPP.HAND MKD. –L2
(SCALE 1:30)



1–NO.EACH BOTTOM CHORD JOINT REQD.
AS DRN. MKD. –L0',L10'
1–NO.EACH BOTTOM CHORD JOINT REQD.
OPP.HAND MKD. –L0,L10
(SCALE 1:30)



VIEW X–X
(SCALE 1:20)

NOTES:–

1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN M. UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
2. THIS DRAWING IS PREPARED IN CONNECTION WITH :
   CET/BDG/2017/4047/NH–102B/C–T/FDPR/PKG–IVB/MJ/(STR–141/5)/GA (SHEET NO. 01,02,04 & 05)
   CET/BDG/2017/4047/NH–102B/C–T/FDPR/PKG–IVB/MJ/(STR–141/5)/MISC (SHEET NO. 01)

					SCALE: AS SHOWN
R0					DATE: DEC, 2019
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.	
REVISIONS					

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building, 3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF **CHURACHADPUR - TUIVAI ROAD SECTION** (LENGTH - 162 KM) ON **NH- 102B (MANIPUR)** ON EPC MODE **IN THE STATE OF MANIPUR**

TITLE : DETAILS OF JOINT

PACKAGE :- NHIDCL/DPR/CT-IJ-TP/MANIPUR/2017

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT
(PKG- IVB)

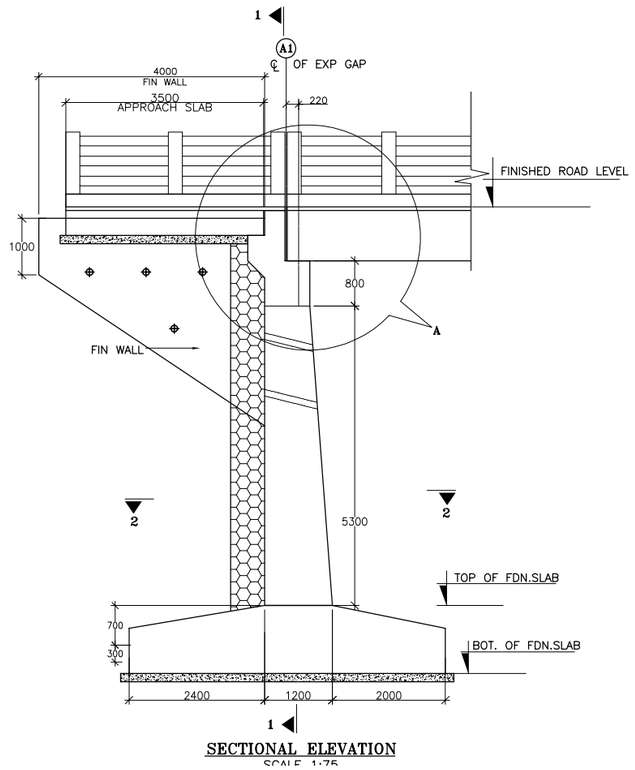
CONSULTANT :
CETEST Engineering Consultants
An ISO 9001, 14001 & OHSAS 18001 Certified Company

C.E. TESTING COMPANY PVT. LTD.
124-A, N.S.C. BOSE ROAD
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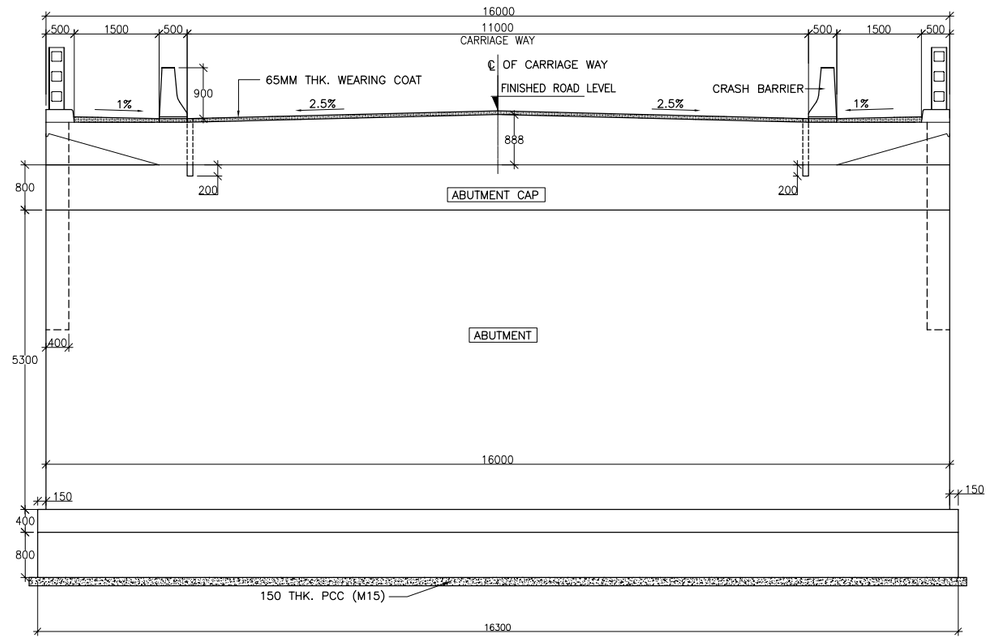
DRG. NO. : CET/BDG/2017/4047/NH -102B/C-T/FDPR/ PKG-IVB/MJ/(STR-141/5)/GA

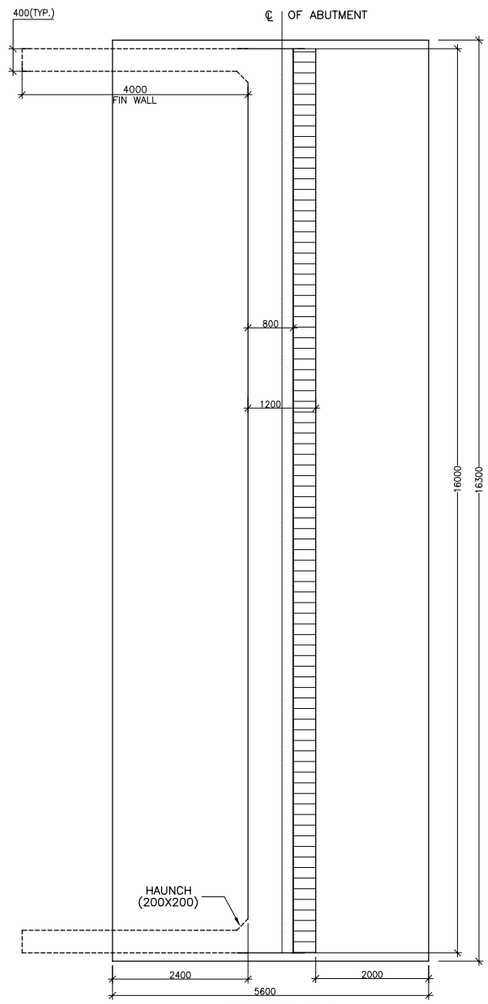
REVISION MKD.- R0 | SHEET NO.- 3 OF 5

DRAWN BY	DESIGN BY	CHECKED BY	ISSUED BY
S.CHATTERJEE	S.ALI	A. DEY	A.K.DAS (TEAM LEADER)

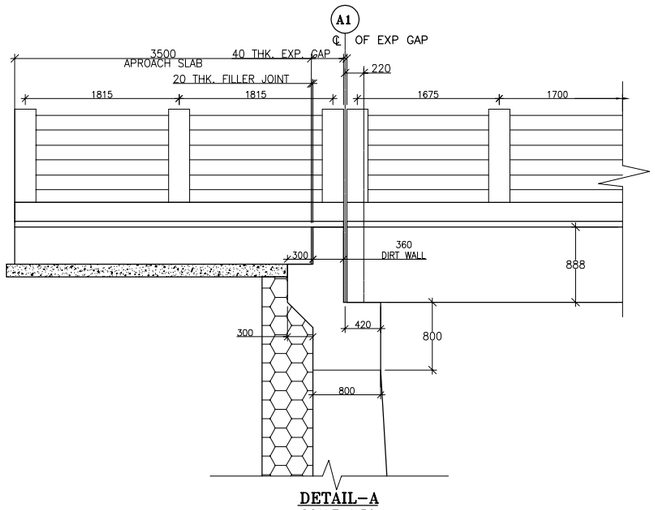


SECTIONAL ELEVATION
SCALE 1:75

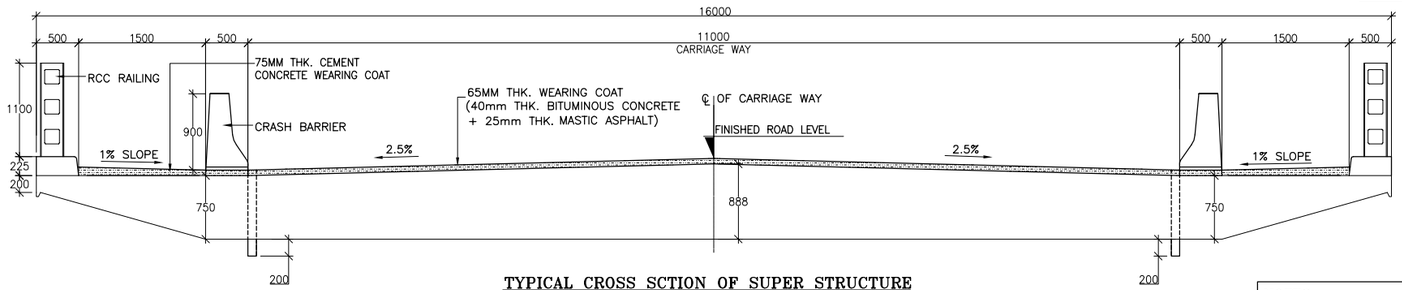




SECTION 2-2
SCALE 1:75



DETAIL-A
SCALE 1:50



TYPICAL CROSS SCTION OF SUPER STRUCTURE
SCALE 1:50

NOTES:-

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   CET/BDG/2017/4047/NH-102B/C-T/FDPR/PKG-IVB/MJ/(STR-141/5)/GA
   (SHEET NO. 01,02,03 & 05)
   CET/BDG/2017/4047/NH-102B/C-T/FDPR/PKG-IVB/MJ/(STR-141/5)/MISC
   (SHEET NO. 01)

