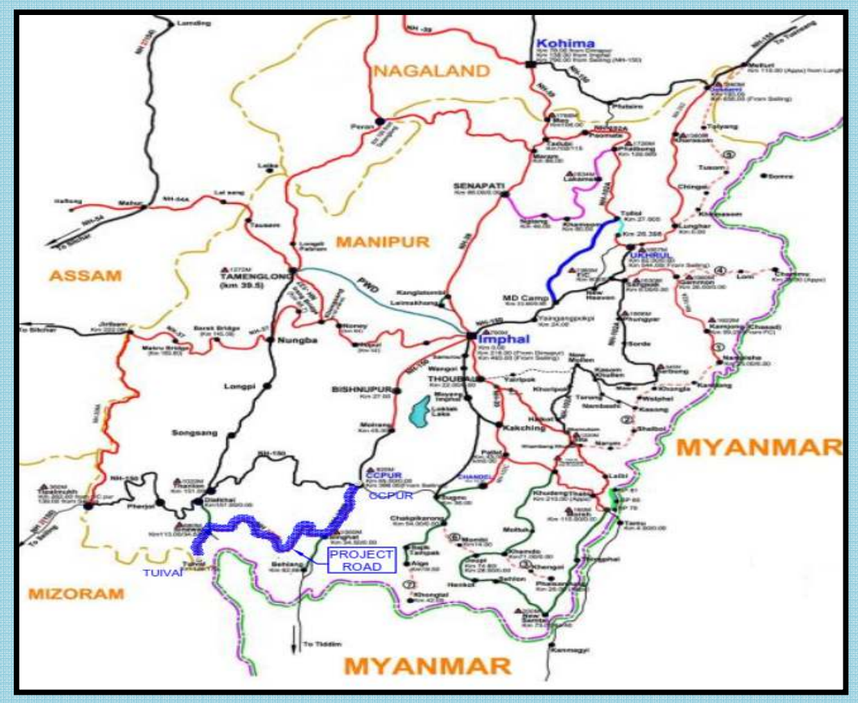
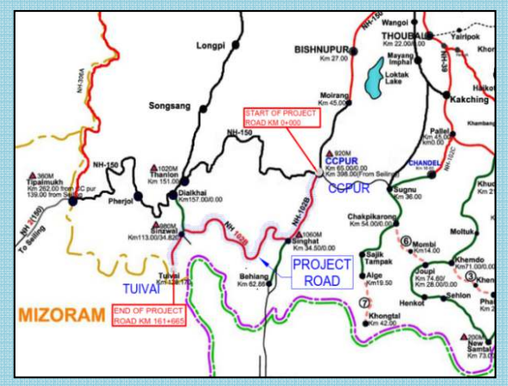
Consultancy Services for Carrying out Feasibility Study, Preparation of Detailed Project Report and providing pre-construction services in respect of 2 laning of Churachandpur – Tuivai road Section(length = 162 km) on NH-102B (Manipur) on Engineering, Procurement and Construction mode in the state of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

Package – IIIC
Design Ch. Km-103.525 to Km-121.769
Survey Ch. Km-108.610 to Km-134.272

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** **APRIL, 2020**

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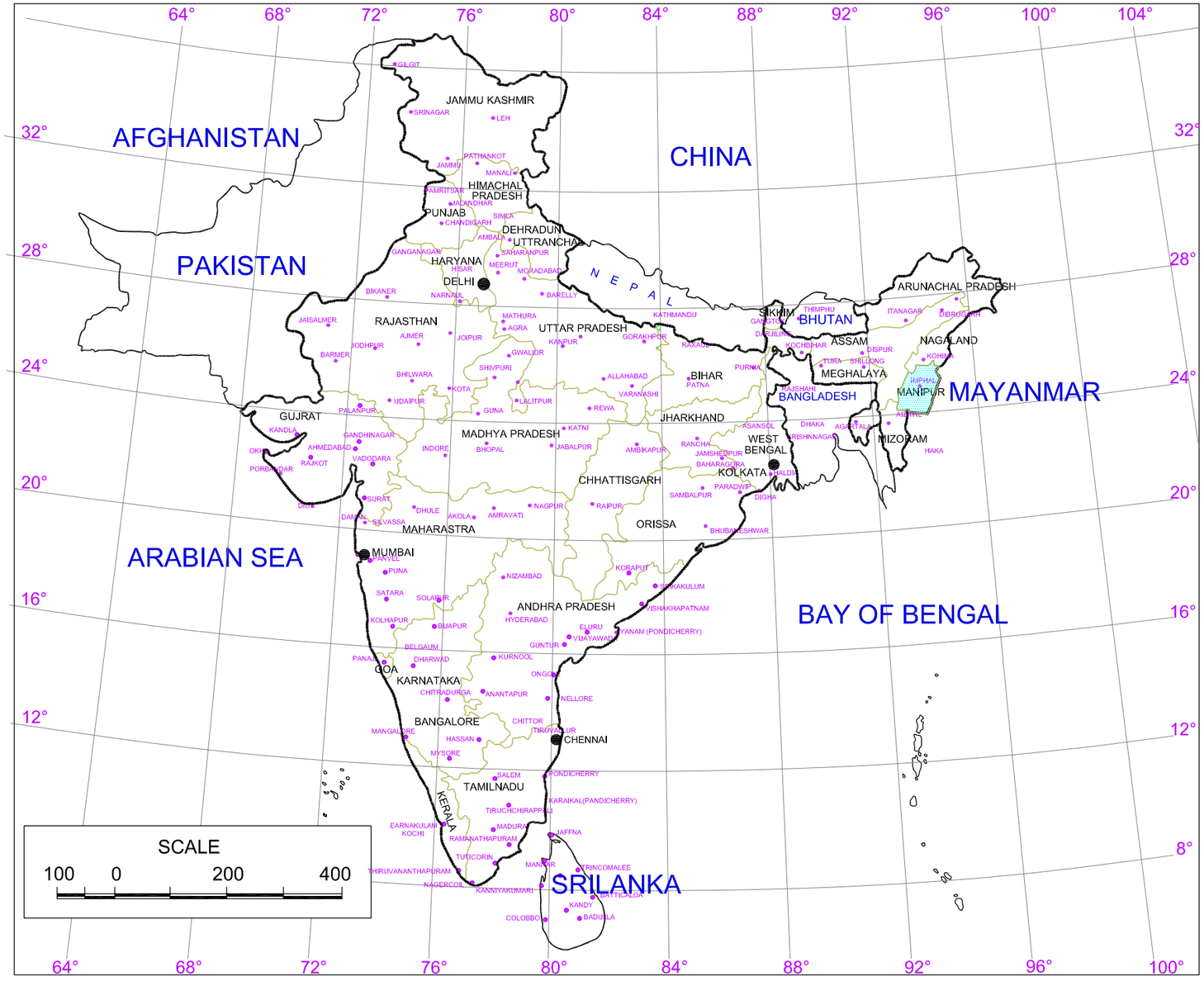
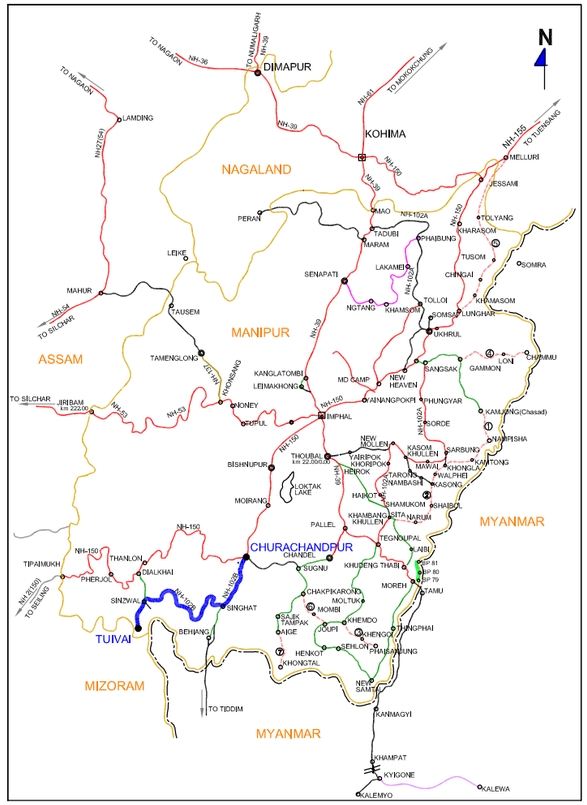
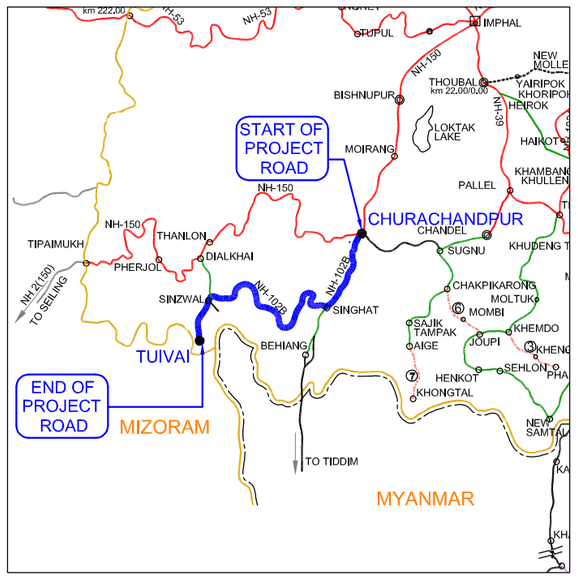
11	GENERAL ARRANGEMENT DRAWING OF BRIDGE		

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	CONSULTANT : CE TESTING COMPANY PVT. LTD. 124-A, N.S.C. Bose Road, Kolkata - 700092.
					DATE: APRIL, 2020	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 PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)	SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT	PACKAGE - IIIC
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.				
REVISIONS								

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

KEY PLAN

END OF PACKAGE-II
SURVEY CH:-73+000
DESIGN CH:-69+875

Z.BUALZANG VILLAGE

START OF Package-IIIA
SURVEY CH:-73+000
DESIGN CH:-69+875

KAILAM WILDLIFE SANCTUARY AREA
ESZ AREA

LUNGTHUL (SUANGDOH) VILLAGE

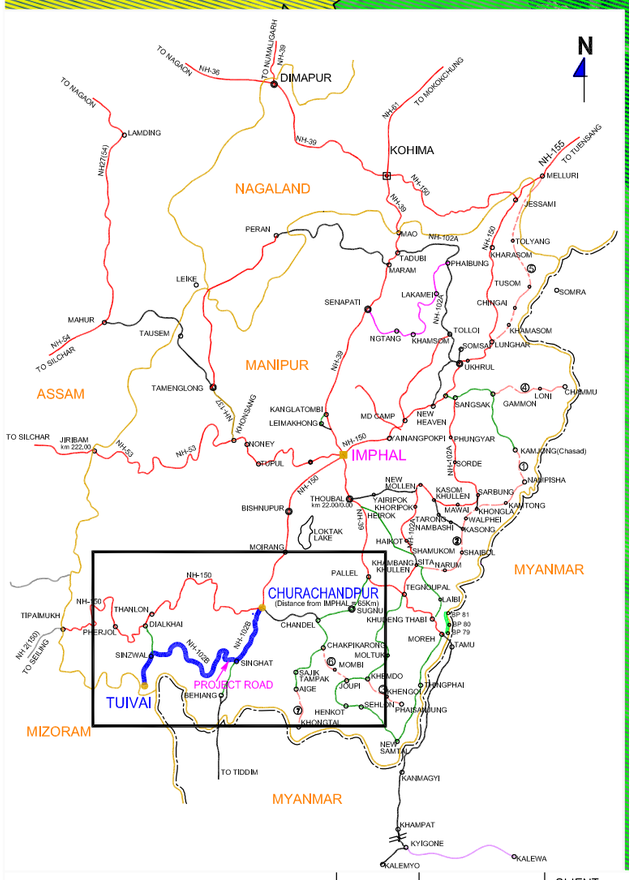
MAYANMAR

START OF Package-IIIC
SURVEY CH:-108+610
DESIGN CH:- 103+525

END OF Package-IIIC
SURVEY CH:-134+272
DESIGN CH:- 121+769

KAILAM WILDLIFE SANCTUARY AREA

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: APRIL, 2020

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 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 - IIIC

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-IIIC/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-S/82	539102.383	2672807.037	1269.304	On the top of parapet
TBM-S/81	539104.270	2672798.851	1269.449	On the top of parapet
TBM-J/100	538834.019	2672989.498	1262.835	On the top of guard wall
TBM-J/106	538443.491	2673288.298	1229.830	On the top of guard wall
TBM-J/105	538444.506	2673292.787	1229.499	On the top of guard wall
TBM-J/104	538455.573	2673093.548	1237.357	On the top of parapet
TBM-J/103	538452.624	2673101.465	1237.041	On the top of parapet
TBM-J/102	538622.696	2673008.169	1250.144	On the top of parapet
TBM-J/101	538619.571	2673015.933	1249.635	On the top of parapet
TBM-J/99	538734.583	2673102.833	1256.055	On the top of guard wall
TBM-J/98	538725.381	2673113.531	1255.834	On the top of guard wall
TBM-S/84	538258.466	2673998.253	1193.376	On the top of guard wall
TBM-S/83	538247.557	2674002.574	1193.395	On the top of guard wall
TBM-S/86	538247.943	2673752.891	1209.012	On the top of guard wall
TBM-S/85	538255.542	2673760.722	1209.311	On the top of guard wall
TBM-S/88	538267.081	2673656.274	1213.687	On the top of parapet
TBM-S/87	538273.829	2673655.078	1213.603	On the top of guard wall
TBM-S/90	538368.093	2673579.306	1216.691	On the top of guard wall
TBM-S/89	538364.111	2673588.052	1216.016	On the top of guard wall
TBM-C90	537770.853	2674254.677	1160.840	On the top of parapet
TBM-C89	537763.998	2674257.558	1160.787	On the top of parapet
TBM-C88	537984.895	2674384.279	1179.178	On the top of parapet
TBM-C87	537978.530	2674381.371	1179.089	On the top of parapet
TBM-B68	537856.393	2673985.609	1161.375	On the top of parapet
TBM-B67	537848.943	2673983.627	1161.194	On the top of parapet
TBM-B66	538029.400	2673683.369	1178.397	On the top of parapet
TBM-B65	538025.031	2673676.071	1178.206	On the top of parapet
TBM-B70	537796.971	2672921.054	1208.107	On the top of parapet
TBM-B69	537791.507	2672926.624	1207.990	On the top of parapet
TBM-B64	537969.939	2673295.323	1190.296	On the top of parapet
TBM-B63	537959.770	2673290.109	1189.911	On the top of parapet
TBM-B78	536480.890	2672791.673	1061.272	On the top of parapet
TBM-B77	536479.594	2672784.333	1061.282	On the top of parapet
TBM-C102	536623.803	2672747.725	1069.060	On the top of parapet
TBM-C101	536624.510	2672755.280	1069.226	On the top of parapet
TBM-C100	537149.386	2672875.839	1096.546	On the top of parapet
TBM-C99	537142.560	2672880.430	1096.061	On the top of parapet
TBM-C98	537372.480	2673064.347	1112.119	On the top of parapet
TBM-C97	537368.196	2673070.725	1112.136	On the top of parapet
TBM-C96	537354.739	2672690.963	1149.969	On the top of parapet
TBM-C95	537361.942	2672686.808	1150.194	On the top of parapet
TBM-C92	537122.770	2672468.973	1168.041	On the top of concrete structrue
TBM-C91	537123.449	2672489.590	1166.224	On the top of concrete structrue
TBM-C94	537311.373	2672241.330	1185.240	On the top of parapet
TBM-C93	537319.402	2672240.764	1185.662	On the top of parapet
TBM-B72	537597.018	2672575.280	1212.916	On the top of parapet
TBM-B71	537603.124	2672569.627	1213.058	On the top of parapet
TBM-C54	533921.882	2669252.519	583.805	On the top of parapet
TBM-C53	533923.898	2669245.761	583.971	On the top of parapet
TBM-C50	533986.424	2669325.945	588.682	On the top of parapet
TBM-C49	533993.132	2669323.022	589.098	On the top of parapet
TBM-C52	534482.297	2669444.624	609.336	On the top of parapet
TBM-C51	534477.804	2669450.125	609.209	On the top of parapet
TBM-B40	534959.444	2669476.828	632.968	On the top of retaining wall
TBM-B39	534965.981	2669471.627	633.172	On the top of retaining wall
TBM-B37	535106.484	2669331.819	633.251	On the top of retaining wall
TBM-B38	535113.173	2669342.878	633.030	On the top of retaining wall
TBM-B34	535293.620	2669227.789	631.543	On the top of parapet
TBM-B33	535286.503	2669225.718	631.667	On the top of parapet
TBM-B36	535498.995	2668814.099	632.053	On the top of retaining wall
TBM-B35	535499.848	2668820.541	631.995	On the top of retaining wall
TBM-C48	535500.004	2669191.755	623.612	On the top of parapet
TBM-C47	535494.042	2669198.758	623.378	On the top of safe guard
TBM-C46	535796.920	2669706.674	618.676	On the top of parapet
TBM-C45	535790.487	2669711.102	618.564	On the top of parapet
TBM-C80	535910.638	2669754.615	621.045	On the top of parapet
TBM-C79	535914.206	2669761.956	620.826	On the top of parapet
TBM-C82	536200.209	2669626.533	610.683	On the top of parapet
TBM-C81	536204.589	2669633.895	610.803	On the top of parapet
TBM-C83	535972.664	2669979.991	634.614	On the top of parapet
TBM-C84	535942.838	2670013.605	633.780	On the top of parapet
TBM-C86	535780.998	2670162.221	628.320	On the top of parapet
TBM-C85	535787.848	2670164.388	628.237	On the top of parapet
TBM-B62	535706.330	2670476.310	621.788	On the top of parapet
TBM-B61	535697.857	2670476.200	621.687	On the top of parapet
TBM-B60	535574.356	2670392.450	610.353	On the top of guard wall
TBM-B59	535564.913	2670371.962	611.204	On the top of parapet
TBM-B58	535534.016	2670191.745	626.017	On the top of parapet
TBM-B57	535528.333	2670192.792	626.154	On the top of parapet
TBM-C78	534300.241	2669957.821	676.023	On the top of parapet
TBM-C77	534293.120	2669964.009	676.069	On the top of parapet
TBM-C74	534225.731	2670335.718	721.625	On the top of parapet
TBM-C73	534232.684	2670334.107	721.654	On the top of parapet
TBM-C76	534380.039	2670477.286	731.625	On the top of parapet
TBM-C75	534385.984	2670481.709	731.966	On the top of parapet
TBM-B56	534476.273	2670852.049	764.583	On the top of parapet
TBM-B55	534482.795	2670846.574	765.026	On the top of parapet
TBM-B52	535231.907	2671468.805	826.699	On the top of parapet
TBM-B51	535223.994	2671468.565	825.760	On the top of parapet
TBM-B54	535428.524	2672000.966	866.303	On the top of parapet
TBM-B53	535433.552	2671995.090	866.426	On the top of parapet
TBM-C72	535648.081	2672300.296	888.802	On the top of parapet
TBM-C71	535649.336	2672293.199	888.910	On the top of parapet
TBM-C70	535737.980	2672520.279	912.124	On the top of parapet
TBM-C69	535746.271	2672521.288	912.540	On the top of parapet
TBM-C104	535810.255	2672516.375	932.973	On the top of parapet
TBM-C103	535817.294	2672516.111	933.175	On the top of parapet
TBM-C106	535839.097	2671907.226	975.807	On the top of parapet
TBM-C105	535835.796	2671914.009	975.859	On the top of parapet

CONTROL POINT LIST

Point No.	Easting (m)	Northing (m)	R.L. (m)
I95	539160.869	2672870.115	1263.825
I98	539070.033	2672850.496	1272.725
I97	539092.443	2672806.608	1269.586
I96	539117.277	2672805.682	1267.396
I100	539031.178	2672936.899	1272.765
I99	539053.161	2672907.937	1273.020
I102	538882.865	2672928.091	1265.543
I101	538973.191	2672917.256	1269.775
I103	538839.789	2672972.999	1263.156
I116	538444.278	2673303.511	1228.449
I115	538439.518	2673278.219	1229.703
I114	538388.448	2673240.808	1230.650
I113	538414.676	2673181.068	1234.818
I112	538417.841	2673139.156	1236.025
I111	538480.314	2673125.520	1239.675
I110	538502.251	2673130.300	1240.685
I109	538516.393	2673098.722	1242.276
I108	538589.140	2673017.558	1247.195
I107	538631.510	2673013.307	1249.880
I106	538644.185	2673080.581	1252.987
I105	538663.310	2673120.285	1252.860
I104	538711.361	2673123.803	1255.228
I129	538219.842	2674040.083	1192.594
I128	538229.531	2674011.709	1193.881
I127	538328.575	2673957.676	1197.979
I126	538328.612	2673918.510	1199.907
I125	538345.188	2673837.569	1205.539
I124	538321.792	2673819.366	1206.775
I123	538238.444	2673744.475	1209.272
I122	538271.212	2673693.220	1212.224
I121	538271.656	2673650.020	1213.273
I120	538350.644	2673616.343	1214.372
I119	538368.429	2673569.196	1215.818
I118	538348.256	2673538.473	1216.514
I117	538355.425	2673510.024	1217.969
Q-10	537778.297	2674149.710	1157.514
Q-9	537756.904	2674222.284	1159.090
Q-8	537792.094	2674355.415	1164.585
Q-7	537787.731	2674472.178	1168.692
Q-6	537825.116	2674483.007	1169.437
Q-5	537881.909	2674438.870	1172.803
Q-4	537972.210	2674419.791	1178.267
Q-3	537990.647	2674366.086	1178.889
Q-2	538111.348	2674227.963	1186.577
Q-1	538142.554	2674170.424	1187.604
Q-14	537918.757	2673747.560	1175.718
Q-13	537928.970	2673799.670	1174.317
Q-12	537845.890	2673855.383	1170.570
Q-11	537851.564	2673988.544	1160.496
Q-17	538034.245	2673490.548	1183.193
Q-16	538037.220	2673547.449	1181.441
Q-15	538028.914	2673679.246	1177.964
Q-25	537740.880	2672905.760	1210.496
Q-24	537796.983	2672924.922	1207.359
Q-23	537907.793	2672999.469	1201.553
Q-22	537940.655	2673050.866	1198.099
Q-21	537976.969	2673199.137	1192.126
Q-20	537962.066	2673290.834	1189.386

CONTROL POINT LIST

Point No.	Easting (m)	Northing (m)	R.L. (m)
Q-26	537621.736	2672754.783	1216.426
V-44	533465.916	2669203.562	560.836
V-43	533535.656	2669183.198	564.554
V-42	533595.843	2669201.856	567.383
V-41	533683.840	2669209.236	571.244
V-40	533787.902	2669263.847	576.659
V-39	533833.941	2669313.934	578.295
V-38	534083.294	2669350.898	591.619
V-37	534192.983	2669302.986	599.106
V-36	534250.397	2669351.696	601.234
V-35	534491.651	2669514.986	610.967
V-34	534656.251	2669540.653	617.078
V-33	534666.111	2669421.591	618.202
V-32	534798.805	2669378.745	624.692
V-31	534831.503	2669388.768	625.161
V-30	534917.854	2669454.144	630.219
V-29	535032.933	2669493.882	633.549
V-28	535097.166	2669559.795	637.624
V-27	535132.608	2669548.558	638.338
V-26	535102.292	2669473.364	637.431
V-25	535164.272	2669388.853	634.477
V-24	535236.367	2669397.461	635.336
V-23	535287.880	2669227.057	631.240
V-22	535308.677	2669186.435	632.169
V-21	535353.569	2669050.917	631.212
V-20	535397.844	2668968.405	630.747
V-19	535435.755	2668894.937	631.494
V-18	535444.534	2668859.001	632.380
V-17	535486.162	2668814.359	631.146
V-16	535511.962	2668823.754	631.077
V-15	535497.873	2668924.533	632.450
V-14	535487.316	2668980.089	632.196
V-13	535490.197	2669040.723	628.692
V-12	535463.000	2669094.853	626.798
V-11	535475.100	2669183.527	624.338
V-10	535459.587	2669254.162	622.257
V-9	535455.537	2669379.083	620.081
V-8	535457.833	2669429.402	619.612
V-7	535412.916	2669482.488	618.827
V-6	535415.867	2669498.318	618.614
V-5	535437.962	2669502.067	618.287
V-4	535505.198	2669505.800	616.838
V-3	535596.912	2669538.866	615.594
V-2	535674.997	2669578.050	613.407
V-1	535768.544	2669697.519	617.423
T113	535904.268	2669760.834	620.363
T112	535947.592	2669753.553	619.409
T111	535993.642	2669719.824	617.097
T110	536022.685	2669685.759	614.171
T109	536030.854	2669648.972	612.775
T108	536013.561	2669605.445	609.747
T107	536024.093	2669572.099	608.084
T106	536080.155	2669517.911	605.096
T105	536134.545	2669498.539	604.181
T104	536177.231	2669472.386	602.483
T103	536213.542	2669463.764	600.440
T102	536221.913	2669489.626	600.755
T101	536167.282	2669549.393	607.325

CONTROL POINT LIST

Point No.	Easting (m)	Northing (m)	R.L. (m)
T61	535025.055	2669959.928	659.340
T60	534978.370	2669969.543	660.348
T59	534916.360	2669952.423	661.645
T58	534844.036	2669969.414	663.612
T57	534743.109	2669911.366	667.611
T56	534618.588	2669882.483	669.976
T55	534543.635	2669811.074	676.683
T54	534358.068	2669758.243	677.990
T53	534293.740	2669903.134	674.817
T52	534294.636	2669983.508	676.232
T51	534136.518	2670041.441	691.479
T50	534084.625	2670202.605	702.303
T49	534045.657	2670244.917	705.943
T48	534089.177	2670290.389	711.216
T47	534213.452	2670318.304	719.371
T46	534252.283	2670403.803	725.924
T45	534357.352	2670447.776	729.971
T44	534385.343	2670467.207	731.202
T43	534366.158	2670536.725	734.685
T42	534281.306	2670630.785	743.665
T41	534322.167	2670803.849	753.756
T40	534435.361	2670851.741	761.698
T39	534479.306	2670847.579	764.412
T38	534507.065	2670895.419	768.452
T37	534569.418	2670897.208	773.782
T36	534600.852	2670909.362	776.686
T35	534614.402	2670941.185	779.326
T34	534638.077	2671057.035	784.825
T33	534646.424	2671114.249	787.531
T32	534681.350	2671140.172	788.578
T31	534702.242	2671179.156	790.261
T30	534778.843	2671252.779	796.435
T29	534844.913	2671239.361	798.632
T28	534890.830	2671255.799	800.949
T27	535016.748	2671259.172	806.431
T26	535068.895	2671250.940	807.724
T25	535136.091	2671245.513	811.086
T24	535152.457	2671324.385	816.901
T23	535183.892	2671384.067	821.260
T22	535226.963	2671430.772	824.563
T21	535222.633	2671501.991	829.002
T20	535240.005	2671522.882	830.663
T19	535319.020	2671571.162	835.820
T18	535347.191	2671668.023	840.828
T17	535315.265	2671728.043	844.384
T16	535329.554	2671769.925	846.583
T15	535321.631	2671850.576	851.335
T14	535350.911	2671892.169	854.394
T13	535352.772	2671976.971	859.630
T12	535422.100	2671994.175	865.373
T11	535472.299	2672027.736	868.647
T10	535486.763	2672076.586	871.362
T9	535543.863	2672166.257	877.227
T8	535707.757	2672303.642	891.738
T7	535737.323	2672356.537	896.394
T6	535704.267	2672398.487	899.998
T5	535735.219	2672436.354	902.864
T4	535689.901	2672489.268	907.908
T3	535744.953	2672522.465	912.032
T2	535647.059	2672611.335	917.382
T1	535647.345	2672638.462	919.037
Q-96	535814.745	2672519.347	932.337
Q-95	535795.846	2672480.551	933.820
Q-94	535824.521	2672442.148	936.320
Q-93	535848.686	2672393.857	939.041
Q-92	535857.973	2672165.463	950.645
Q-91	535850.608	2672117.018	953.004
Q-90	535771.395	2671843.371	967.902
Q-89	535794.230	2671837.481	969.059
Q-88	535863.769	2671926.514	976.496
Q-87	535911.243	2672021.446	980.370
Q-86	535936.415	2672051.173	981.988
Q-85	535962.818	2672152.826	984.716
Q-84	535947.733	2672247.118	989.421
Q-83	535986.206	2672254.970	991.788
Q-82	536016.912	2672274.087	994.287
Q-81	536007.293	2672292.824	995.990
Q-80	535997.069	2672340.979	999.449
Q-79	535990.116	2672415.121	1003.551
Q-78	535986.396	2672457.757	1005.217
Q-77	536034.160	2672526.877	1007.640
Q-76	535967.541	2672621.805	1012.758
Q-75	535897.989	2672629.613	1015.575
Q-74	535885.880	2672648.930	1015.832
Q-73	535933.832	2672741.806	1019.411
Q-72	535959.139	2672786.305	1021.923
Q-71	536007.849	2672833.830	1026.081
Q-70	536095.917	2672888.451	1030.960
Q-69	536141.176	2672945.083	1035.516
Q-68	536165.341	2672951.005	1037.363
Q-67	536184.383	2672810.504	1041.972
Q-66	536200.126	2672797.103	1042.440
Q-65	536316.142	2672805.660	1048.278
Q-64	536331.251	2672831.716	1049.953

GPS LIST

GPS No.	Easting (m)	Northing (m)	R.L. (m)
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	2670040.614	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	562.245