					SCALE: AS SHOWN
R0					DATE: DEC. 2019
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.	
REVISIONS					

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building, 3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF **CHURACHADPUR - TUIVAI ROAD SECTION** (LENGTH - 162 KM) ON **NH- 102B (MANIPUR)** ON EPC MODE **IN THE STATE OF MANIPUR**

TITLE : DETAILS OF ABUTMENT

PACKAGE :- NHIDCL/DPR/CT-IJ-TP/MANIPUR/2017

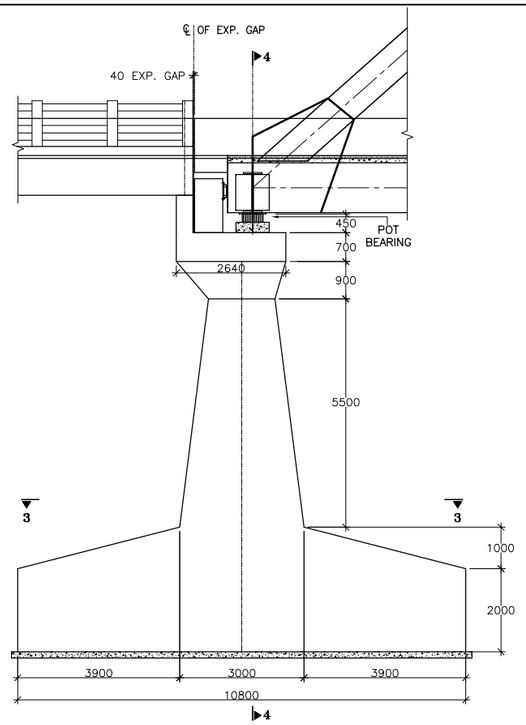
SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT
(PKG- IVB)

CONSULTANT :
CETEST Engineering Consultants
An ISO 9001, 14001 & OHSAS 18001 Certified Company

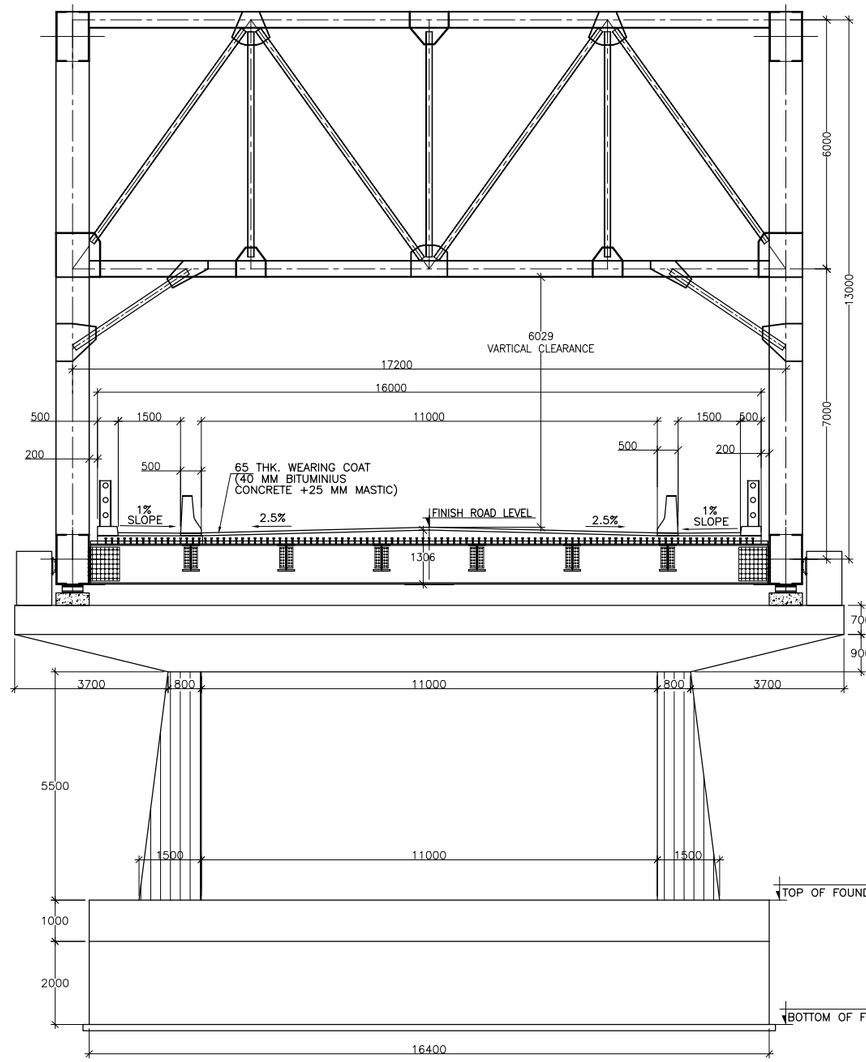
C.E. TESTING COMPANY PVT. LTD.
124-A, N.S.C. BOSE ROAD
KOLKATA - 700092.

DRG. NO. : CET/BDG/2017/4047/NH -102B/C-T/FDPR/ PKG-IVB/MJ/(STR-141/5)/GA
REVISION MKD. - R0
SHEET NO. - 4 OF 5

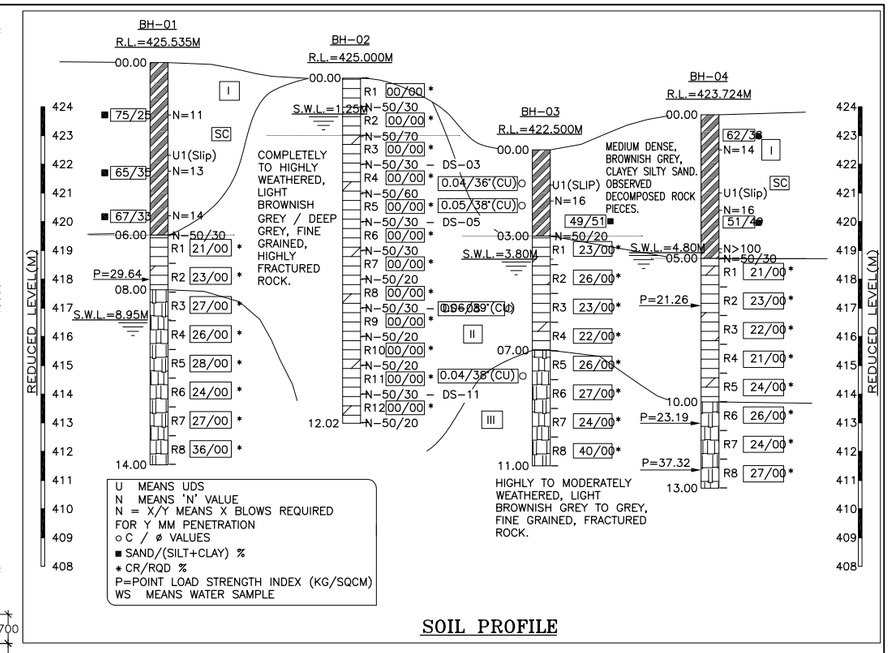
DRAWN BY	DESIGN BY	CHECKED BY	ISSUED BY
S.CHATTERJEE	S.ALI	A. DEY	A.K.DAS (TEAM LEADER)



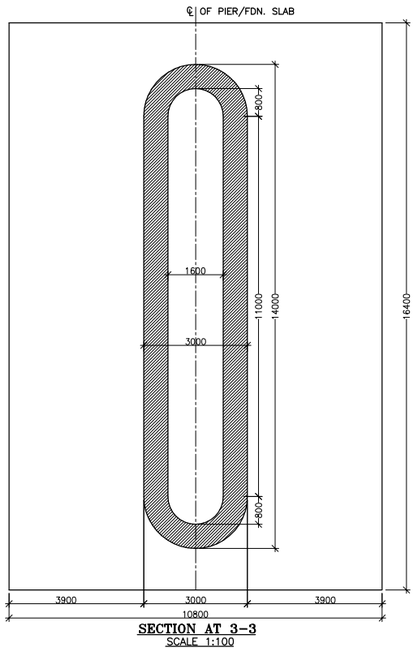
DETAILS OF PIER
SCALE 1:100



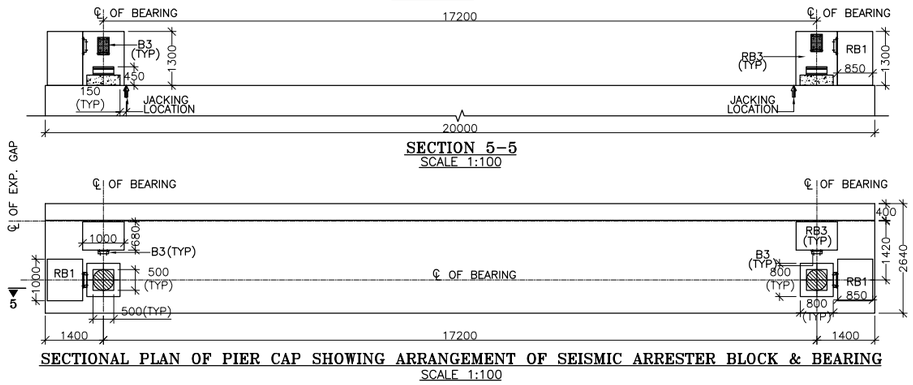
SECTION AT 4-4
SCALE 1:100



SOIL PROFILE



SECTION AT 3-3
SCALE 1:100



SECTION 5-5
SCALE 1:100

SECTIONAL PLAN OF PIER CAP SHOWING ARRANGEMENT OF SEISMIC ARRESTER BLOCK & BEARING
SCALE 1:100

NOTES:-

1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN M. UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
2. THIS DRAWING IS PREPARED IN CONNECTION WITH :
   CET/BDG/2017/4047/NH-102B/C-T/FDPR/PKG-IVB/MJ/(STR-141/5)/GA (SHEET NO. 01 TO 04)
   CET/BDG/2017/4047/NH-102B/C-T/FDPR/PKG-IVB/MJ/(STR-141/5)/MISC (SHEET NO. 01)