BM LIST

BM No.	Easting (m)	Northing (m)	R.L. (m)	Chainage
BM-132/1	535133.756	2669400.481	634.728	103695.026
BM-132/2	535123.063	2669493.069	637.672	103788.230
BM-132/3	534997.805	2669487.215	633.088	103913.624
BM-133/1	534480.950	2669511.579	610.739	104431.053
BM-133/2	534415.920	2669448.103	609.317	104521.927
BM-133/3	534254.751	2669336.118	600.945	104718.183
BM-134/1	533875.207	2669334.700	580.117	105097.729
BM-134/2	533676.810	2669212.796	571.014	105330.585
BM140/1	532504.694	2666028.297	626.601	108723.945
BM140/2	532319.860	2666019.533	647.933	108908.987
BM140/3	532122.076	2665834.546	667.539	109179.798
BM141/1	531836.194	2665623.865	690.722	109534.924
BM141/2	531603.763	2665495.353	700.636	109800.517
BM141/3	531518.691	2665295.119	705.420	110018.074
BM142/1	531193.594	2665112.476	707.047	110390.963
BM142/2	531127.373	2665050.565	713.325	110481.618
BM142/3	531006.014	2664990.432	718.673	110617.058
BM143/1	530707.225	2665031.995	717.630	110918.723
BM143/2	530800.781	2665126.263	724.237	111051.536
BM143/3	530911.223	2665291.706	731.494	111250.455
BM144/1	530755.742	2665390.502	755.753	111434.670
BM144/2	530849.505	2665227.862	762.966	111622.402
BM144/3	530633.446	2665332.950	776.304	111862.662
BM144/4	530420.784	2665428.904	786.978	112095.969
BM145/1	530360.367	2665150.481	809.967	112380.872
BM145/2	530336.362	2664987.144	825.507	112545.963
BM146/1	530206.885	2664818.296	850.654	112758.740
BM146/2	530374.021	2664633.577	862.679	113007.850
BM146/3	530514.532	2664482.871	862.631	113213.897
BM147/1	530705.318	2664628.096	882.238	113453.667
BM147/2	530594.301	2664445.762	890.057	113667.140
BM147/3	530422.108	2664522.442	901.919	113855.634
BM148/1	530284.634	2664501.710	900.654	113994.663
BM148/2	530338.989	2664338.133	902.030	114167.034
BM148/3	530252.436	2664148.133	891.072	114375.820
BM149/1	530371.616	2664003.014	863.060	114563.605
BM149/2	530411.734	2663836.681	844.534	114734.708
BM149/3	530226.763	2663784.491	836.254	114926.901
BM150/1	529962.841	2663476.839	807.026	115332.246
BM150/2	529873.412	2663319.812	791.336	115512.953
BM150/3	529845.537	2663117.293	772.523	115717.381
BM151/1	529684.320	2662928.684	743.419	115965.503
BM151/2	529493.015	2662955.398	729.753	116158.664
BM152/1	529403.678	2662606.034	710.446	116519.269
BM152/2	529281.294	2662544.260	717.555	116656.360
BM152/3	529175.919	2662409.081	721.414	116827.758
BM153/1	528956.750	2662125.908	714.431	117185.839
BM153/2	528912.051	2661863.014	706.041	117452.506
BM153/3	528716.699	2661821.846	708.699	117652.149
BM154/1	528476.748	2661410.439	729.245	118128.418
BM154/2	528374.991	2661286.350	737.281	118288.894
BM154/3	528256.571	2661073.394	736.675	118532.561
BM155/1	528047.180	2660727.348	754.391	118937.026
BM155/2	527918.613	2660584.345	763.091	119129.326
BM156/1	527274.410	2659981.728	734.703	120011.451
BM157/1	526981.176	2659810.522	714.869	120351.007
BM157/2	526976.067	2659623.984	703.105	120537.615
BM157/1	526981.176	2659810.522	714.869	120724.222
BM157/2	526976.067	2659623.984	703.105	120910.830
BM-158/1	526590.408	2659187.950	661.729	121492.946
BM-158/2	526570.314	2658947.859	646.038	121733.876

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: APRIL, 2020

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 PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

LIST OF TBM, CP, BM & GPS

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

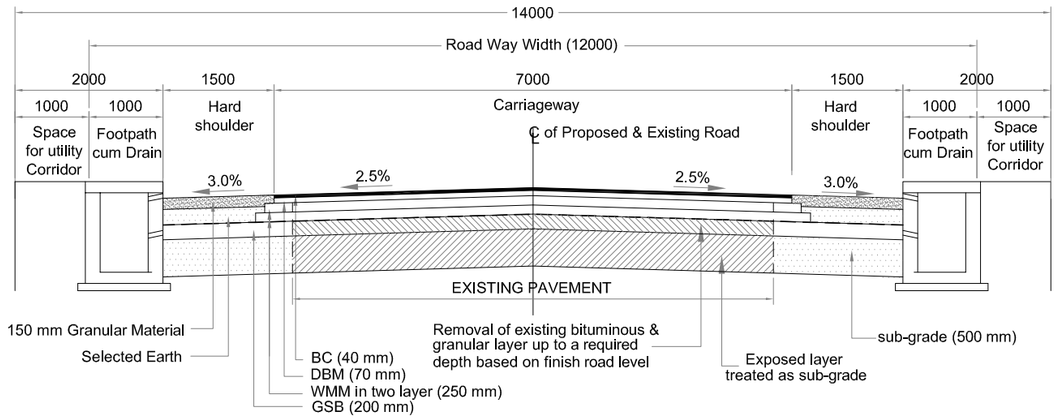
CONSULTANT : CE TESTING COMPANY PVT. LTD.
CETEST Engineering Consultants
An ISO 9001, 14001 & OHSAS18001 Certified Company
124-A, N.S.C. Bose Road,
Kolkata - 700092.

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IIIC/TCBG

REVISION MKD. - R0 | SHEET NO. - 01

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

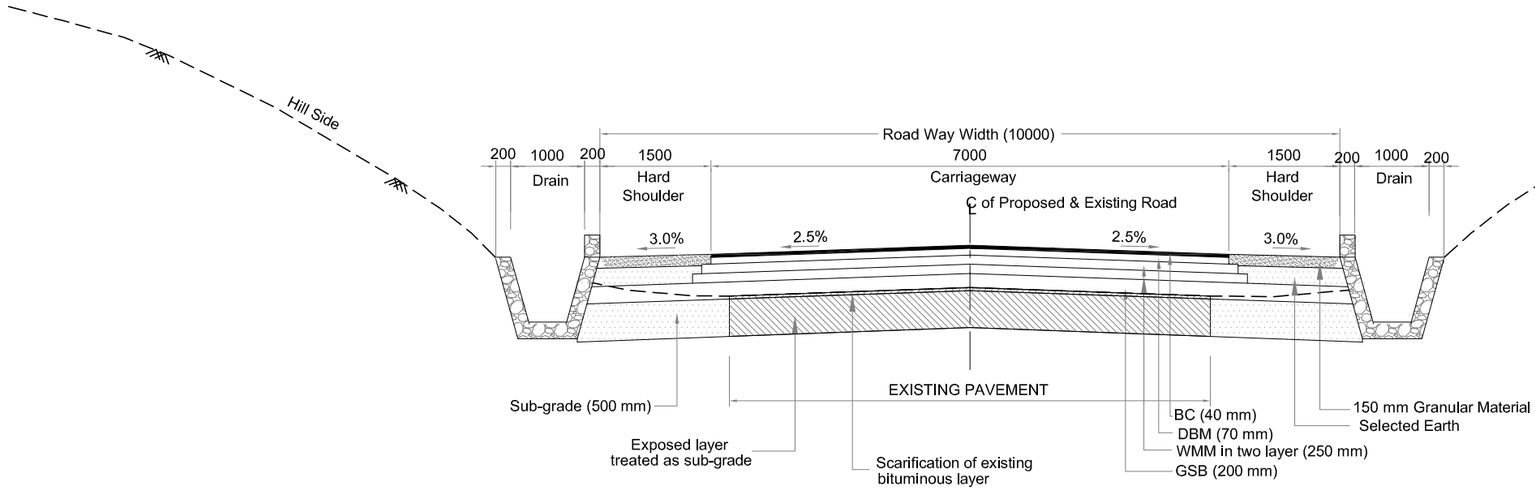
TYPICAL CROSS SECTION



TCS-1		
Chainage (Km)		Length (m)
From	To	
108200	109350	1150
Total Length (m)		1150

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-6		
Chainage (Km)		Length (m)
From	To	
103525	103800	275
103850	104000	150
104140	104320	180
104370	104475	105
104630	104730	100
106150	106225	75
106785	106850	65
107340	107420	80
109400	109590	190
110250	110630	380
113650	113775	125
114435	114700	265
114765	115015	250
115230	115600	370
116025	116150	125
116475	117500	1025
Total Length (m)		3760

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)

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- 1 : 75

DATE: APRIL, 2020

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 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

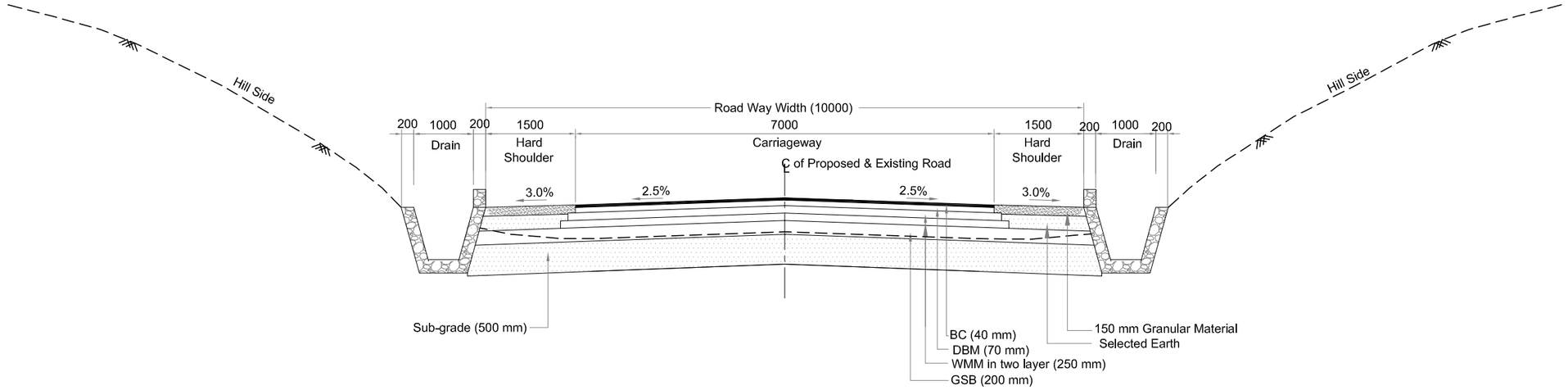
PACKAGE - IIIC

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

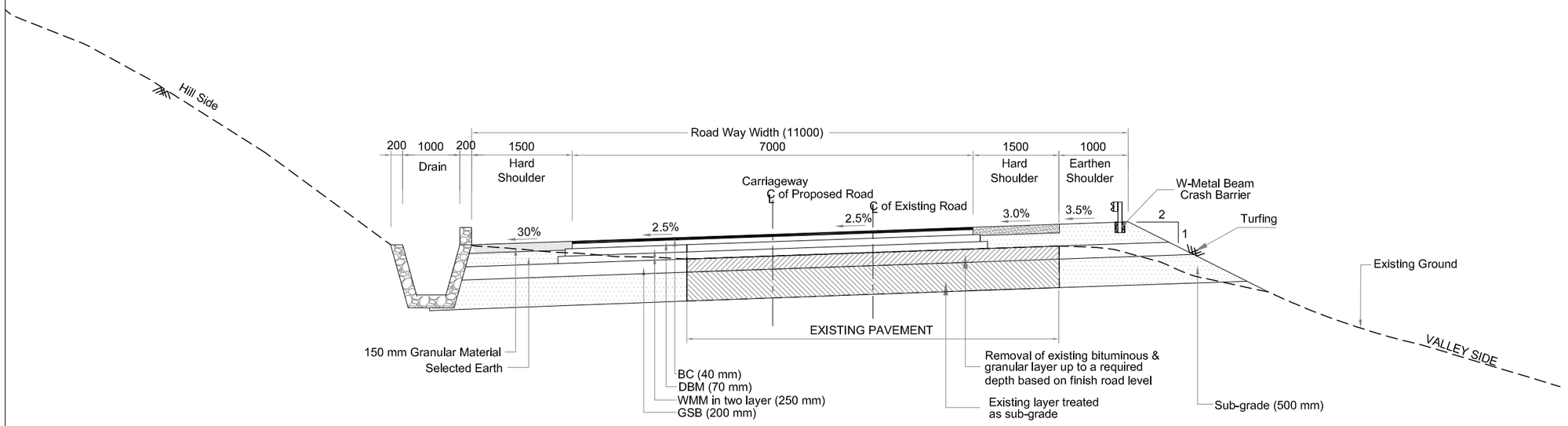
DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IIIC/TCS			
REVISION MKD. - R0		SHEET NO. - 01	
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS



TCS-6A		
Chainage (Km)		Length (m)
From	To	
117500	117900	400
118275	118670	395
119475	119540	65
119920	120225	305
120450	120600	150
121475	121620	145
Total Length (m)		1460

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

(NEW CONSTRUCTION)



TCS-7		
Chainage (Km)		Length (m)
From	To	
104475	104630	155
105900	105950	50
106300	106430	130
106500	106565	65
106850	107250	400
107290	107340	50
107420	108200	780
109625	109720	95
109850	110250	400
110630	110750	120
110800	111050	250
111100	111440	340
111580	111670	90
111720	111740	20
111900	112025	125
112110	112150	40
112425	112575	150
112630	112690	60
112975	113050	75
113185	113340	155
113370	113420	50
113440	113575	135
114175	114260	85
115680	116025	345
116150	116475	325
Total Length (m)		4490

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)

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.
REVISIONS				

Scale :- 1 : 75

DATE: APRIL, 2020

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 PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

TYPICAL CROSS SECTION

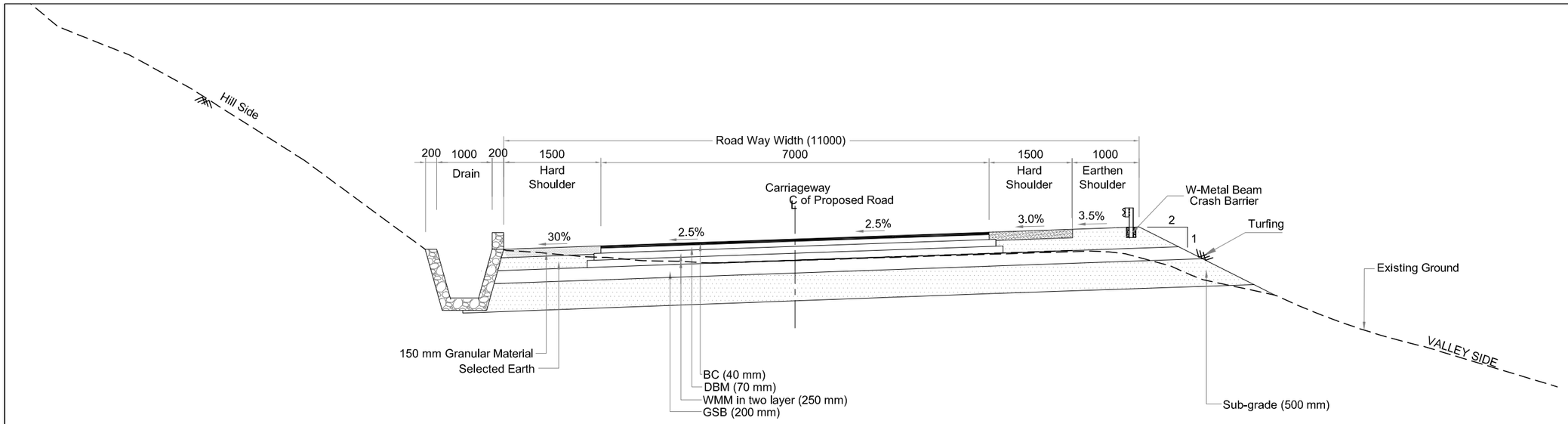
SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

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-IIIC/TCS

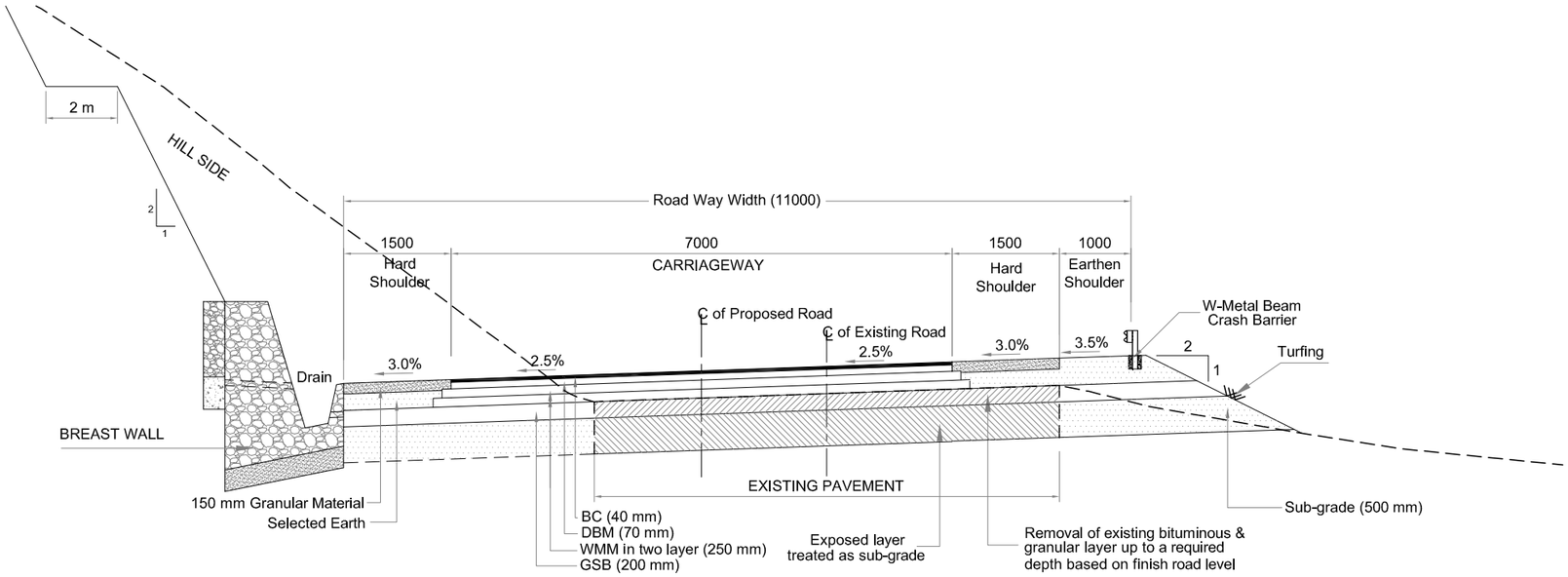
REVISION MKD. - R0		SHEET NO. - 02	
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS



TCS-7A		
Chainage (Km)		Length (m)
From	To	
119275	119360	85
119750	119825	75
119875	119920	45
120725	120820	95
120870	121100	230
121160	121250	90
121300	121370	70
Total Length (m)		690

TCS-7A : 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

(NEW CONSTRUCTION)



TCS-8		
Chainage (Km)		Length (m)
From	To	
112740	112875	135
Total Length (m)		135

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: APRIL, 2020

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 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

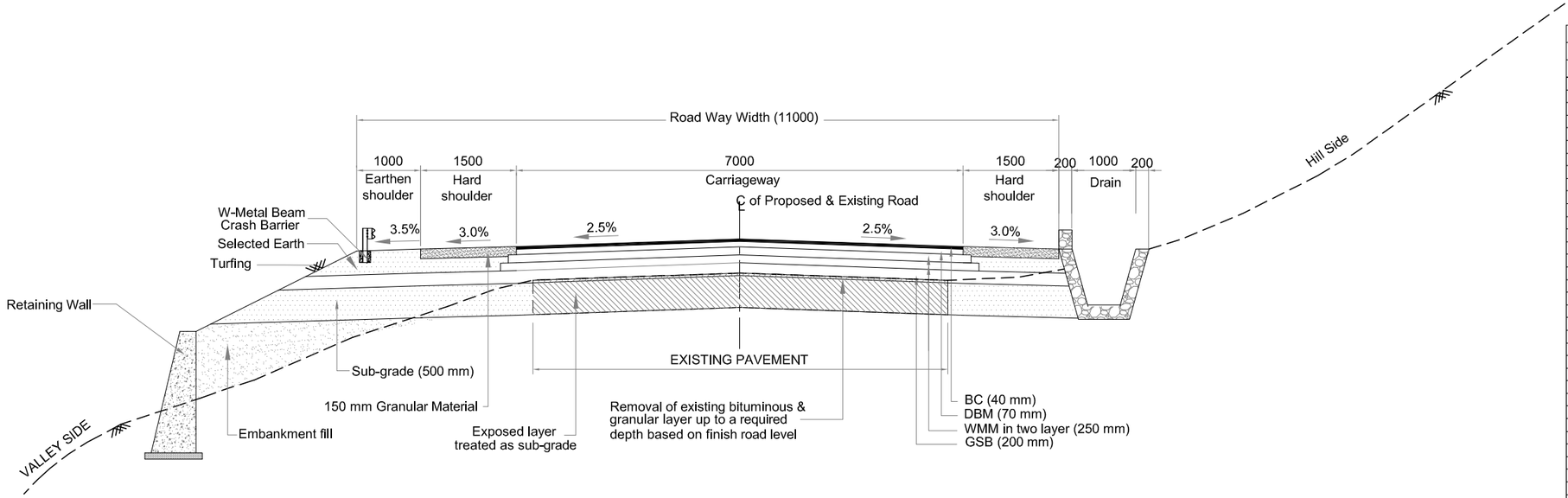
PACKAGE - IIIC

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-IIIC/TCS

REVISION MKD. - R0 | SHEET NO. - 03

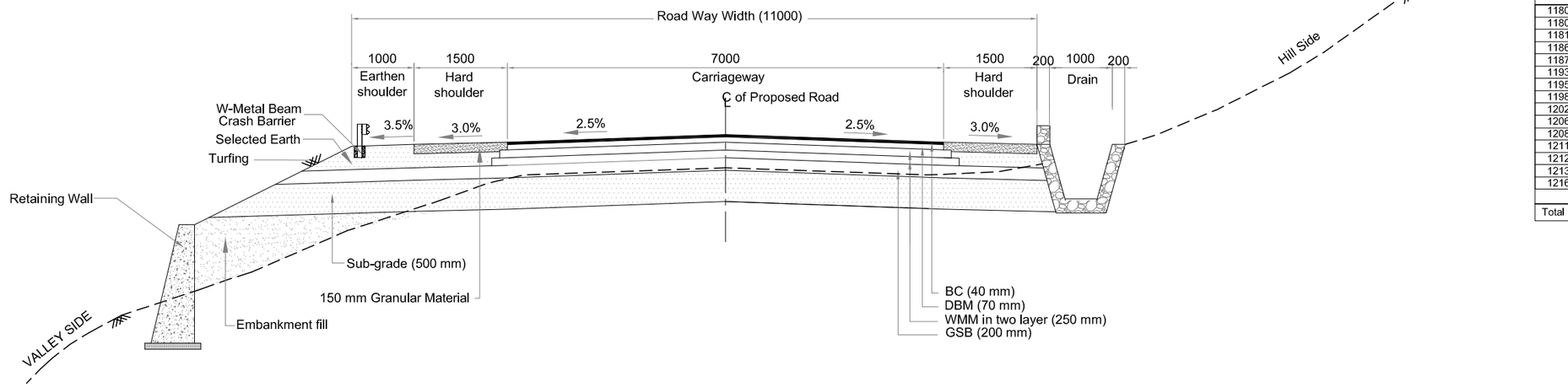
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS



TCS-11		
Chainage (Km)		Length (m)
From	To	
104000	104100	100
105125	105200	75
105200	105250	50
105250	105350	100
105450	105525	75
105640	105725	85
105725	105850	125
105850	105900	50
105950	106150	200
106225	106300	75
106430	106500	70
106565	106725	160
107250	107290	40
109590	109625	35
109720	109850	130
110750	110800	50
111050	111100	50
111440	111580	140
111670	111720	50
111740	111900	160
112025	112110	85
112150	112425	275
112575	112630	55
112690	112740	50
112875	112975	100
113050	113090	40
113090	113185	95
113340	113370	30
113420	113440	20
113575	113650	75
113775	114175	400
114260	114435	175
114700	114765	65
115015	115230	215
115600	115680	80
Total Length (m)		3580

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)



TCS-11A		
Chainage (Km)		Length (m)
From	To	
118020	118080	60
118080	118175	95
118175	118275	100
118670	118700	30
118725	119275	550
119360	119475	115
119540	119750	210
119825	119875	50
120225	120450	225
120600	120725	125
120820	120870	50
121100	121160	60
121250	121300	50
121370	121475	105
121620	121769	149
Total Length (m)		1974

TCS-11A :-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

(NEW CONSTRUCTION)

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.
REVISIONS				

Scale :- 1 : 75

DATE: APRIL, 2020

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 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 - IIIC

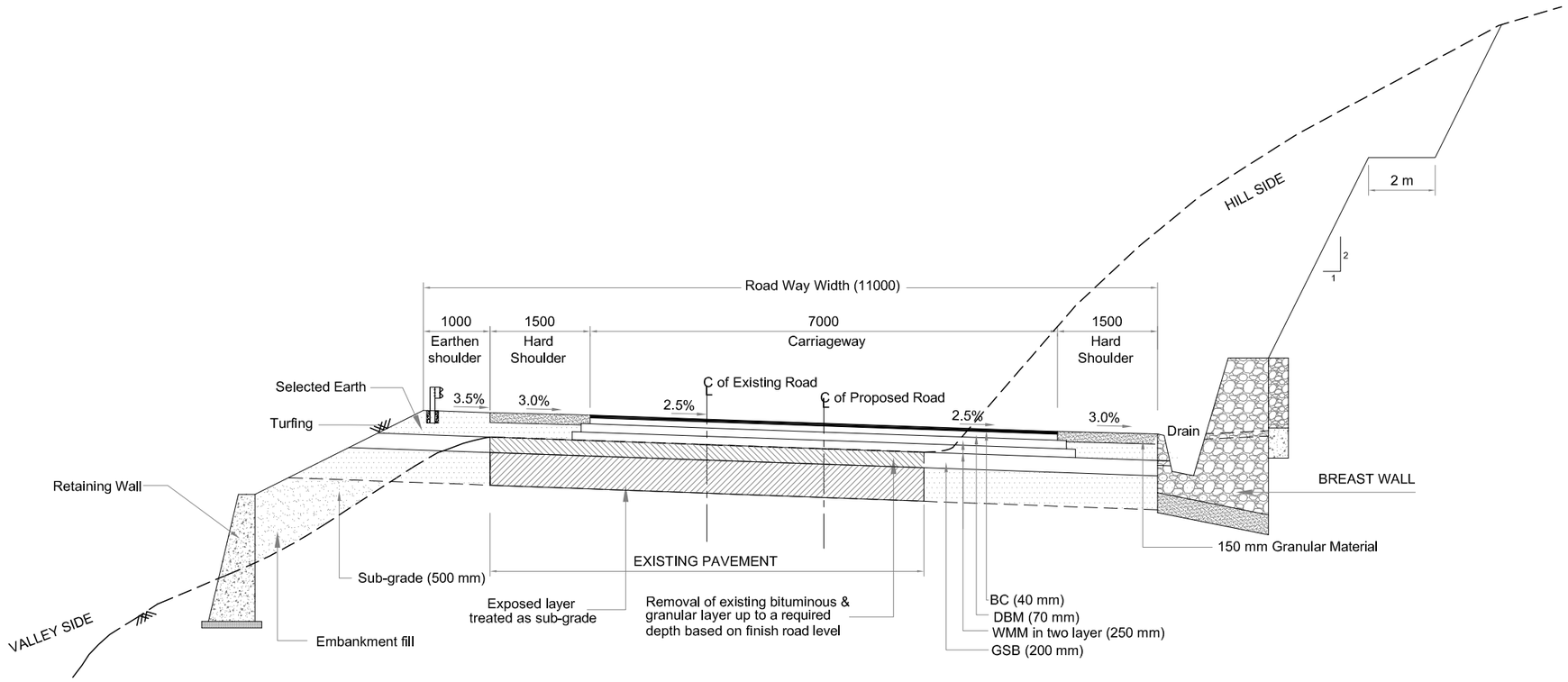
CONSULTANT : CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092.

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

REVISION MKD. - R0 | SHEET NO. - 04

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

TCS-12		
Chainage (Km)		Length (m)
From	To	
104730	104780	50
Total Length (m)		50



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

(RECONSTRUCTION OF EXISTING PAVEMENT)

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- 1 : 75

DATE: APRIL, 2020

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 - IIIC

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-IIIC/TCS

REVISION MKD. - R0 | SHEET NO. - 05

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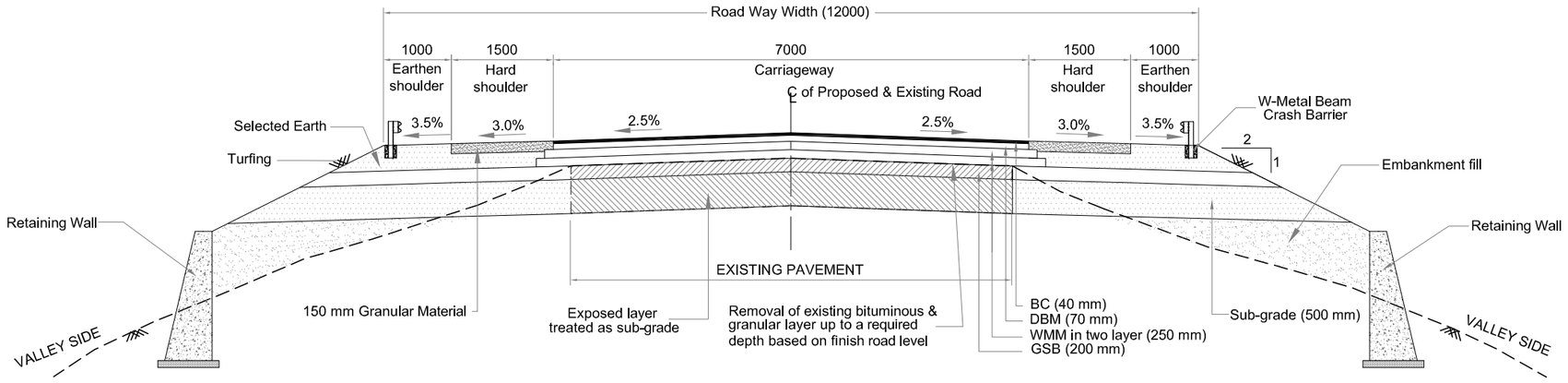
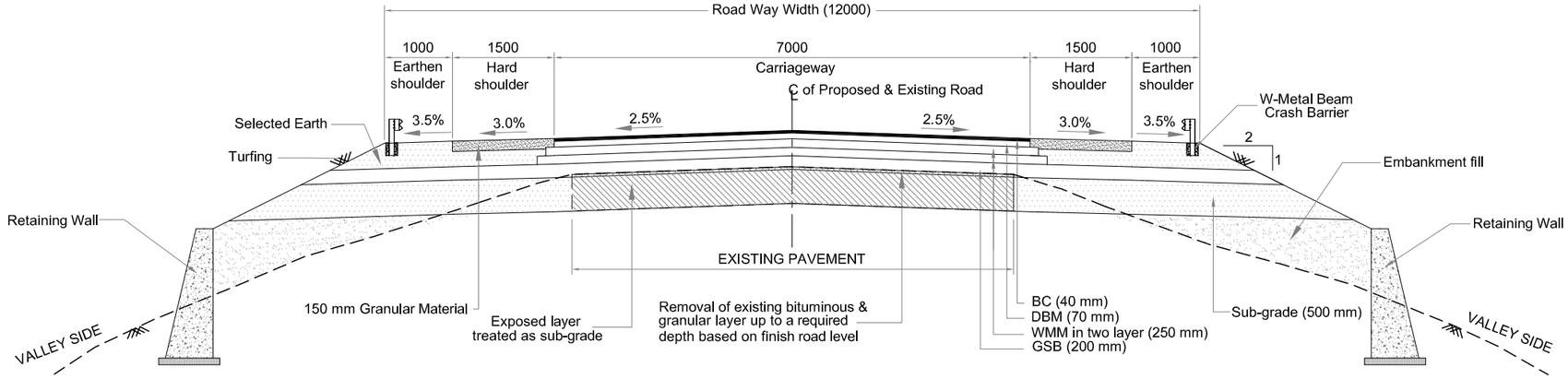
S.MANDAL	B.DAS	S.SADHU	A.K.DAS



TCS-13		
Chainage (Km)		Length (m)
From	To	
104100	104140	40
Total Length (m)		40

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)



TCS-13A		
Chainage (Km)		Length (m)
From	To	
118700	118725	25
Total Length (m)		25

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

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.
REVISIONS				

Scale :- 1 : 75

DATE: APRIL, 2020

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 - IIIC

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124-A, N.S.C. Bose Road
Kolkata - 700092.