					SCALE: AS SHOWN
R0					DATE: DEC, 2019
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.	
REVISIONS					

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building, 3rd Floor, 4 Parliament Street, New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF **CHURACHADPUR - TUIVAI ROAD SECTION** (LENGTH - 162 KM) ON **NH- 102B (MANIPUR)** ON EPC MODE **IN THE STATE OF MANIPUR**

TITLE : DETAILS OF PIER

PACKAGE :- NHIDCL/DPR/CT-IJ-TP/MANIPUR/2017

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT (PKG- IVB)

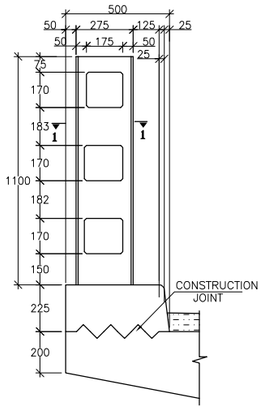
CONSULTANT : CETEST Engineering Consultants (An ISO 9001, 14001 & OHSAS 18001 Certified Company)

C.E. TESTING COMPANY PVT. LTD.
124-A, N.S.C. BOSE ROAD
KOLKATA - 700092.

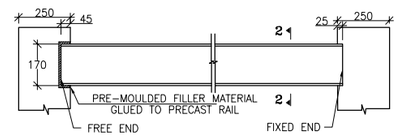
DRG. NO. : CET/BDG/2017/4047/NH -102B/C-T/FDPR/ PKG-IVB/MJ/(STR-141/5)/GA

REVISION MKD. - R0 | SHEET NO. - 5 OF 5

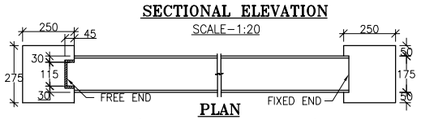
DRAWN BY	DESIGN BY	CHECKED BY	ISSUED BY
S.CHATTERJEE	S.ALI	A. DEY	A.K.DAS (TEAM LEADER)



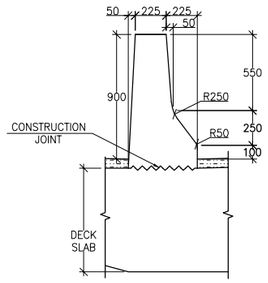
SECTION THROUGH POST
(FOR GENERAL ARRANGEMENT)
SCALE – 1:20



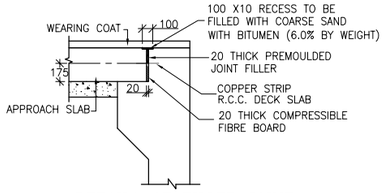
SECTIONAL ELEVATION
SCALE – 1:20



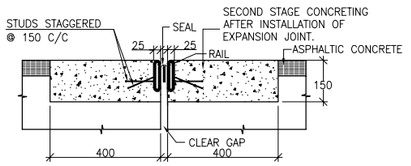
PLAN
(DETAIL OF PRECAST HANDRAIL)
SCALE – 1:20



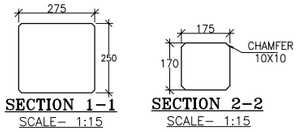
DETAILS OF CRASH BARRIER
(FOR GENERAL ARRANGEMENT)
SCALE – 1:30



DETAILS OF FILLER JOINT
SCALE– 1:40

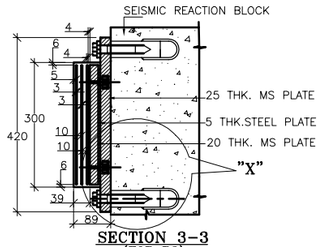


DETAIL OF STRIP TYPE EXPANSION JOINT (40MM GAP)
SCALE 1:15

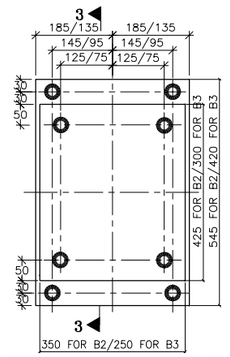


SECTION 1–1
SCALE– 1:15

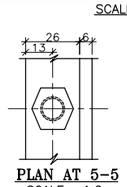
SECTION 2–2
SCALE– 1:15



SECTION 3–3
(FOR B2)
SCALE 1:10

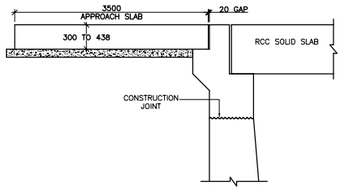


DETAIL OF SEISMIC ARRESTER
WITH FIXTURES
(TYPE B1 & TYPE B2)
SCALE 1:10

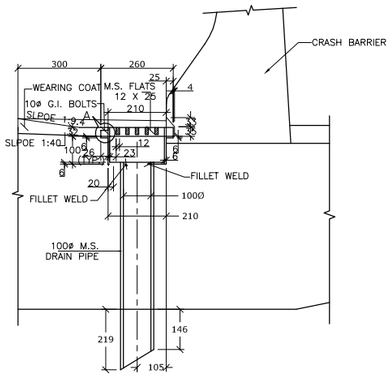


PLAN AT 5–5
SCALE– 1:2

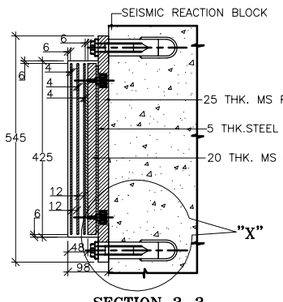
DETAIL – A
SCALE– 1:2



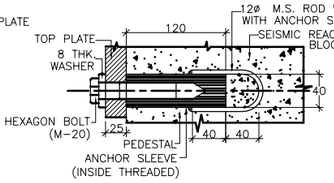
DETAILS OF APPROACH SLAB
SCALE 1:50



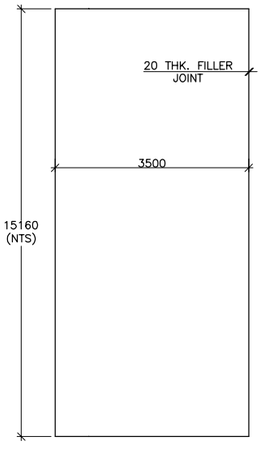
SECTION 1–1
SCALE– 1:15



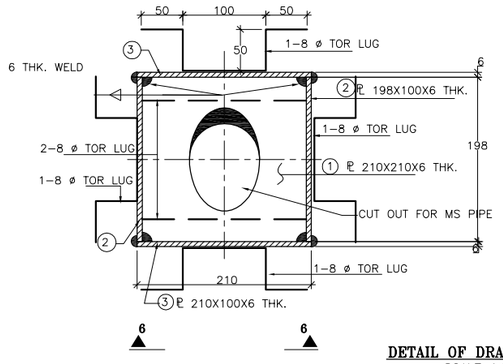
SECTION 3–3
(FOR B1)
SCALE 1:10



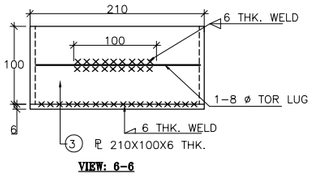
DETAIL OF "X"
SCALE 1:5



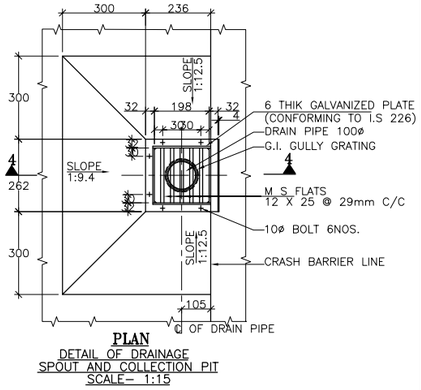
PLAN OF APPROACH SLAB
SCALE 1:60



DETAIL OF DRAINAGE BOX
SCALE 1:5



VIEW: 6–6



PLAN
DETAIL OF DRAINAGE SPOUT AND COLLECTION PIT
SCALE– 1:15

SPECIAL NOTES FOR VERTICAL ELASTOMERIC BEARINGS

INSTALLATION INSTRUCTIONS :