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

REVISION MKD. - R0 | SHEET NO. - 06

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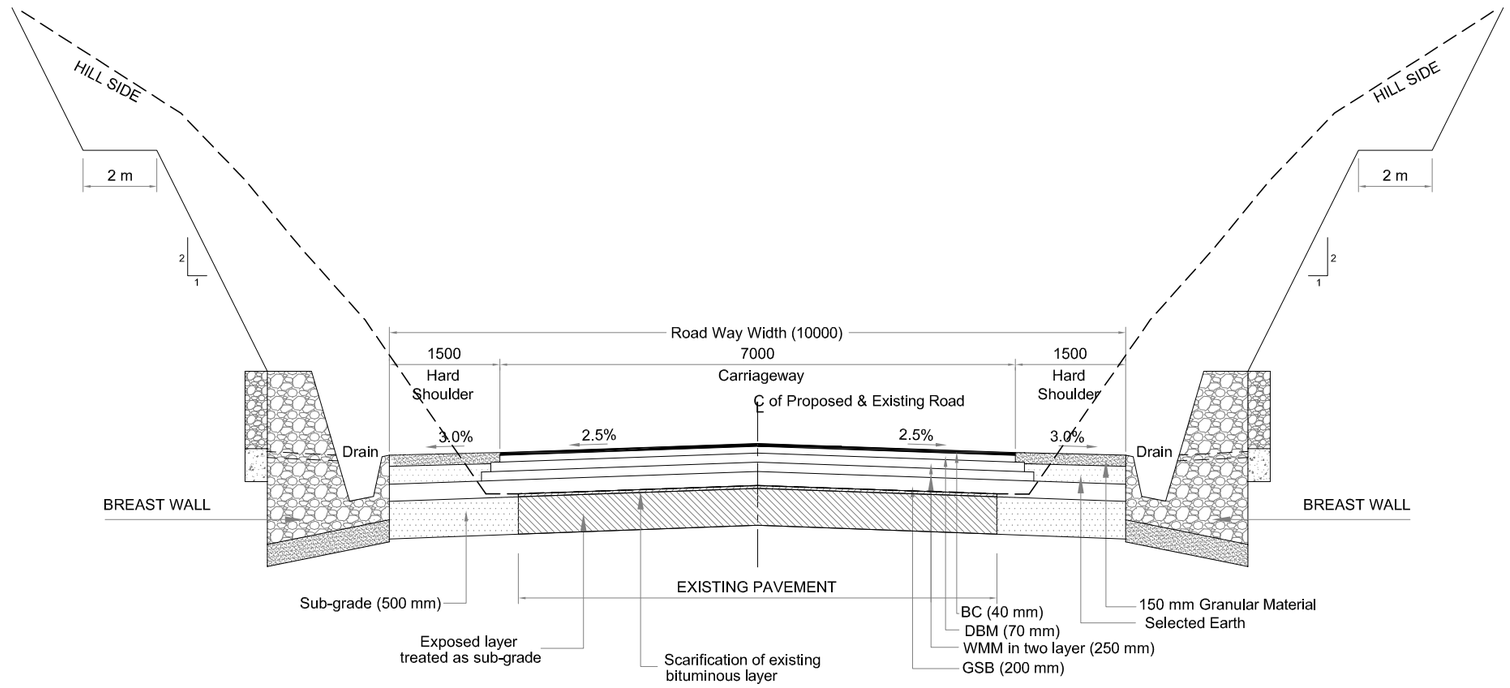
S.MANDAL	B.DAS	S.SADHU	A.K.DAS



TCS-15		
Chainage (Km)		Length (m)
From	To	
103800	103850	50
104320	104370	50
Total Length (m)		100

TCS-15 :- TYPICAL CROSS SECTION OF TWO LANE CARRIAGEWAY WITH HARD SHOILDER IN RURAL AREA WITH BOTH SIDE BREAST WALL (RECONSTRUCTION OF EXISTING PAVEMENT)

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- 1 : 75

DATE: APRIL, 2020

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

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TYPICAL CROSS SECTION

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

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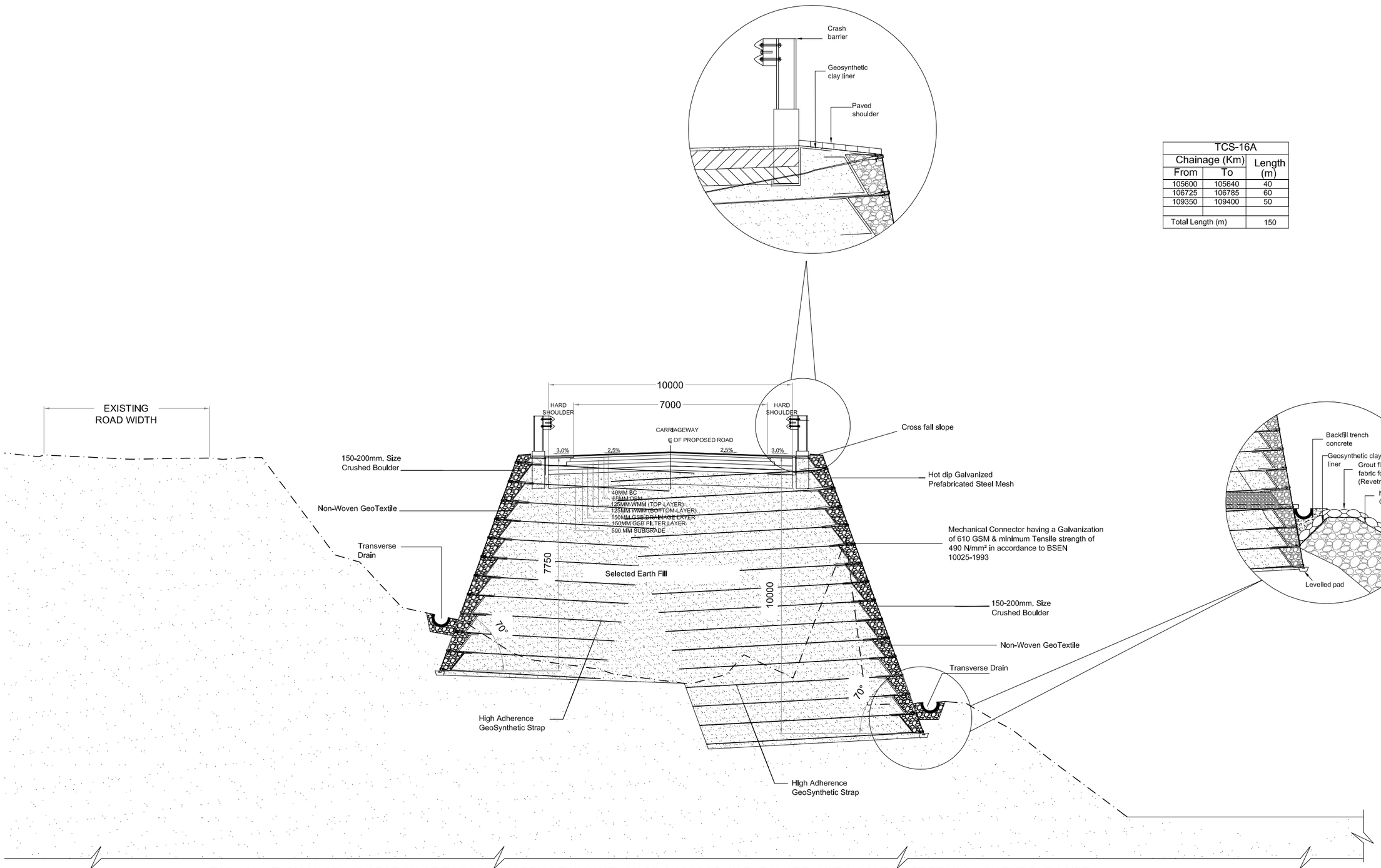
124-A, N.S.C. Bose Road
Kolkata - 700092.

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

REVISION MKD. - R0 | SHEET NO. - 07

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

TCS-16A		
Chainage (Km)		Length (m)
From	To	
105600	105640	40
106725	106785	60
109350	109400	50
Total Length (m)		150



TCS-16A :- TYPICAL CROSS SECTION OF TWO LANE CARRIAGEWAY WITH HARD SHOILDER IN RURAL AREA WITH COMPOSITE RE WALL ON THE BOTH SIDE (NEW CONSTRUCTION)

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.
REVISIONS				

Scale :- 1 : 75

DATE: APRIL, 2020

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

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TYPICAL CROSS SECTION

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

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-IIIC/TCS

REVISION MKD. - R0 | SHEET NO. - 08

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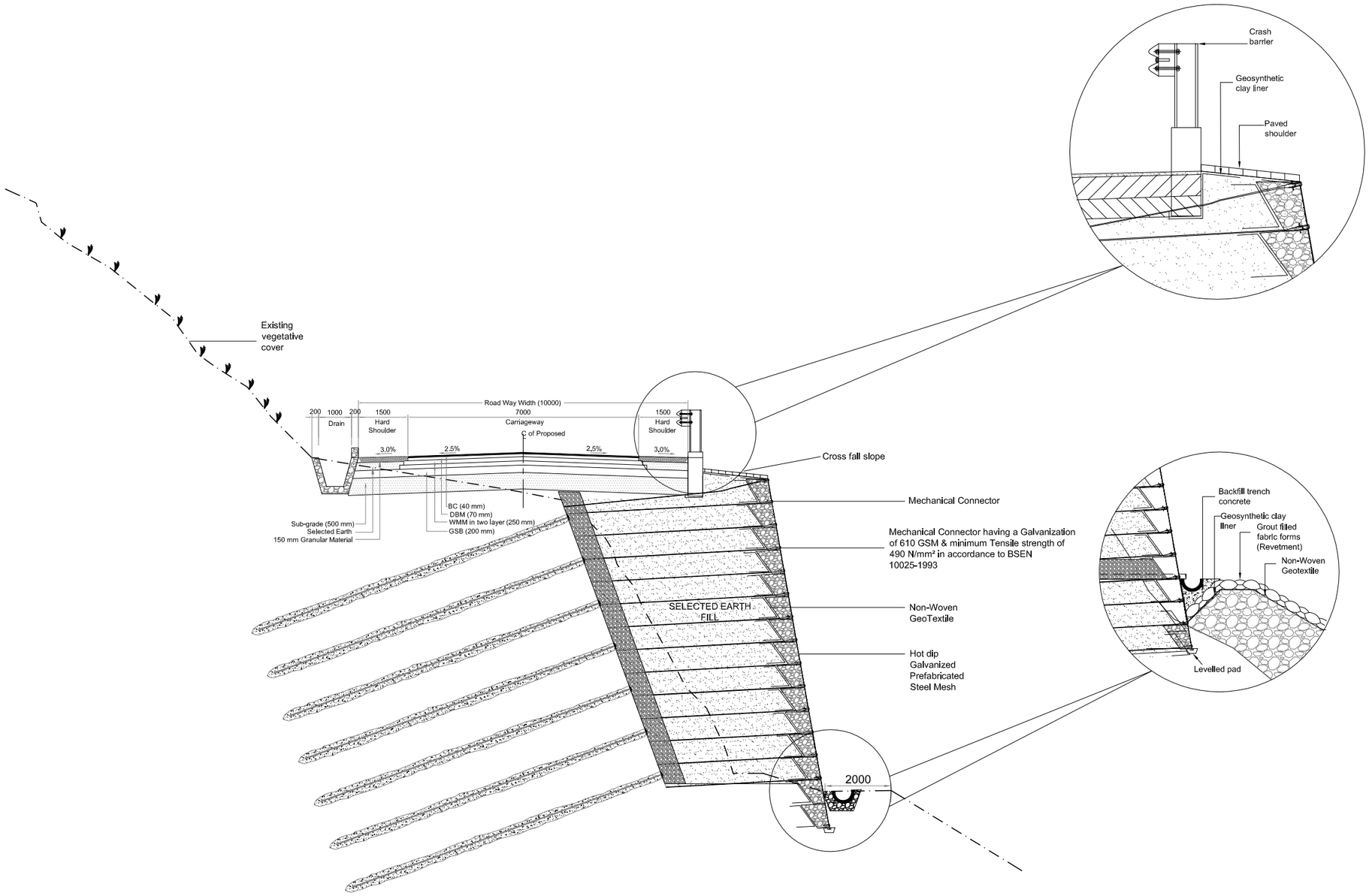
S.MANDAL	B.DAS	S.SADHU	A.K.DAS



TCS-17A		
Chainage (Km)		Length (m)
From	To	
104780	105125	345
105350	105450	100
105525	105600	75
117900	118020	120
Total Length (m)		640

TCS-17A :- TYPICAL CROSS SECTION OF TWO LANE CARRIAGEWAY WITH HARD SHOILDER IN RURAL AREA WITH COMPOSITE RE WALL ON VALLEY SIDE AND 'v' DRAIN ON HILL SIDE.

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.
REVISIONS				

Scale :- 1 : 75

DATE: APRIL, 2020

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PTI Building,3rd Floor, 4 Parliament Street,
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TYPICAL CROSS SECTION