1. CARE SHALL BE TAKEN IN PACKING ,TRANSPOTATION,STORAGE AND HANDLING TO AVOID ANY MECHANICAL DAMAGE, CONTAMINATION WITH OIL,GREASE AND DIRT,UNDUE EXPOSURE TO SUNLIGHT AND WEATHER.
2. THE BEARINGS SHALL BE PLACED IN A RECESS
3. THE POSITION OF THE BEARINGS SHALL BE ACCURATELY MARKED ON THE AREA WHERE THE BEARINGS SHALL BE SEATED ACCURATELY LEVELED.
4. THE CONCRETE SURFACE SHALL BE FREE FROM ANY LOOSE MATERIAL AND CLEANED OF ANY GREASE,OIL PAINT ETC.THE SURFACE SHALL BE SAND BLASTED,CLEAN OF ALL LAITANCE AND LEVELED TRUE.
5. BEARINGS MUST BE PLACED BETWEEN TRUE HORIZONTAL SURFACES (MAXIMUM TOLERANCE 0.2 PER CENT PERPENDICULAR TO LOAD) AND AT TRUE PLAN POSITION OF THEIR CONTROL LINES MARKED ON RECEIVING SURFACES(MAXIMUM TOLERANCE ± 3mm).CONCRETE SURFACES SHALL BE FREE LOCAL IRREGULARITIES(MAXIMUM TOLERANCE ± 1mm IN HEIGHT).
6. THE FROMS AROUND THE BEARINGS SHALL BE SOFT ENOUGH FOR EASY REMOVAL . FROMS SHALL ALSO FIT THE BEARINGS SNUGLY AND PREVENT ANY LEAKAGE OF MORTAR GROUT . ANY MORTAR CONTAMINATING THE BEARING DURING CONCRETING SHALL BE COMPLETELY REMOVED BEFORE SETTING.
7. THE TEMPORARY FORMS SHALL BE REMOVED AFTER THE SUPERSTRUCTURE CONCRETE HAS SET. THE SIDES OF THE BEARINGS SHALL BE CLEANED OF ANY DEPOSIT OF CEMENT SLURRY/CONCRETE.
8. SURFACE OF REACTION BLOCK, USED FOR BEARING INSTALLATION SHOULD BE FAIR FACED.

MAINTENANCE :

1. THE BEARINGS SHALL BE SUBJECTED TO PLANNED MAINTENANCE CARE.
2. THE EXPOSED BEARING SURFACE SHALL BE MAINTANED CLEAN AND FREE FROM CONTAMINATION WITH GREASE OR OIL,ETC.
3. ANNUAL ROUTINE MAINTENANCE INSPECTION OR SPECIAL MAINTENANCE INSPECTION OF ALL BEARINGS SHALL BE MADE TO CHECK FOR ANY SURFACE CRACKING OR SIGNS OF DAMAGE, DETERIORATION OR DISTRESS.
4. DAMAGED BEARINGS SHALL BE REPLACED IMMEDIATELY. TO AVOID DIFFERENCES IN STIFFNESS, ALL ADJACENT BEARINGS ON THE SAME LINE OF SUPPORT SHALL ALSO BE REPLACED AND UNIFORM SEATING OF THE MAIN GIRDERS OVER ALL THE NEW BEARINGS SHALL BE ENSURED.

GENERAL NOTES :

1. ALL DIMENSIONS ARE IN mm. UNLESS OTHERWISE NOTED.
2. BEARING TYPE B1,B2 & B3 SHOULD BE PLACED ON PIER AND ABUTMENT AS PER THEIR POSITIONS MARKED IN GENERAL ARRANGEMENT DRAWINGS.
3. SPECIFICATIONS INCLUDING PERMISSIBLE TOLERANCES FOR THE ELASTOMERIC BEARINGS SHALL BE IN ACCORDANCE WITH IRC:83(PART II)2015 STANDARD SPECIFICATIONS AND CODE OF PRACTICE FOR ROAD BRIDGES SECTION IX PART II–ELASTOMERIC BEARINGS.
4. RAW MATERIAL CHLOROPRENE (CR) SHALL ONLY BE USED IN MANUFCATURE OF BEARINGS.
5. GRADES OF RAW ELASTOMER OF PROVEN USE IN ELASTOMERIC BEARINGS, WITH LOW CRYSTALLISATION RATES AND ADEQUATE SHELF LIFE (E.G.NEOPRENE WRT. BAYPRENE 110 OR EQUIVALENT) SHALL BE USED. NO RECLAIMED RUBBER OR VULCANISED WASTES SHALL BE USED. THE RAW ELASTOMER CONTENT OF THE COMPOUND SHALL NOT BE LOWER THAN 60 PER CENT. THE ASH CONTANT SHALL NOT EXCEED 5 PER CENT.(AS PER TESTS CONDUCTED IN ACCORDANCE WITH ASTM D–297).EPDM AND OTHER SIMILAR CANDIDATE ELASTOMERS FOR BRIDGS BEARING USE SHALL NOT BE PERMITTED.
6. FABRICATION, TESTING AND ACCEPTANCE OF BEARINGS SHALL BE IN ACCORDANCE WITH IRC:83(PART II) 1987.
7. BEARINGS SHALL BE HANDLED CAREFULLY. THESE SHALL BE PROCTED FROM BRIGHT SUN LIGHT AND EXTREME COLD. THESE SHALL BE STORED NEATLY UNDER COVER TILL INSTALLATION.
8. BEARINGS & EXPANSION JOINTS SHALL BE PROCURED ONLY FROM PREQUALIFIED MANUFACTURERS.

RAILING :

1. REINFORCEMENT OF RAILING POST SHOULD BE SUITABLY ANCHORED IN DECK SLAB.
2. CASTING OF POST SHALL BE DONE IN SINGLE POUR AFTER ACCURATELY POSITIONING THE PRECAST HANDRAIL.
3. RAILING SHALL BE CONSTRUCTED ONLY AFTER THE STRUCTURAL CONCRETE OF SUPERSTRUCTURE HAS HARDENED AND SHUTTERING IS RELEASED.
4. EXPANSION GAPS IN RAILING SHALL BE PROVIDED AT THE SAME LOCATIONS AS IN THE DECK SLAB.

NOTES OF DRAINAGE SPOUT

1. ONLY FIGURED DIMENSIONS ARE TO BE FOLLOWED.
2. ALL STEEL WORK SHALL BE AS PER IS – 2062.
3. DRAINAGE SPOUT & COLLECTION PIT ASSEMBLY SHALL BE FABRICATED FROM MILD STEEL & AFTER FABRICATION, THE COMPLETE ASSEMBLY EXCEPT GRATING SHALL BE GIVEN A HOT DIPPED GALVANISED COATING.
4. THE REINFORCEMENT OF TOP SLAB OF BOX SHALL BE SUITABLY MODIFIED TO ACCOMMODATE THE DRAINAGE SPOUT.
5. THE DRAINAGE SPOUT SHALL BE GALVANIZED AFTER WELDING THE PLATES & FLATS.

REFERENCE DRAWINGS :

CET/BDG/2017/4047/NH–102B/C–T/FDPR/PKG–IVB/MJ/(STR–141/5)/GA
(SHEET NO. 01 TO 05)

					SCALE: AS SHOWN
R0					
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.	DATE: DEC, 2019
REVISIONS					

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building, 3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF **CHURACHADPUR - TUIVAI ROAD SECTION** (LENGTH - 162 KM) ON **NH- 102B (MANIPUR)** ON EPC MODE **IN THE STATE OF MANIPUR**

TITLE : DETAILS OF RAILING, CRASH BARRIER, EXPANSION JOINT, REACTION BLOCK, BEARING APPROACH SLAB & DRAINAGE SPOUT
PACKAGE :- NHIDCL/DPR/CT-IJ-TP/MANIPUR/2017

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT (PKG - IVB)

CONSULTANT : CETEST Engineering Consultants (An ISO 9001, 14001 & OHSAS 18001 Certified Company)
C.E. TESTING COMPANY PVT. LTD.
124-A, N.S.C. BOSE ROAD
KOLKATA - 700092.

DRG. NO. : CET/BDG/2017/4047/NH -102B/C-T/FDPR/PKG IVB/MJ/(STR-141/5)/MISC
REVISION MKD. - R0 | SHEET NO. - 01 OF 01

DRAWN BY	DESIGN BY	CHECKED BY	ISSUED BY
S.CHATTERJEE	-	A. DEY	A.K.DAS (TEAM LEADER)

PROPOSED CULVERTS

(PACKAGE - IVB)

CONTENT

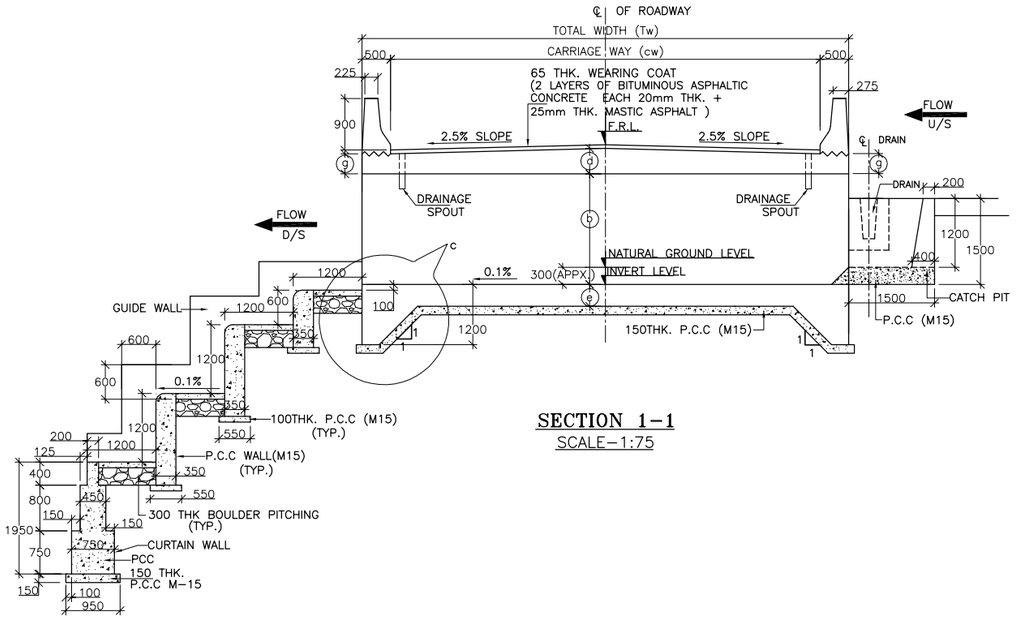
PROPOSED CULVERTS (PACKAGE-IVB)

ROAD NAME : CHURACHADPUR-TUIVAI

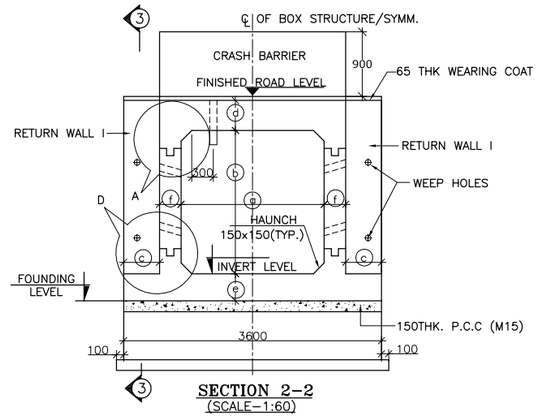
SL. NO.	DESCRIPTION	DRAWING NO.	NO. OF SHEETS
01.	LEVEL DETAILS OF PROPOSED CULVERTS		02
02.	SINGLE CELL R.C.C. BOX CULVERT WITH CATCHPIT AND STEPPED (NORMAL CAMBER) :-		
	GENERAL ARRANGEMENT	CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/BC/C-STP/NC/GA	02
03.	MISCELLANEOUS DRAWING FOR SINGLE CELL R.C.C. BOX CULVERT :-		
	GENERAL ARRANGEMENT	CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/BC/MISC	01

Sl No.	Design Chainage (KM)	Structure No.	Remarks For Proposal	EGL / EX. INVERT	FRL(M)	EGL	FRL-EGL	Culvert Type	Size Span x Height (M X M)	Total Width (TW) (M)	Proposed Carriageway (CW) (M)	Left Carriageway (M)	Right Carriageway (M)	Vent Height of Proposed Box (M)	Top Slab Thickness at Edge (M)	Top Slab Thickness at Centre (M)	Bottom Slab Thickness (M)	Proposed Invert Level (M)	Proposed Founding Level (M)	Protection Type	Cross Fall	N C
1	130.093	131/1	Balancing	832.67138	834.921	832.67138	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	832.369	831.989	catchpit with stepped protection	NC	2.5%
2	130.282	131/2	Reconstruction	752.6175	754.868	752.6175	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	752.315	751.935	catchpit with stepped protection	NC	2.5%
3	130.308	131/3	Balancing	750.9429	753.193	750.9429	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	750.640	750.260	catchpit with stepped protection	NC	2.5%
4	130.360	131/4	Reconstruction	747.5937	749.844	747.5937	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	747.291	746.911	catchpit with stepped protection	NC	2.5%
5	130.778	131/5	Balancing	720.6711	722.921	720.6711	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	720.369	719.989	catchpit with stepped protection	NC	2.5%
6	130.905	131/6	Reconstruction	712.4913	714.741	712.4913	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	712.189	711.809	catchpit with stepped protection	NC	2.5%
7	131.112	132/1	Reconstruction	701.655	704.975	701.655	3.32	Box Culvert	2.0 X 3.0	12.0	11.0	5.5	5.5	3	0.42	0.558	0.42	701.353	700.933	catchpit with stepped protection	NC	2.5%
8	131.212	132/2	Balancing	707.6347	709.885	707.6347	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	707.332	706.952	catchpit with stepped protection	NC	2.5%
9	131.503	132/3	Reconstruction	716.5025	718.753	716.5025	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	716.200	715.820	catchpit with stepped protection	NC	2.5%
10	131.639	132/4	Reconstruction	718.725	720.975	718.725	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	718.423	718.043	catchpit with stepped protection	NC	2.5%
11	131.779	132/5	Reconstruction	720.5404	722.790	720.5404	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	720.238	719.858	catchpit with stepped protection	NC	2.5%
12	132.002	133/1	Reconstruction	718.1913	720.441	718.1913	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	717.889	717.509	catchpit with stepped protection	NC	2.5%
13	132.248	133/2	Balancing	703.7382	705.988	703.7382	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	703.436	703.056	catchpit with stepped protection	NC	2.5%
14	132.420	133/3	Balancing	702.9427	706.263	702.9427	3.32	Box Culvert	2.0 X 3.0	12.0	11.0	5.5	5.5	3	0.42	0.558	0.42	702.640	702.220	catchpit with stepped protection	NC	2.5%
15	132.562	133/4	Reconstruction	703.1688	706.489	703.1688	3.32	Box Culvert	2.0 X 3.0	12.0	11.0	5.5	5.5	3	0.42	0.558	0.42	702.866	702.446	catchpit with stepped protection	NC	2.5%
16	132.786	133/5	Balancing	710.3968	712.647	710.3968	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	710.094	709.714	catchpit with stepped protection	NC	2.5%
17	132.984	133/6	Balancing	719.8486	722.099	719.8486	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	719.546	719.166	catchpit with stepped protection	NC	2.5%
18	133.167	134/1	Balancing	727.5077	729.758	727.5077	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	727.205	726.825	catchpit with stepped protection	NC	2.5%
19	133.335	134/2	Reconstruction	732.8889	736.209	732.8889	3.32	Box Culvert	2.0 X 3.0	12.0	11.0	5.5	5.5	3	0.42	0.558	0.42	732.586	732.166	catchpit with stepped protection	NC	2.5%
20	133.625	134/3	Reconstruction	734.4559	736.706	734.4559	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	734.153	733.773	catchpit with stepped protection	NC	2.5%
21	133.681	134/4	Balancing	733.1888	735.439	733.1888	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	732.886	732.506	catchpit with stepped protection	NC	2.5%
22	133.788	134/5	Balancing	730.7983	733.048	730.7983	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	730.496	730.116	catchpit with stepped protection	NC	2.5%
23	134.081	135/1	Reconstruction	744.3146	746.565	744.3146	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	744.012	743.632	catchpit with stepped protection	NC	2.5%
24	134.414	135/2	Reconstruction	761.2869	763.537	761.2869	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	760.984	760.604	catchpit with stepped protection	NC	2.5%
25	134.461	135/3	Balancing	760.6393	762.889	760.6393	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	760.337	759.957	catchpit with stepped protection	NC	2.5%
26	134.652	135/4	Balancing	757.9678	760.218	757.9678	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	757.665	757.285	catchpit with stepped protection	NC	2.5%
27	134.751	135/5	Reconstruction	756.5445	758.795	756.5445	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	756.242	755.862	catchpit with stepped protection	NC	2.5%
28	134.883	135/6	Reconstruction	748.5899	750.840	748.5899	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	748.287	747.907	catchpit with stepped protection	NC	2.5%
29	134.932	135/7	Balancing	746.2033	748.453	746.2033	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	745.901	745.521	catchpit with stepped protection	NC	2.5%
30	135.072	136/1	Reconstruction	746.2244	748.474	746.2244	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	745.922	745.542	catchpit with stepped protection	NC	2.5%
31	135.190	136/2	Balancing	742.5738	744.824	742.5738	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	742.271	741.891	catchpit with stepped protection	NC	2.5%
32	135.233	136/3	Reconstruction	741.0229	743.273	741.0229	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	740.720	740.340	catchpit with stepped protection	NC	2.5%
33	135.333	136/4	Reconstruction	736.6319	738.882	736.6319	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	736.329	735.949	catchpit with stepped protection	NC	2.5%