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

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-IIIC/TCS

REVISION MKD. - R0 | SHEET NO. - 09

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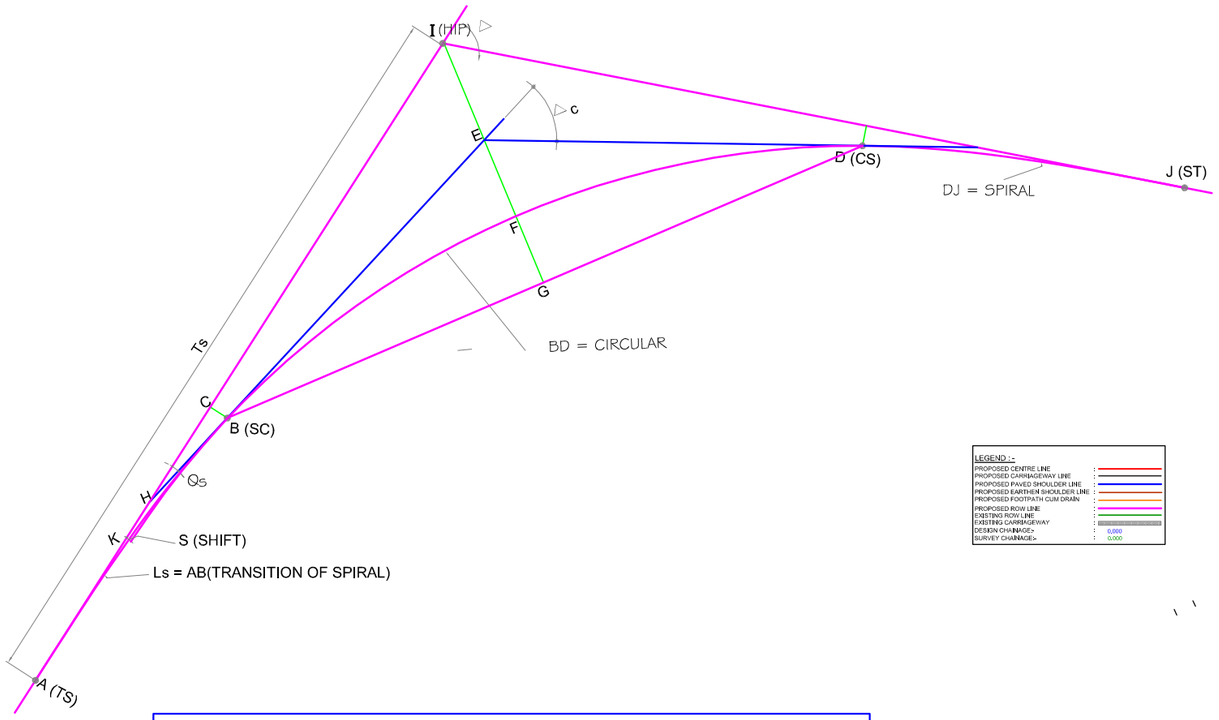
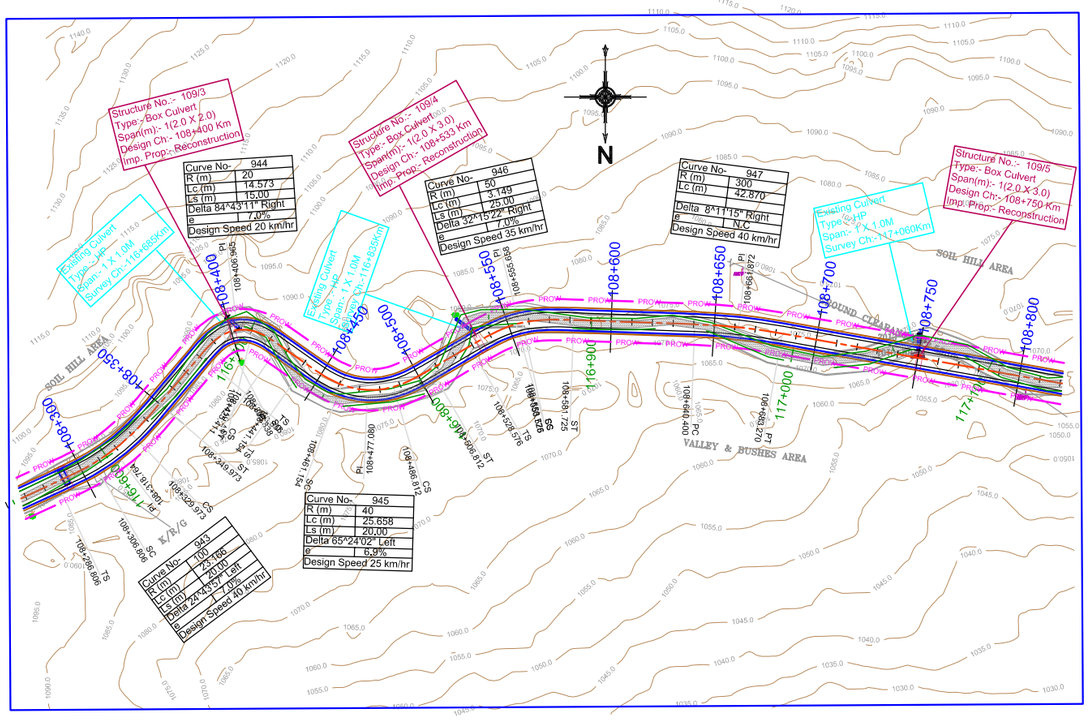
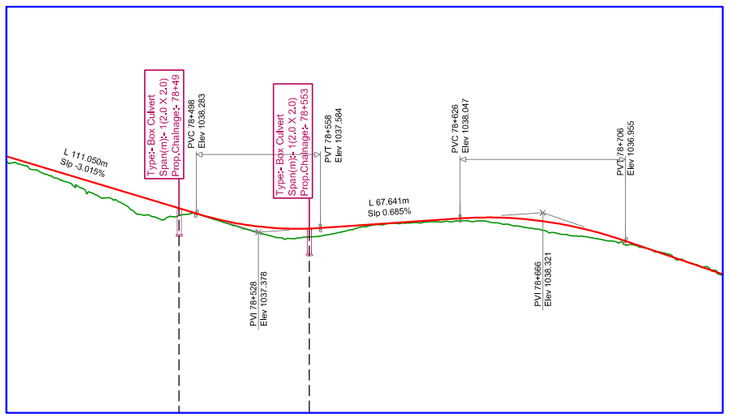
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

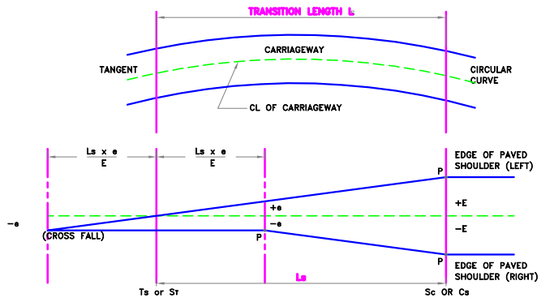
LEGEND



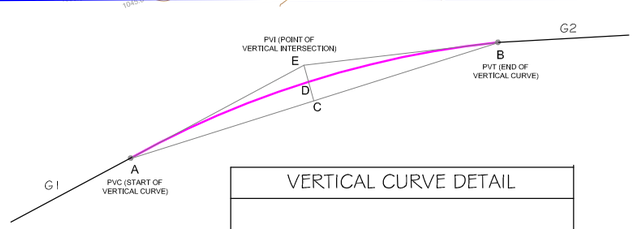


LEGEND :-
PROPOSED CENTRE LINE
PROPOSED CARRIAGEWAY LINE
PROPOSED PAVED SHOULDER LINE
PROPOSED EARTHEN SHOULDER LINE
PROPOSED FOOTPATH CUM DRAIN
PROPOSED ROW LINE
EXISTING ROW LINE
EXISTING CARRIGEWAY
DESIGN CHAINAGE> 0.000
SURVEY CHAINAGE> 0.000





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 = $\frac{Ls}{2R}$ C
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	=	**(IF)** = 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) Δ
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: APRIL, 2020

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
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LEGEND

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

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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-IIIC/LEGEND
REVISION MKD. - R0
SHEET NO. - 01

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

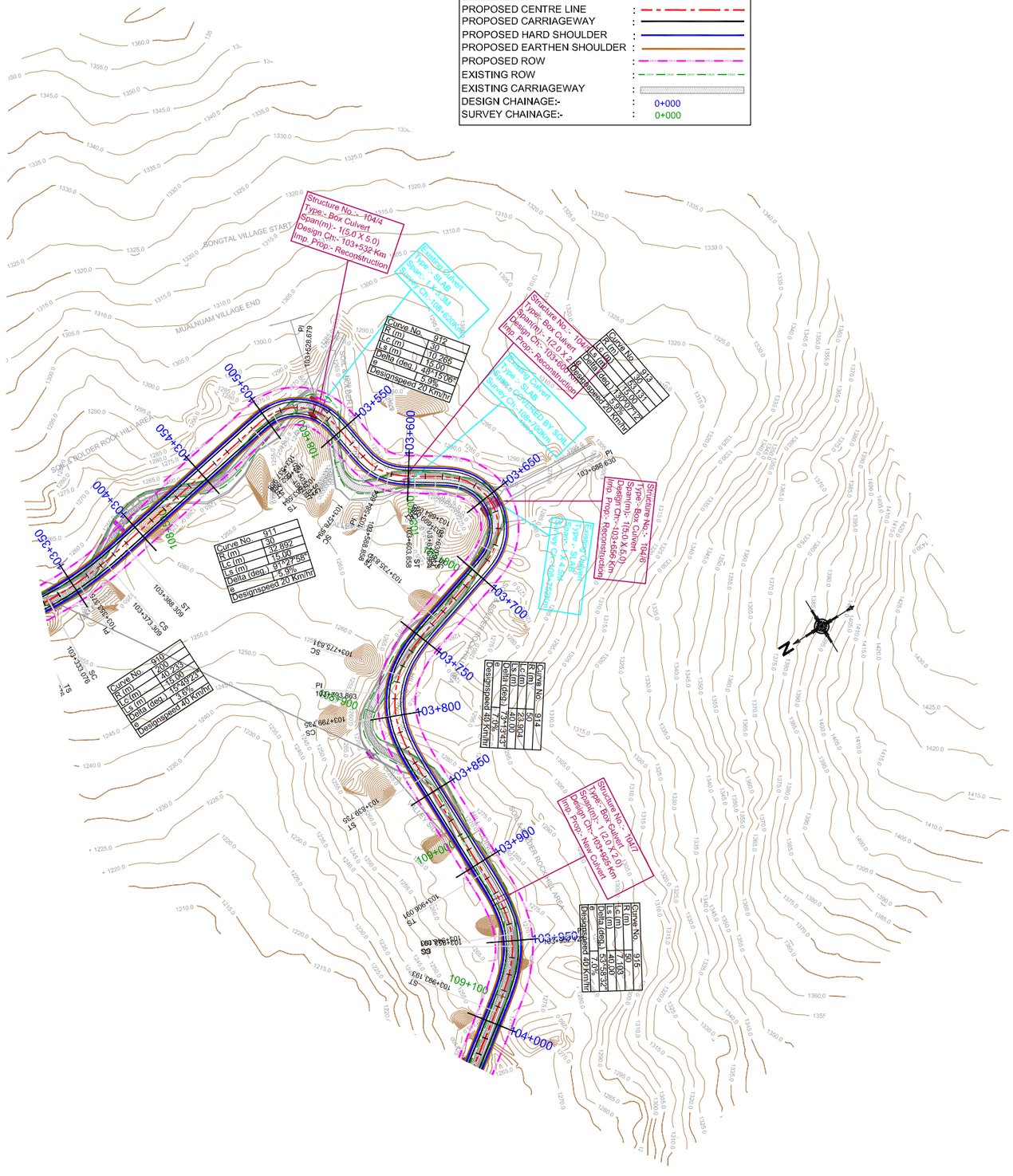
PLAN & PROFILE

CHURACHANDPUR

TUIVAI

LEGEND : -

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



MKD.	DATE	DESCRIPTION	CHKD.	APPRD.	Scale :- 1:2000	CLIENT:	NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building,3rd Floor, 4 Parliament Street, New Delhi - 110001
					DATE: APRIL, 2020	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 PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

REVISIONS

PLAN

Km 103+525 to Km 104+000

SUBMISSION TYPE :

FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

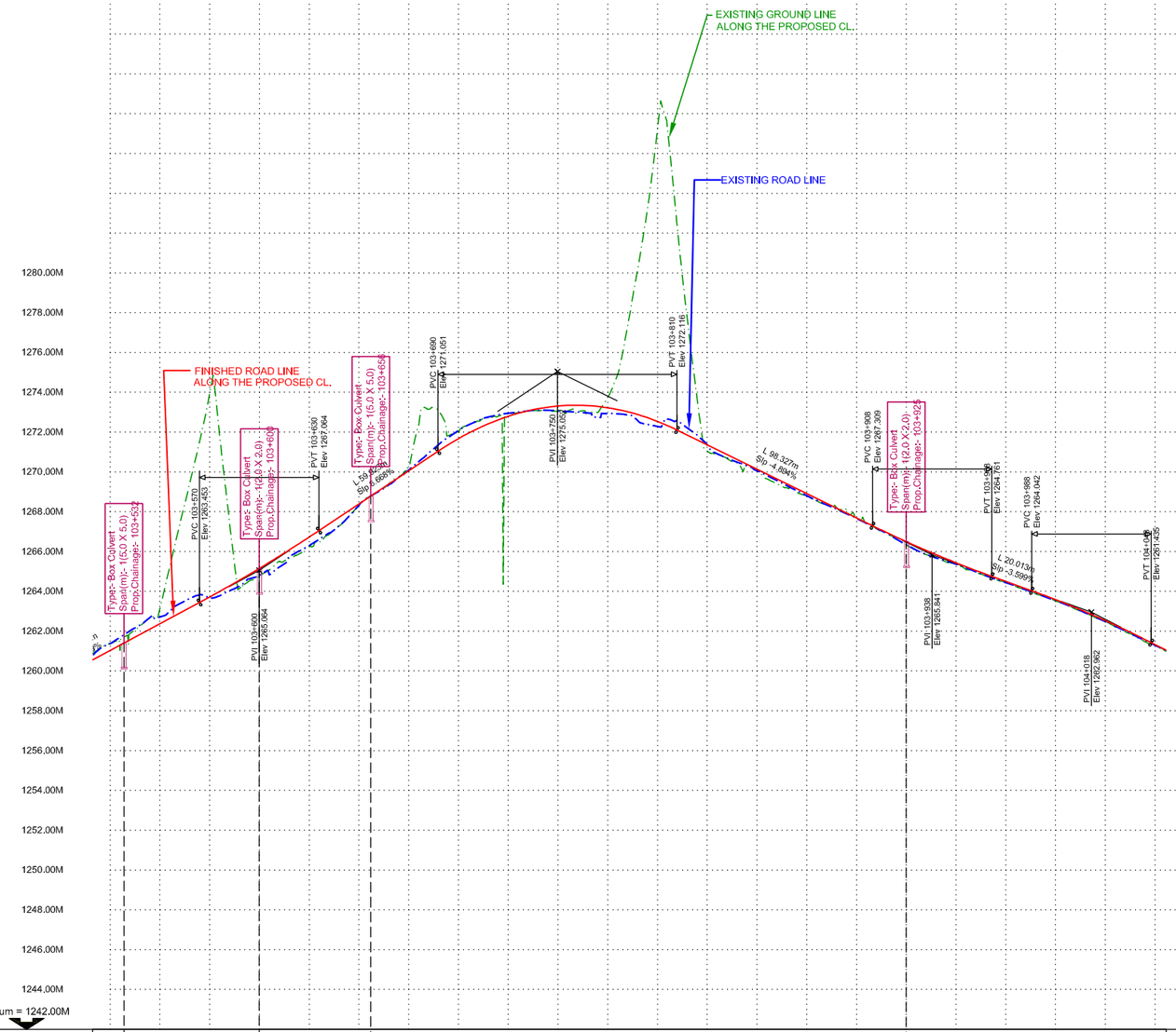
CONSULTANT :

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-IIIC/PLAN

REVISION MKD. - R0 | SHEET NO. - 01

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.
1280.00M
1278.00M
1276.00M
1274.00M
1272.00M
1270.00M
1268.00M
1266.00M
1264.00M
1262.00M
1260.00M
1258.00M
1256.00M
1254.00M
1252.00M
1250.00M
1248.00M
1246.00M
1244.00M
Datum = 1242.00M
Type:- Box Culvert
Span(no:- 1(5.0 X 5.0)
Prop.Chainage:- 103+532
PVC 103+570
Elev 1263.453
Type:- Box Culvert
Span(no:- 1(2.0 X 2.0)
Prop.Chainage:- 103+600
PVI 103+600
Elev 1265.064
PVT 103+630
Elev 1267.064
Type:- Box Culvert
Span(no:- 1(5.0 X 5.0)
Prop.Chainage:- 103+656
L 50.405
Slp 4.669%
PVC 103+690
Elev 1271.051
PVI 103+750
Elev 1276.064
PVT 103+810
Elev 1272.116
L 98.327m
Slp -1.894%
PVC 103+908
Elev 1267.309
Type:- Box Culvert
Span(no:- 1(2.0 X 2.0)
Prop.Chainage:- 103+925
PVI 103+938
Elev 1265.941
PVT 103+966
Elev 1264.761
L 20.013m
Slp -3.599%
PVC 103+988
Elev 1264.042
PVT 104+008
Elev 1261.455
PVI 104+018
Elev 1262.962