34	135.560	136/5	Reconstruction	722.8432	726.163	722.8432	3.32	Box Culvert	2.0 X 3.0	12.0	11.0	5.5	5.5	3	0.42	0.558	0.42	722.541	722.121	catchpit with stepped protection	NC	2.5%
35	135.590	136/6	Reconstruction	722.8579	725.108	722.8579	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	722.555	722.175	catchpit with stepped protection	NC	2.5%
36	135.805	136/7	Reconstruction	715.2952	717.545	715.2952	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	714.993	714.613	catchpit with stepped protection	NC	2.5%
37	135.927	136/8	Reconstruction	707.7384	711.058	707.7384	3.32	Box Culvert	2.0 X 3.0	12.0	11.0	5.5	5.5	3	0.42	0.558	0.42	707.436	707.016	catchpit with stepped protection	NC	2.5%
38	136.084	137/1	Reconstruction	701.2956	703.546	701.2956	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	700.993	700.613	catchpit with stepped protection	NC	2.5%
39	136.140	137/2	Reconstruction	700.2174	702.467	700.2174	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	699.915	699.535	catchpit with stepped protection	NC	2.5%
40	136.216	137/3	Reconstruction	698.2022	701.522	698.2022	3.32	Box Culvert	2.0 X 3.0	12.0	11.0	5.5	5.5	3	0.42	0.558	0.42	697.900	697.480	catchpit with stepped protection	NC	2.5%
41	136.420	137/4	Reconstruction	686.8546	690.175	686.8546	3.32	Box Culvert	2.0 X 3.0	12.0	11.0	5.5	5.5	3	0.42	0.558	0.42	686.552	686.132	catchpit with stepped protection	NC	2.5%
42	136.432	137/5	Reconstruction	686.1245	689.445	686.1245	3.32	Box Culvert	2.0 X 3.0	12.0	11.0	5.5	5.5	3	0.42	0.558	0.42	685.822	685.402	catchpit with stepped protection	NC	2.5%
43	136.483	137/6	Reconstruction	684.0917	686.342	684.0917	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	683.789	683.409	catchpit with stepped protection	NC	2.5%
44	136.498	137/7	Reconstruction	683.1792	685.429	683.1792	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	682.877	682.497	catchpit with stepped protection	NC	2.5%
45	136.572	137/8	Reconstruction	677.6071	680.927	677.6071	3.32	Box Culvert	2.0 X 3.0	12.0	11.0	5.5	5.5	3	0.42	0.558	0.42	677.305	676.885	catchpit with stepped protection	NC	2.5%
46	136.662	137/9	Reconstruction	673.2016	675.452	673.2016	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	672.899	672.519	catchpit with stepped protection	NC	2.5%
47	136.724	137/10	Balancing	669.4295	671.680	669.4295	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	669.127	668.747	catchpit with stepped protection	NC	2.5%
48	136.924	137/11	Reconstruction	656.1917	659.512	656.1917	3.32	Box Culvert	2.0 X 3.0	12.0	11.0	5.5	5.5	3	0.42	0.558	0.42	655.889	655.469	catchpit with stepped protection	NC	2.5%
49	137.158	138/1	Balancing	643.0254	645.275	643.0254	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	642.723	642.343	catchpit with stepped protection	NC	2.5%
50	137.250	138/2	Reconstruction	636.3585	639.679	636.3585	3.32	Box Culvert	2.0 X 3.0	12.0	11.0	5.5	5.5	3	0.42	0.558	0.42	636.056	635.636	catchpit with stepped protection	NC	2.5%
51	137.282	138/3	Reconstruction	635.8453	638.095	635.8453	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	635.543	635.163	catchpit with stepped protection	NC	2.5%
52	137.325	138/4	Reconstruction	634.7315	636.982	634.7315	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	634.429	634.049	catchpit with stepped protection	NC	2.5%
53	137.378	138/5	Balancing	633.6714	635.921	633.6714	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	633.369	632.989	catchpit with stepped protection	NC	2.5%
54	137.910	138/6	Reconstruction	599.4544	601.704	599.4544	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	599.152	598.772	catchpit with stepped protection	NC	2.5%
55	137.975	138/7	Reconstruction	593.8345	597.155	593.8345	3.32	Box Culvert	2.0 X 3.0	12.0	11.0	5.5	5.5	3	0.42	0.558	0.42	593.532	593.112	catchpit with stepped protection	NC	2.5%
56	138.485	139/1	Reconstruction	559.2049	561.455	559.2049	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	558.902	558.522	catchpit with stepped protection	NC	2.5%
57	138.662	139/2	Reconstruction	549.0649	551.315	549.0649	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	548.762	548.382	catchpit with stepped protection	NC	2.5%
58	138.711	139/3	Balancing	546.85	549.100	546.85	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	546.548	546.168	catchpit with stepped protection	NC	2.5%
59	138.854	139/4	Balancing	540.386	542.636	540.386	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	540.084	539.704	catchpit with stepped protection	NC	2.5%
60	139.392	140/1	Reconstruction	503.6471	505.897	503.6471	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	503.345	502.965	catchpit with stepped protection	NC	2.5%
61	139.421	140/2	Reconstruction	501.618	503.868	501.618	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	501.316	500.936	catchpit with stepped protection	NC	2.5%
62	139.486	140/3	Reconstruction	497.0701	499.320	497.0701	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	496.768	496.388	catchpit with stepped protection	NC	2.5%
63	139.630	140/4	Reconstruction	485.9248	489.245	485.9248	3.32	Box Culvert	2.0 X 3.0	12.0	11.0	5.5	5.5	3	0.42	0.558	0.42	485.622	485.202	catchpit with stepped protection	NC	2.5%
64	139.673	140/5	Balancing	482.9162	486.236	482.9162	3.32	Box Culvert	2.0 X 3.0	12.0	11.0	5.5	5.5	3	0.42	0.558	0.42	482.614	482.194	catchpit with stepped protection	NC	2.5%
65	139.747	140/6	Balancing	477.7385	481.059	477.7385	3.32	Box Culvert	2.0 X 3.0	12.0	11.0	5.5	5.5	3	0.42	0.558	0.42	477.436	477.016	catchpit with stepped protection	NC	2.5%
66	139.977	140/7	Reconstruction	469.9275	472.178	469.9275	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	469.625	469.245	catchpit with stepped protection	NC	2.5%
67	140.120	141/1	Reconstruction	465.5424	467.792	465.5424	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	465.240	464.860	catchpit with stepped protection	NC	2.5%
68	140.300	141/2	Balancing	454.49643	456.746	454.49643	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	454.194	453.814	catchpit with stepped protection	NC	2.5%
69	140.502	141/3	Reconstruction	440.3564	442.606	440.3564	2.25	Box Culvert	2.0 X 2.0	12.0	11.0	5.5	5.5	2	0.35	0.488	0.38	440.054	439.674	catchpit with stepped protection	NC	2.5%



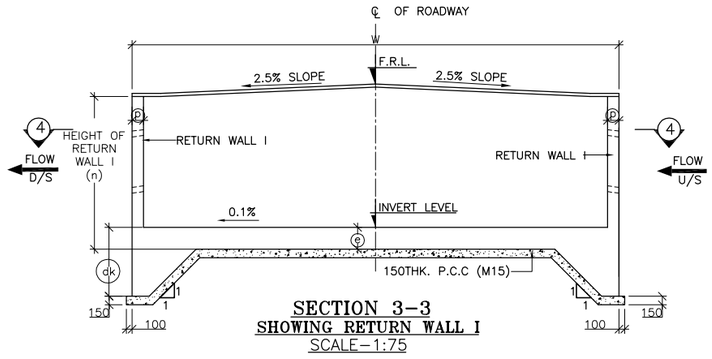
SECTION 1-1
SCALE-1:75



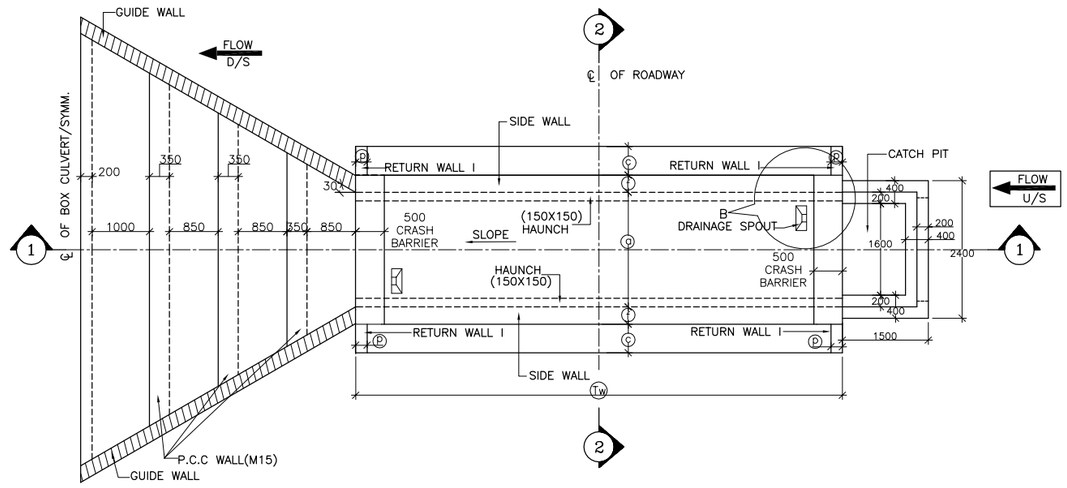
SECTION 2-2
(SCALE-1:60)

BOX CELL DESIGNATION No/ab/Ec		1/22/0
TABLE SHOWING SALIENT DIMENSIONS	a	2000
	b	2000
	c	500
	d	488
	e	380
	f	300
	g	350
	n	2730
	p	300

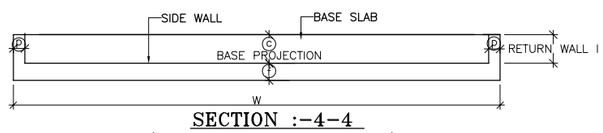
BOX CELL DESIGNATION No/ab/Ec		1/23/0
TABLE SHOWING SALIENT DIMENSIONS	a	2000
	b	3000
	c	1300
	d	508
	e	420
	f	350
	g	370
	n	3790
	p	300



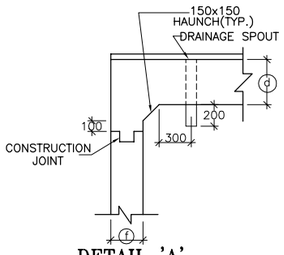
SECTION 3-3
SHOWING RETURN WALL I
SCALE-1:75



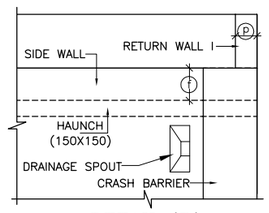
PLAN
(SCALE-1:75)



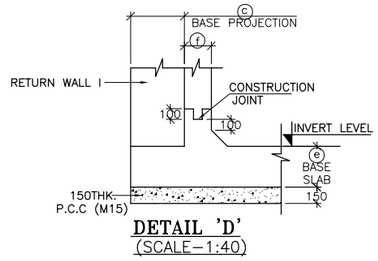
SECTION :-4-4
(SHOWING RETURN WALL I)
SCALE-1:75



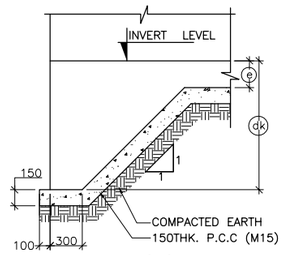
DETAIL 'A'
(SCALE-1:40)



DETAIL 'B'
(SCALE-1:40)



DETAIL 'D'
(SCALE-1:40)



DETAIL 'C'
(SCALE-1:40)

NOTES :

1. ALL DIMENSIONS ARE IN MM. UNLESS OTHERWISE MENTIONED.
2. GRADE OF CONCRETE :
   BOX CELL STRUCTURE = M30
   CURTAIN WALL & GUIDE WALL = M20
   LEVELLING COURSE (P.C.C.)= M15
   RETURN WALL-I = M25
   RCC WALL & KERB = M25
3. GRADE OF STEEL Fe 500 AS PER I.S.-1786.
4. CLASS 70R TRACKED PRODUCING WORST EFFECT ARE CONSIDERED FOR DESIGN.
5. PROPERTIES OF BACKFILL SOIL $\gamma=1.8t/m^3$, $\phi=30°$.
6. FILTER MATERIAL BEHIND ABUTMENT AND RETURN WALL SHALL CONFORM TO CLAUSE 2504.2.2 OF MoRTH SPECIFICATIONS TO A THICKNESS OF NOT LESS THAN 600mm. WITH SMALLER SIZE TOWARDS THE SOIL AND BIGGER SIZE TOWARDS THE WALL TO THE FULL HEIGHT.
7. SOFT AND LOOSE PATCHES IN THE BEARING AREA ARE TO BE REPLACED BY COMPACTED GRANNULAR FILLS WITH LAYERS NOT EXCEEDING 300mm.
8. EARTH BELLOW BOX SHALL BE WELL COMPACTED TO ACHIEVE MINIMUM 15 t/m^2 BEARING CAPACITY.
9. SLOPE ON DECK SLAB WILL VARY AS PER ROAD SLOPE IN DIFFERENT CHAINAGES.
10. THIS DRAWING SHALL BE READ IN CONJUSETION WITH CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/BC/C-STP/NC/GA (SHEET NO.-02)
    CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/BC/MISC (SHEET NO.-01)

					SCALE: AS SHOWN
R0					DATE: DEC, 2019
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.	
REVISIONS					

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building, 3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF **CHURACHADPUR - TUIVAI ROAD SECTION** (LENGTH - 162 KM) ON **NH- 102B (MANIPUR)** ON EPC MODE **IN THE STATE OF MANIPUR**

TITLE: SINGLE CELL TWO LANE R.C.C. BOX CULVERT WITH STEPPED-CATCHPIT_TOTAL WIDTH 12.0M (NORMAL CAMBER)
PACKAGE :- NHIDCL/DPR/CT-IJ-TP/MANIPUR/2017

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT (PACKAGE-IVB)

CONSULTANT : CETEST Engineering Consultants
C.E. TESTING COMPANY PVT. LTD.
124-A, N.S.C. BOSE ROAD
KOLKATA - 700092.

DRG. NO. : CET/BDG/2017/4047/NH -102B/C-T/FDPR/PKG-IVB/BC/C-STP/NC/GA

REVISION MKD. - R0 | SHEET NO.- 1 OF 2

DRAWN BY	DESIGN BY	CHECKED BY	ISSUED BY
S.CHATTERJEE	S.ALI	A. DEY	A.K.DAS (TEAM LEADER)

SL NO.	DESIGN CHAINAGE (KM)	STRUCTURE NO.	FRL(M)	SIZE SPAN X HEIGHT (M X M)	TOTAL WIDTH (TW) (M)	PROPOSED CARRIAGEWAY (CW) (M)	PROPOSED INVERT LEVEL (M)	PROPOSED FOUNDING LEVEL (M)
1	130.093	131/1	834.921	2.0 X 2.0	12.0	11.0	832.369	831.989
2	130.282	131/2	754.868	2.0 X 2.0	12.0	11.0	752.315	751.935
3	130.308	131/3	753.193	2.0 X 2.0	12.0	11.0	750.640	750.260
4	130.360	131/4	749.844	2.0 X 2.0	12.0	11.0	747.291	746.911
5	130.778	131/5	722.921	2.0 X 2.0	12.0	11.0	720.369	719.989
6	130.905	131/6	714.741	2.0 X 2.0	12.0	11.0	712.189	711.809
7	131.112	132/1	704.975	2.0 X 3.0	12.0	11.0	701.353	700.933
8	131.212	132/2	709.885	2.0 X 2.0	12.0	11.0	707.332	706.952
9	131.503	132/3	718.753	2.0 X 2.0	12.0	11.0	716.200	715.820
10	131.639	132/4	720.975	2.0 X 2.0	12.0	11.0	718.423	718.043
11	131.779	132/5	722.790	2.0 X 2.0	12.0	11.0	720.238	719.858
12	132.002	133/1	720.441	2.0 X 2.0	12.0	11.0	717.889	717.509
13	132.248	133/2	705.988	2.0 X 2.0	12.0	11.0	703.436	703.056
14	132.420	133/3	706.263	2.0 X 3.0	12.0	11.0	702.640	702.220
15	132.562	133/4	706.489	2.0 X 3.0	12.0	11.0	702.866	702.446
16	132.786	133/5	712.647	2.0 X 2.0	12.0	11.0	710.094	709.714
17	132.984	133/6	722.099	2.0 X 2.0	12.0	11.0	719.546	719.166
18	133.167	134/1	729.758	2.0 X 2.0	12.0	11.0	727.205	726.825
19	133.335	134/2	736.209	2.0 X 3.0	12.0	11.0	732.586	732.166
20	133.625	134/3	736.706	2.0 X 2.0	12.0	11.0	734.153	733.773
21	133.681	134/4	735.439	2.0 X 2.0	12.0	11.0	732.886	732.506
22	133.788	134/5	733.048	2.0 X 2.0	12.0	11.0	730.496	730.116
23	134.081	135/1	746.565	2.0 X 2.0	12.0	11.0	744.012	743.632
24	134.414	135/2	763.537	2.0 X 2.0	12.0	11.0	760.984	760.604
25	134.461	135/3	762.889	2.0 X 2.0	12.0	11.0	760.337	759.957
26	134.652	135/4	760.218	2.0 X 2.0	12.0	11.0	757.665	757.285
27	134.751	135/5	758.795	2.0 X 2.0	12.0	11.0	756.242	755.862
28	134.883	135/6	750.840	2.0 X 2.0	12.0	11.0	748.287	747.907
29	134.932	135/7	748.453	2.0 X 2.0	12.0	11.0	745.901	745.521
30	135.072	136/1	748.474	2.0 X 2.0	12.0	11.0	745.922	745.542
31	135.190	136/2	744.824	2.0 X 2.0	12.0	11.0	742.271	741.891
32	135.233	136/3	743.273	2.0 X 2.0	12.0	11.0	740.720	740.340