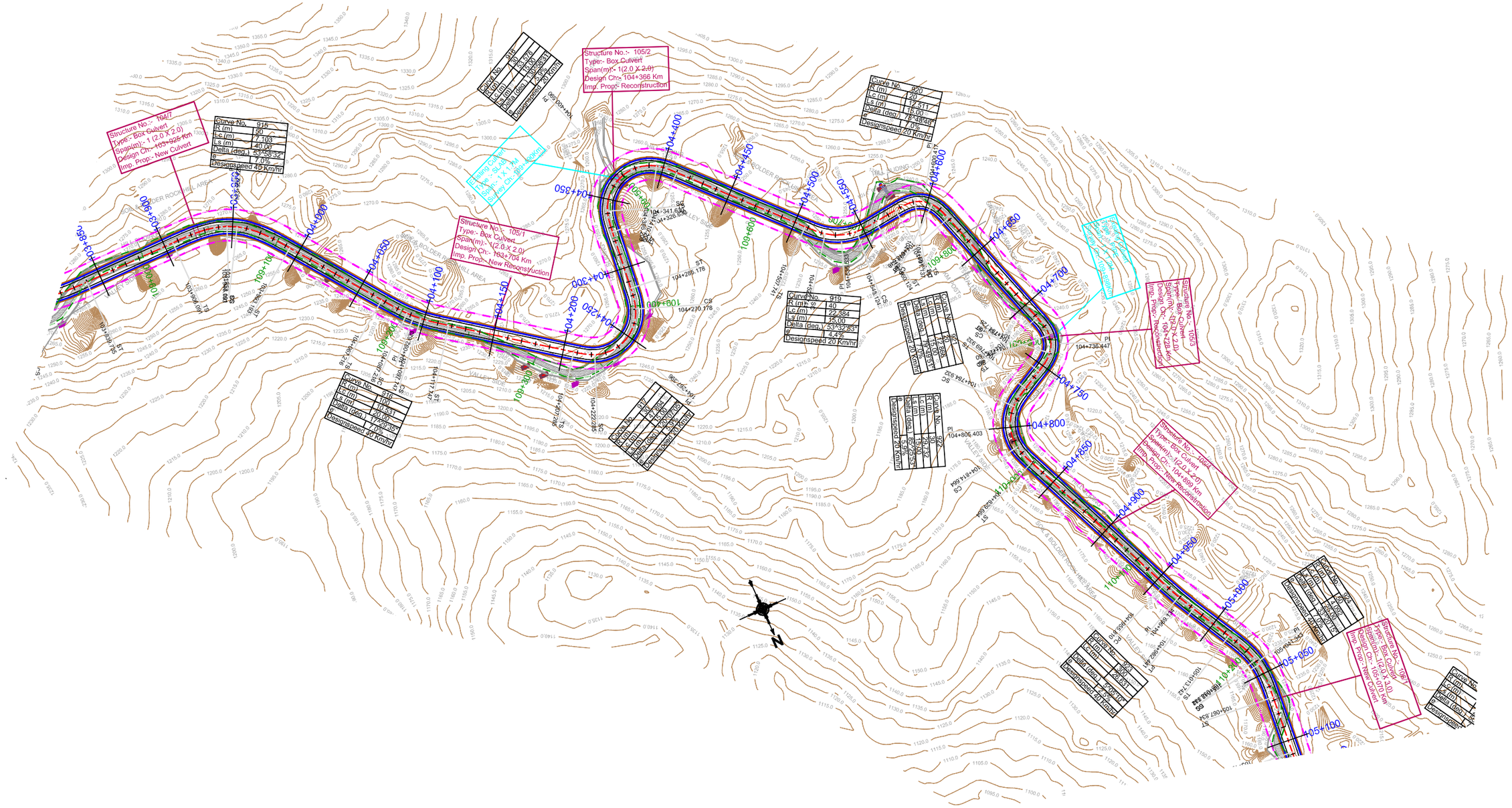
| | | |

CHURACHANDPUR

TUIVAI

LEGEND : -

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


Structure No.:- 104/7
Type:- Box Culvert
Span(m):- 1 (2.0 X 2.0)
Design Ch:- 104+925 Km
Imp. Prop:- New Culvert
Curve No. 915
R (m) 50
Ls (m) 7.103
Ls (m) 40.06
Delta (deg.) 53°58'32"
e 7.0%
Designspeed 40 Km/hr
Structure No.:- 105/2
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 104+366 Km
Imp. Prop:- Reconstruction
Curve No. 916
R (m) 100
Lc (m) 10.941
Delta (deg.) 6°16'
e 7.0%
Designspeed 40 Km/hr
Curve No. 917
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 920
R (m) 20
Lc (m) 12.511
Ls (m) 16.00
Delta (deg.) 78°48'46"
e 7.0%
Designspeed 20 Km/hr
Structure No.:- 105/1
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 103+704 Km
Imp. Prop:- New Reconstruction
Curve No. 919
R (m) 40
Lc (m) 22.584
Ls (m) 25.00
Delta (deg.) 53°32'83"
e 4.4%
Designspeed 20 Km/hr
Curve No. 921
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 922
R (m) 20
Lc (m) 12.511
Ls (m) 16.00
Delta (deg.) 78°48'46"
e 7.0%
Designspeed 20 Km/hr
Structure No.:- 105/3
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 104+728 Km
Imp. Prop:- Reconstruction
Curve No. 923
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Structure No.:- 105/4
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 104+999 Km
Imp. Prop:- New Reconstruction
Curve No. 924
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Structure No.:- 106/1
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 104+970 Km
Imp. Prop:- New Culvert
Curve No. 925
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 926
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 927
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 928
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 929
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 930
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 931
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 932
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 933
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 934
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 935
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 936
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 937
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 938
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 939
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 940
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 941
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 942
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 943
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 944
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 945
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 946
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 947
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
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Designspeed 40 Km/hr
Curve No. 948
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
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Designspeed 40 Km/hr
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R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 950
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 951
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 952
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 953
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 954
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 955
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 956
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 957
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 958
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
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R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
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Designspeed 40 Km/hr
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R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
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R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 962
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 963
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
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Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
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Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
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Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
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Designspeed 40 Km/hr
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Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
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Designspeed 40 Km/hr
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Lc (m) 100.000
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Delta (deg.) 57°17'45"
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Designspeed 40 Km/hr
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Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
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R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
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R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 972
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Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
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Delta (deg.) 57°17'45"
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Designspeed 40 Km/hr
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Designspeed 40 Km/hr
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Designspeed 40 Km/hr
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Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
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Designspeed 40 Km/hr
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Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
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Designspeed 40 Km/hr
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Designspeed 40 Km/hr
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Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
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Designspeed 40 Km/hr
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Ls (m) 100.000
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Designspeed 40 Km/hr
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Designspeed 40 Km/hr
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Designspeed 40 Km/hr
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Designspeed 40 Km/hr
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Delta (deg.) 57°17'45"
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Designspeed 40 Km/hr
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Ls (m) 100.000
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Designspeed 40 Km/hr
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Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
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Designspeed 40 Km/hr
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Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
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Designspeed 40 Km/hr
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Lc (m) 100.000
Ls (m) 100.000
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R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 1000
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
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Designspeed 40 Km/hr
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R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
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Designspeed 40 Km/hr
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Lc (m) 100.000
Ls (m) 100.000
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Designspeed 40 Km/hr
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Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
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R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
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Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 1006
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Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
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Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 1008
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
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Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
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R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 1011
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Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
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Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
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Designspeed 40 Km/hr
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Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 1014
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Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
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Designspeed 40 Km/hr
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Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 1016
R (m) 100
Lc (m) 100.000
Ls (m) 100.000
Delta (deg.) 57°17'45"
e 7.0%
Designspeed 40 Km/hr
Curve No. 1017
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Lc (m) 100.000
Ls (m) 100.000
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Designspeed 40 Km/hr
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Lc (m) 100.000
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Delta (deg.) 57°17'45"
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Designspeed 40 Km/hr
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Ls (m) 100.000
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Designspeed 40 Km/hr
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Designspeed 40 Km/hr
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Lc (m) 100.000
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Ls (m) 100.000
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Ls (m) 100.000
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Designspeed 40 Km/hr
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Designspeed 40 Km/hr
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Designspeed 40 Km/hr
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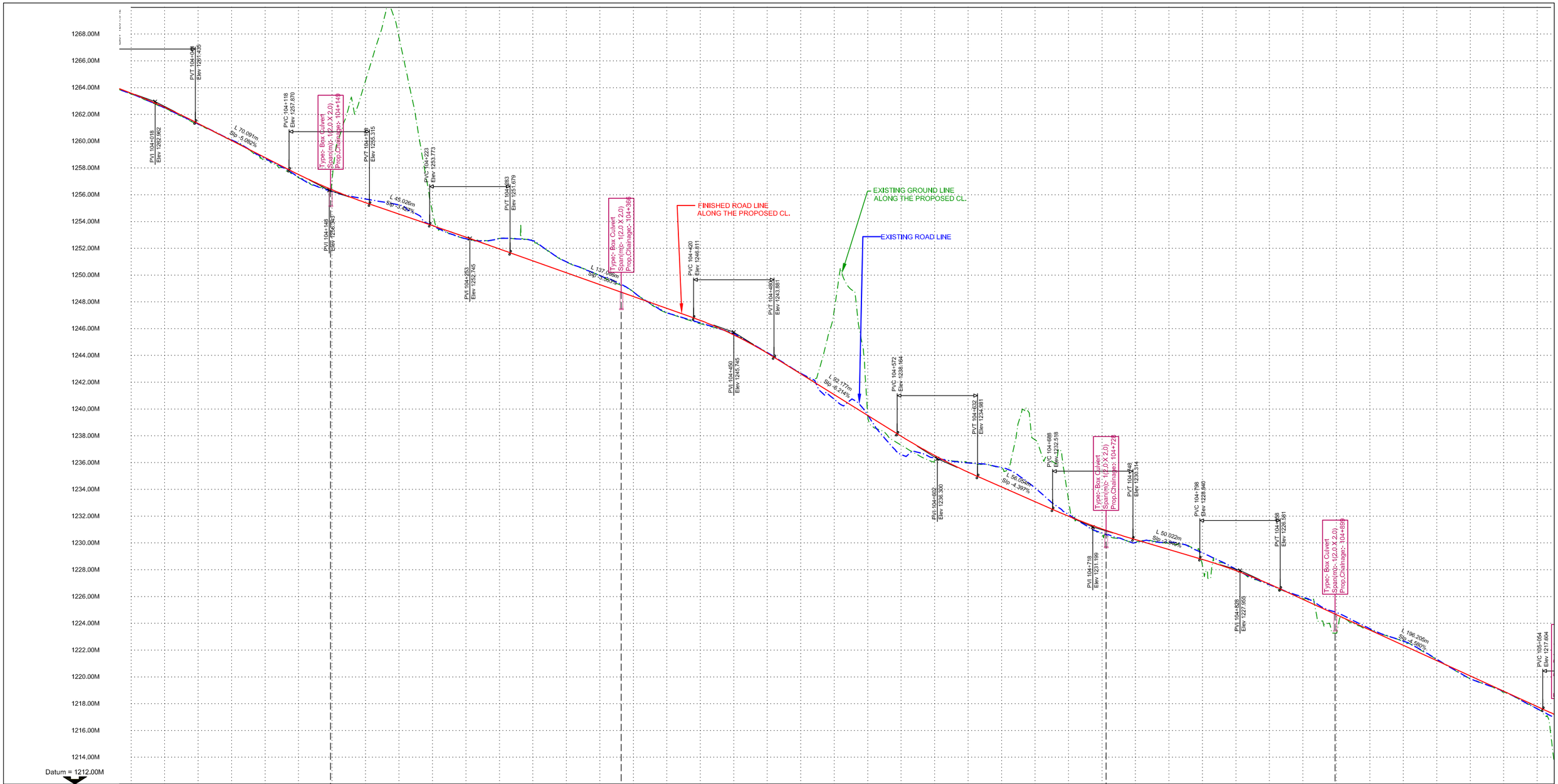


MKD.	DATE	DESCRIPTION	CHKD.	APPRD.	
REVISIONS					

Scale :- VER- 1:200

DATE: APRIL, 2020

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 PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-4J-TP/Manipur/2017)

PROFILE
Km 104+000 to Km 105+000

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

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-IIIC/PROFILE

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

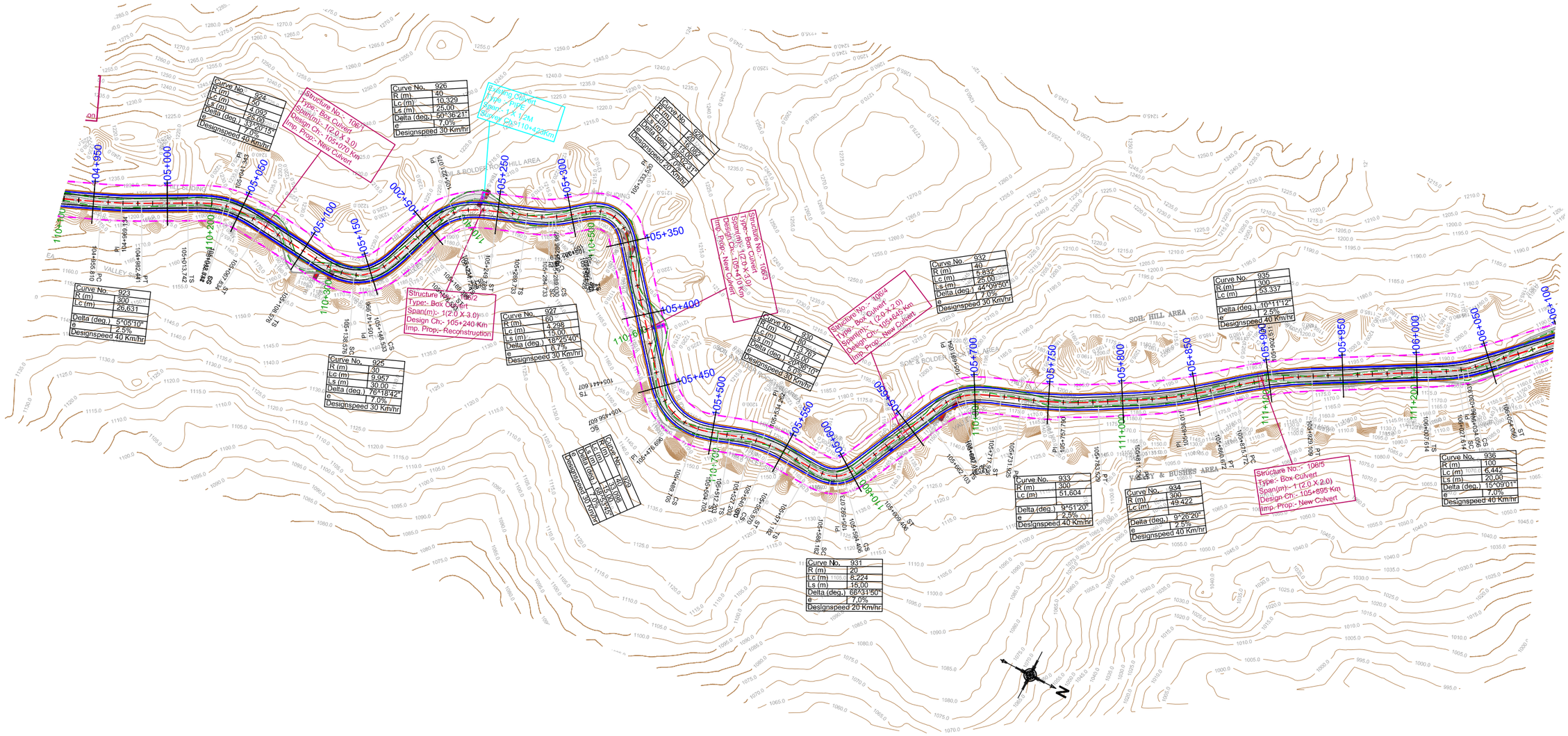
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

CHURACHANDPUR

TUIVAI

LEGEND : -

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



					Scale :- 1:2000	CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building,3rd Floor, 4 Parliament Street, New Delhi - 110001
					DATE: APRIL, 2020	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 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 105+000 to Km 106+000

SUBMISSION TYPE :

FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

CONSULTANT :