SL NO.	DESIGN CHAINAGE (KM)	STRUCTURE NO.	FRL(M)	SIZE SPAN X HEIGHT (M X M)	TOTAL WIDTH (TW) (M)	PROPOSED CARRIAGEWAY (CW) (M)	PROPOSED INVERT LEVEL (M)	PROPOSED FOUNDING LEVEL (M)
33	135.333	136/4	738.882	2.0 X 2.0	12.0	11.0	736.329	735.949
34	135.560	136/5	726.163	2.0 X 3.0	12.0	11.0	722.541	722.121
35	135.590	136/6	725.108	2.0 X 2.0	12.0	11.0	722.555	722.175
36	135.805	136/7	717.545	2.0 X 2.0	12.0	11.0	714.993	714.613
37	135.927	136/8	711.058	2.0 X 3.0	12.0	11.0	707.436	707.016
38	136.084	137/1	703.546	2.0 X 2.0	12.0	11.0	700.993	700.613
39	136.140	137/2	702.467	2.0 X 2.0	12.0	11.0	699.915	699.535
40	136.216	137/3	701.522	2.0 X 3.0	12.0	11.0	697.900	697.480
41	136.420	137/4	690.175	2.0 X 3.0	12.0	11.0	686.552	686.132
42	136.432	137/5	689.445	2.0 X 3.0	12.0	11.0	685.822	685.402
43	136.483	137/6	686.342	2.0 X 2.0	12.0	11.0	683.789	683.409
44	136.498	137/7	685.429	2.0 X 2.0	12.0	11.0	682.877	682.497
45	136.572	137/8	680.927	2.0 X 3.0	12.0	11.0	677.305	676.885
46	136.662	137/9	675.452	2.0 X 2.0	12.0	11.0	672.899	672.519
47	136.724	137/10	671.680	2.0 X 2.0	12.0	11.0	669.127	668.747
48	136.924	137/11	659.512	2.0 X 3.0	12.0	11.0	655.889	655.469
49	137.158	138/1	645.275	2.0 X 2.0	12.0	11.0	642.723	642.343
50	137.250	138/2	639.679	2.0 X 3.0	12.0	11.0	636.056	635.636
51	137.282	138/3	638.095	2.0 X 2.0	12.0	11.0	635.543	635.163
52	137.325	138/4	636.982	2.0 X 2.0	12.0	11.0	634.429	634.049
53	137.378	138/5	635.921	2.0 X 2.0	12.0	11.0	633.369	632.989
54	137.910	138/6	601.704	2.0 X 2.0	12.0	11.0	599.152	598.772
55	137.975	138/7	597.155	2.0 X 3.0	12.0	11.0	593.532	593.112
56	138.485	139/1	561.455	2.0 X 2.0	12.0	11.0	558.902	558.522
57	138.662	139/2	551.315	2.0 X 2.0	12.0	11.0	548.762	548.382
58	138.711	139/3	549.100	2.0 X 2.0	12.0	11.0	546.548	546.168
59	138.854	139/4	542.636	2.0 X 2.0	12.0	11.0	540.084	539.704
60	139.392	140/1	505.897	2.0 X 2.0	12.0	11.0	503.345	502.965
61	139.421	140/2	503.868	2.0 X 2.0	12.0	11.0	501.316	500.936
62	139.486	140/3	499.320	2.0 X 2.0	12.0	11.0	496.768	496.388
63	139.630	140/4	489.245	2.0 X 3.0	12.0	11.0	485.622	485.202
64	139.673	140/5	486.236	2.0 X 3.0	12.0	11.0	482.614	482.194
65	139.747	140/6	481.059	2.0 X 3.0	12.0	11.0	477.436	477.016
66	139.977	140/7	472.178	2.0 X 2.0	12.0	11.0	469.625	469.245
67	140.120	141/1	467.792	2.0 X 2.0	12.0	11.0	465.240	464.860
68	140.300	141/2	456.746	2.0 X 2.0	12.0	11.0	454.194	453.814
69	140.502	141/3	442.606	2.0 X 2.0	12.0	11.0	440.054	439.674

NOTES :

1. ALL DIMENTIONS ARE IN MM. ALL LEVEL ARE IN M. UNLESS OTHERWISE MENTIONED.
2. THIS DRAWING SHALL BE READ IN CONJUSETION WITH
   CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/BC/C-STP/NC/GA (SHEET NO.-01)
   CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IVB/BC/MISC (SHEET NO.-01)

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.
R0				

REVISIONS

SCALE: AS SHOWN

DATE: DEC, 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building, 3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF **CHURACHADPUR - TUIVAI ROAD SECTION** (LENGTH - 162 KM) ON **NH- 102B (MANIPUR)** ON EPC MODE **IN THE STATE OF MANIPUR**

TITLE : CULVERTS LIST

PACKAGE :- NHIDCL/DPR/CT-IJ-TP/MANIPUR/2017

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT (PACKAGE-IVB)

CONSULTANT : CETEST Engineering Consultants
An ISO 9001, 14001 & OHSAS 18001 Certified Company

C.E. TESTING CO. PVT. LTD. KOLKATA 700 092 CONSULTANCY DIVISION

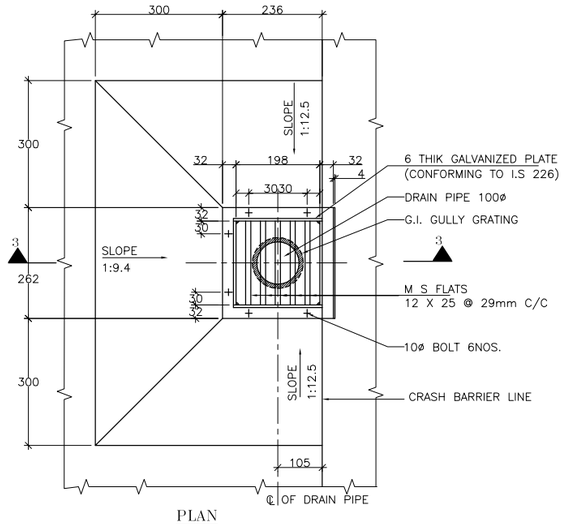
C.E. TESTING COMPANY PVT. LTD.
124-A, N.S.C. BOSE ROAD
KOLKATA - 700092.

DRG. NO. : CET/BDG/2017/4047/NH -102B/C-T/FDPR/PKG-IVB/BC/C-STP/NC/GA

REVISION MKD. - R0

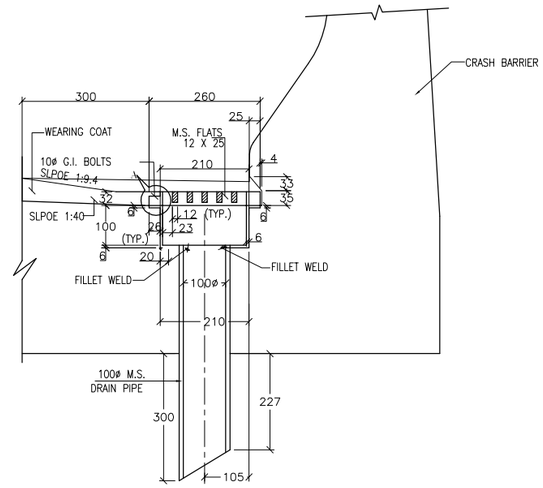
SHEET NO. - 2 OF 2

DRAWN BY	DESIGN BY	CHECKED BY	ISSUED BY
S.CHATTERJEE	S.ALI	A. DEY	A.K.DAS (TEAM LEADER)



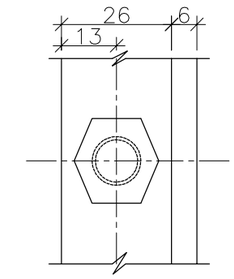
PLAN
DETAIL OF DRAINAGE
SPOUT AND COLLECTION PIT

SCALE– 1:10



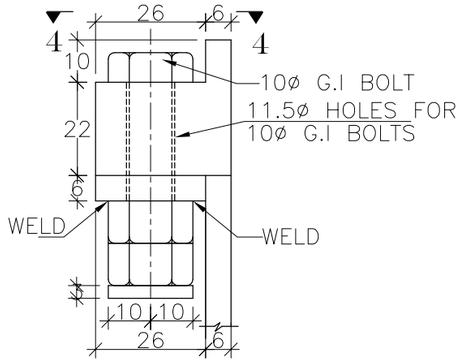
SECTION 3–3

SCALE– 1:10



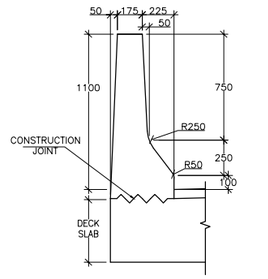
PLAN AT 4–4

SCALE– 1:2



DETAIL – A

SCALE– 1:2



DETAILS OF CRASH BARRIER
(FOR GENERAL ARRANGEMENT)

SCALE–1:30

NOTES :

1. ALL DIMENSIONS ARE IN mm. UNLESS OTHERWISE NOTED.

NOTES OF DRAINAGE SPOUT

1. ONLY FIGURED DIMENSIONS ARE TO BE FOLLOWED.
2. ALL STEEL WORK SHALL BE AS PER IS – 2062.
3. DRAINAGE SPOUT & COLLECTION PIT ASSEMBLY SHALL BE FABRICATED FROM MILD STEEL & AFTER FABRICATION, THE COMPLETE ASSEMBLY EXCEPT GRATING SHALL BE GIVEN A HOT DIPPED GALVANISED COATING.
4. THE REINFORCEMENT OF TOP SLAB OF SHALL BE SUITABLY MODIFIED TO ACCOMMODATE THE DRAINAGE SPOUT.
5. THE DRAINAGE SPOUT SHALL BE GALVANIZED AFTER WELDING THE PLATES & FLATS.

REFERENCE DRAWINGS :

1.THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL RELEVENT GA DRAWINGS.

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.
R0				

REVISIONS

SCALE: AS SHOWN

DATE: DEC. 2019

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building, 3rd Floor, 4 Parliament Street,
New Delhi - 110001

PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF **CHURACHADPUR - TUIVAI ROAD SECTION** (LENGTH - 162 KM) ON **NH- 102B (MANIPUR)** ON EPC MODE **IN THE STATE OF MANIPUR**

TITLE : DETAILS OF DRAINAGE SPOUT AND CRASH BARRIER

PACKAGE :- NHIDCL/DPR/CT-IJ-TP/MANIPUR/2017

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT (PACKAGE-IVB)

CONSULTANT : CETEST Engineering Consultants
An ISO 9001, 14001 & OHSAS 18001 Certified Company

C.E. TESTING COMPANY PVT. LTD.
124-A, N.S.C. BOSE ROAD
KOLKATA - 700092.

DRG. NO. : CET/BDG/2017/4047/NH -102B/C-T/FDPR/PKG-IVB/ BC/MISC

REVISION MKD. - R0 | SHEET NO. - 1 OF 1

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S.CHATTERJEE	-	A. DEY	A.K.DAS (TEAM LEADER)