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

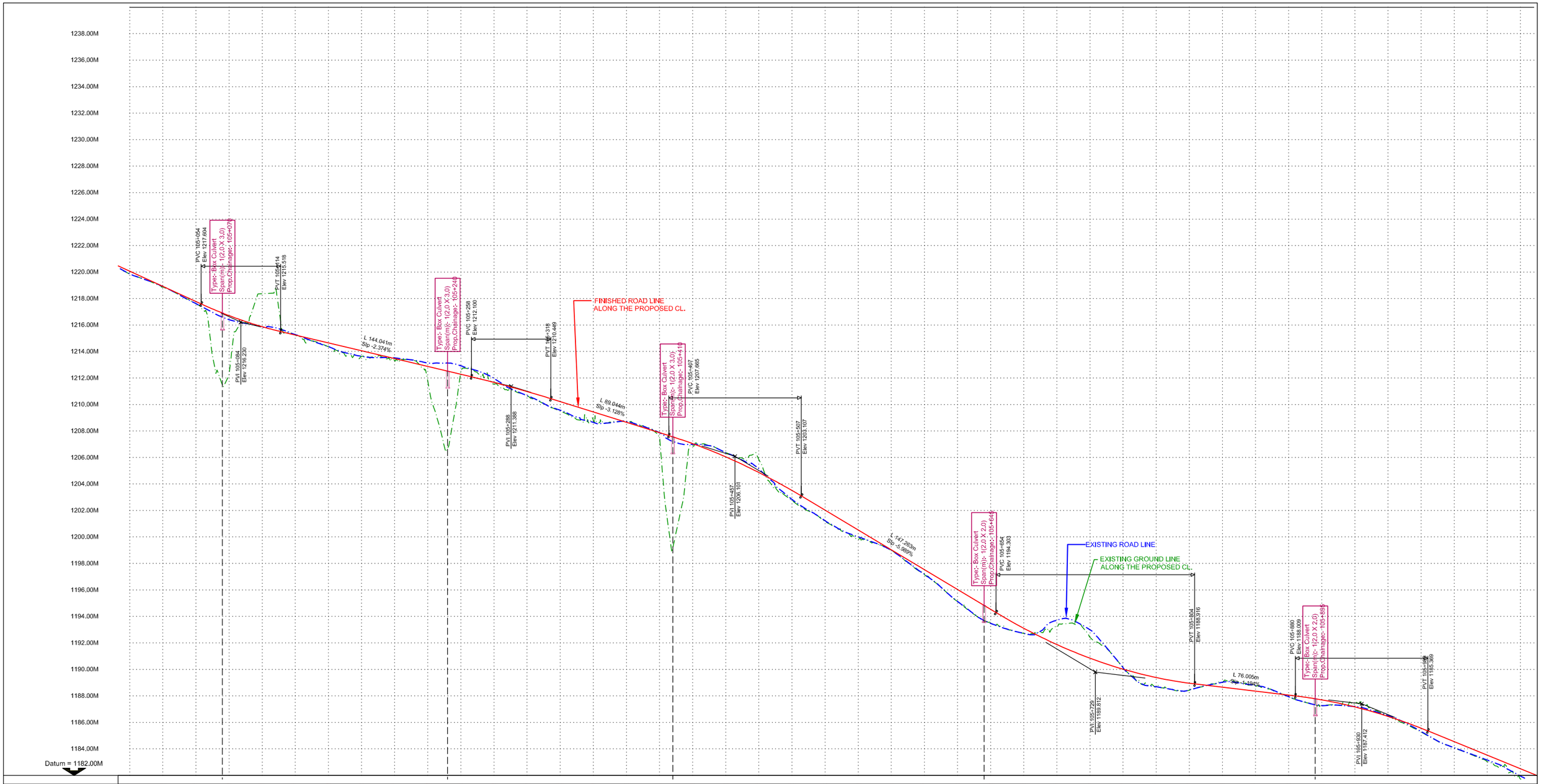
CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092.

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

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

REVISION MKD. - R0 | SHEET NO. - 03

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



FINISHED ROAD LEVEL. ALONG THE PROPOSED CL.	1220.077 1218.932 1217.787 1216.723 1215.886 1215.257 1214.663 1214.070 1213.477 1212.883 1212.290 1211.678 1210.992 1210.230 1209.526 1208.810 1208.666 1207.884 1207.056 1206.056 1204.877 1203.519 1202.029 1201.161 1200.532 1199.822 1199.034 1198.991 1197.186 1197.537 1196.040 1195.130 1194.543 1193.551 1192.726 1193.116 1193.227 1191.887 1190.857 1192.432 1190.103 1190.027 1188.669 1189.397 1188.443 1188.967 1189.033 1188.666 1188.746 1188.367 1187.922 1188.069 1187.340 1187.712 1187.383 1187.179 1186.464 1186.468 1185.286 1185.569 1184.087 1184.551 1183.041 1183.529 1181.731 1182.508
EXISTING GROUND LEVEL ALONG THE PROPOSED CL.	1219.855 1218.883 1217.638 1212.214 1218.372 1215.273 1214.376 1213.640 1213.336 1211.815 1212.476 1211.562 1210.668 1210.230 1209.526 1208.810 1208.709 1207.491 1206.892 1206.376 1205.853 1202.755 1201.161 1199.822 1198.991 1197.186 1195.130 1193.551 1192.726 1193.227 1192.432 1190.103 1188.669 1188.443 1189.033 1188.746 1187.922 1187.340 1187.383 1186.468 1185.286 1184.087 1183.041 1181.731
HORIZONTAL ALIGNMENT	L 25.00 A 35.36 L 4.09 R 50.00 L 25.00 A 35.36 L 30.00 A 30.00 L 9.96 R 30.00 L 30.00 A 30.00 L 25.00 A 31.62 L 10.33 R 40.00 L 25.00 A 31.62 L 15.00 A 30.00 L 304.30 L 15.00 A 60.00 L 15.00 A 17.32 L 16.68 R 20.00 A 17.32 L 15.00 A 24.49 L 33.10 R 40.00 L 15.00 A 24.49 L 15.00 A 34.64 L 13.77 R 80.00 L 15.00 A 34.64 L 15.00 A 17.32 L 8.23 R 20.00 L 15.00 A 17.32 L 25.00 A 31.62 L 5.83 R 40.00 L 25.00 A 31.62 L 51.60 R 300.00 L 49.42 R 300.00 L 53.34 R 300.00 L 20.00 L 6.44 A 44.72 L 20.00 R 100.00
VERTICAL ALIGNMENT	L60.000 L1 30.000 L2 30.000 L144.000 Slp-2.374% L60.000 L1 30.000 L2 30.000 L89.000 Slp-3.128% L100.000 L1 50.000 L2 50.000 L147.000 Slp-5.989% L150.000 L1 75.000 L2 75.000 L76.000 Slp-1.194% L100.000 L1 50.000 L2 50.000
SUPERELEVATION (e %)	e 2.5% e 7.0%
CHAINAGE (KM)	105+000 105+025 105+050 105+075 105+100 105+125 105+150 105+175 105+200 105+225 105+250 105+275 105+300 105+325 105+350 105+375 105+400 105+425 105+450 105+475 105+500 105+525 105+550 105+575 105+600 105+625 105+650 105+675 105+700 105+725 105+750 105+775 105+800 105+825 105+850 105+875 105+900 105+925 105+950 105+975 106+000 106+025 106+050

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- VER- 1:200

DATE: APRIL, 2020

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 PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-JJ-TP/Manipur/2017)

PROFILE
Km 105+000 to Km 106+000

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

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-IIIC/PROFILE

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

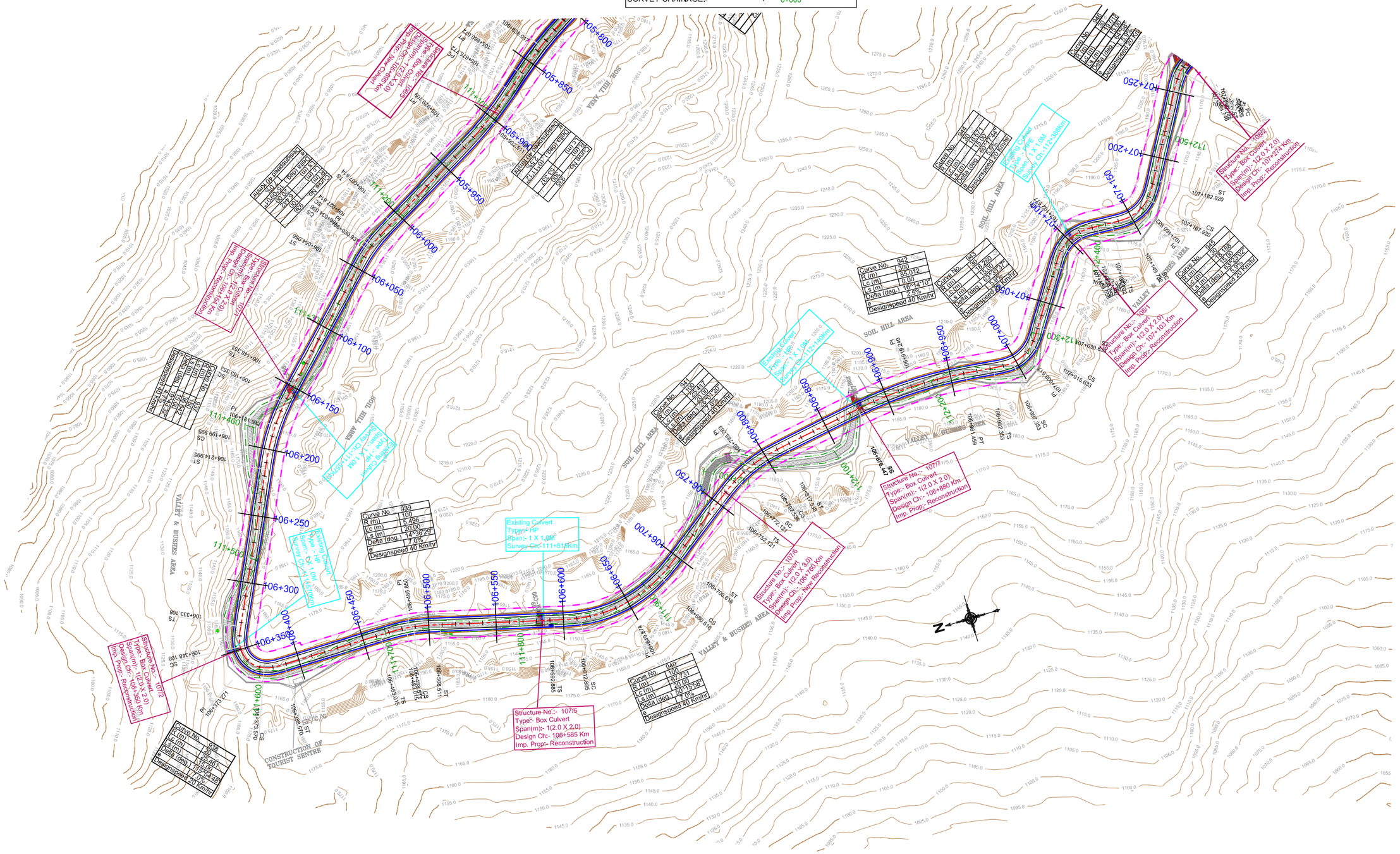
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

CHURACHANDPUR

TUIVAI

LEGEND : -

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



					Scale :- 1:2000	CLIENT:	NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building,3rd Floor, 4 Parliament Street, New Delhi - 110001
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.	DATE: APRIL, 2020	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 PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)
REVISIONS							

PLAN

Km 106+000 to Km 107+000

SUBMISSION TYPE :

FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

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 N.S.C. BOSE ROAD

DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IIIC/PLAN			
REVISION MKD. - R0		SHEET NO. - 04	
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

1198.00M
1196.00M
1194.00M
1192.00M
1190.00M
1188.00M
1186.00M
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1162.00M
1160.00M
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1156.00M
1154.00M
1152.00M
1150.00M
1148.00M
1146.00M
1144.00M
Datum = 1142.00M
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Prop.Chainage:- 106+154
FINISHED ROAD LINE
ALONG THE PROPOSED CL.
L 612.511m
Slp -4.087%
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Prop.Chainage:- 106+359
EXISTING ROAD LINE
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Prop.Chainage:- 106+583
PVC 106+582
Elev 1160.357
PVT 106+602
Elev 1158.341
L 74.026m
Slp -2.633%
PVT 106+622
Elev 1156.131
PVC 106+726
Elev 1156.393
Type:- Box Culvert
Span(m):- 1(2.0 X 3.0)
Prop.Chainage:- 106+768
PVT 106+826
Elev 1158.886
PVI 106+776
Elev 1155.976
EXISTING GROUND LINE
ALONG THE PROPOSED CL.
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Prop.Chainage:- 106+880
L 172.378m
Slp 6.643%
PVC 106+986
Elev 1169.823
PVI 107+046
Elev 1172.145

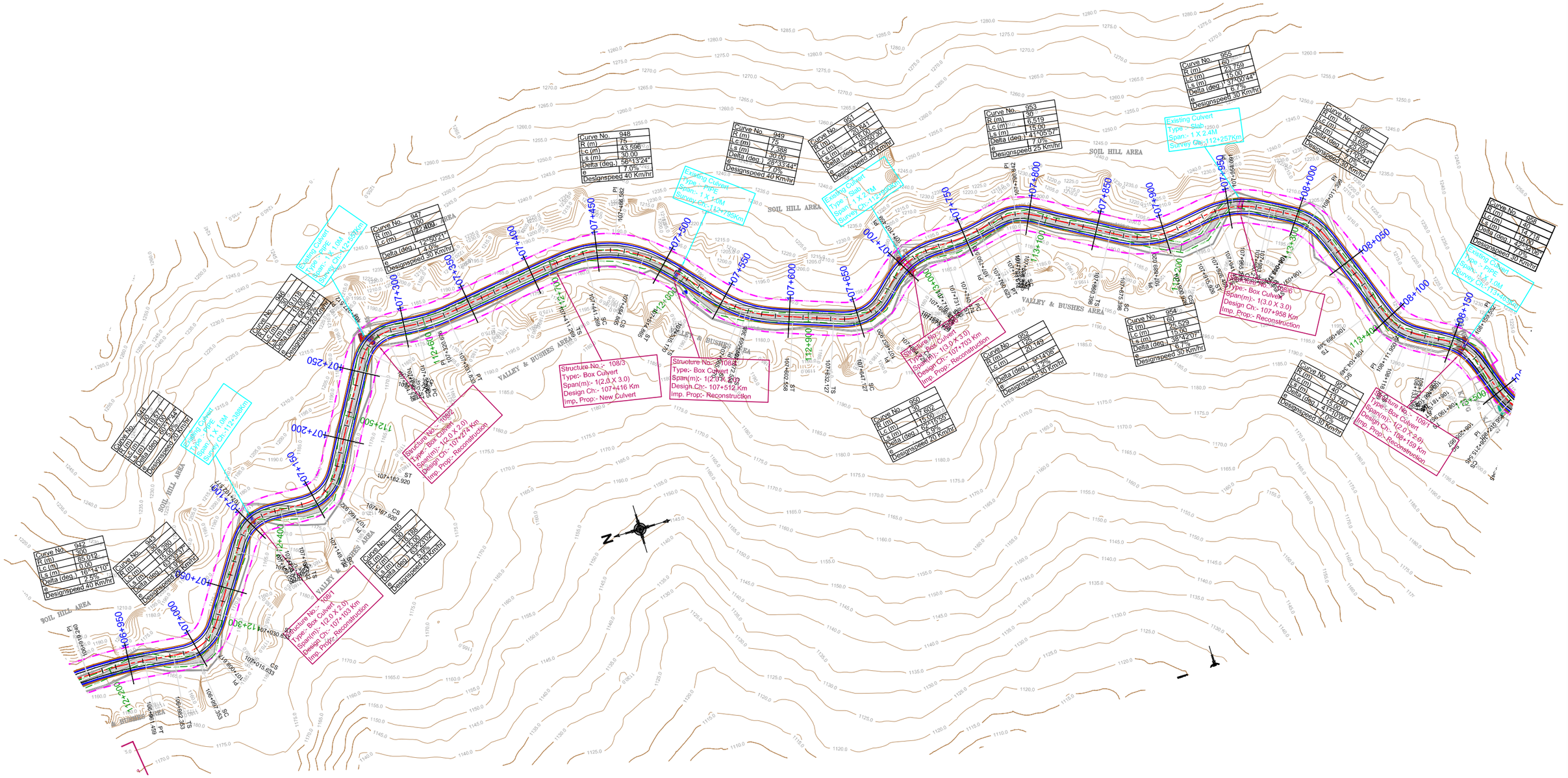
| | | |

CHURACHANDPUR

TUIVAI

LEGEND : -

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



					Scale :- 1:2000	CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building,3rd Floor, 4 Parliament Street, New Delhi - 110001	PLAN Km 107+000 to Km 108+000
					DATE: APRIL, 2020	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 PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)	SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.			PACKAGE - IIIC
REVISIONS							

CONSULTANT :

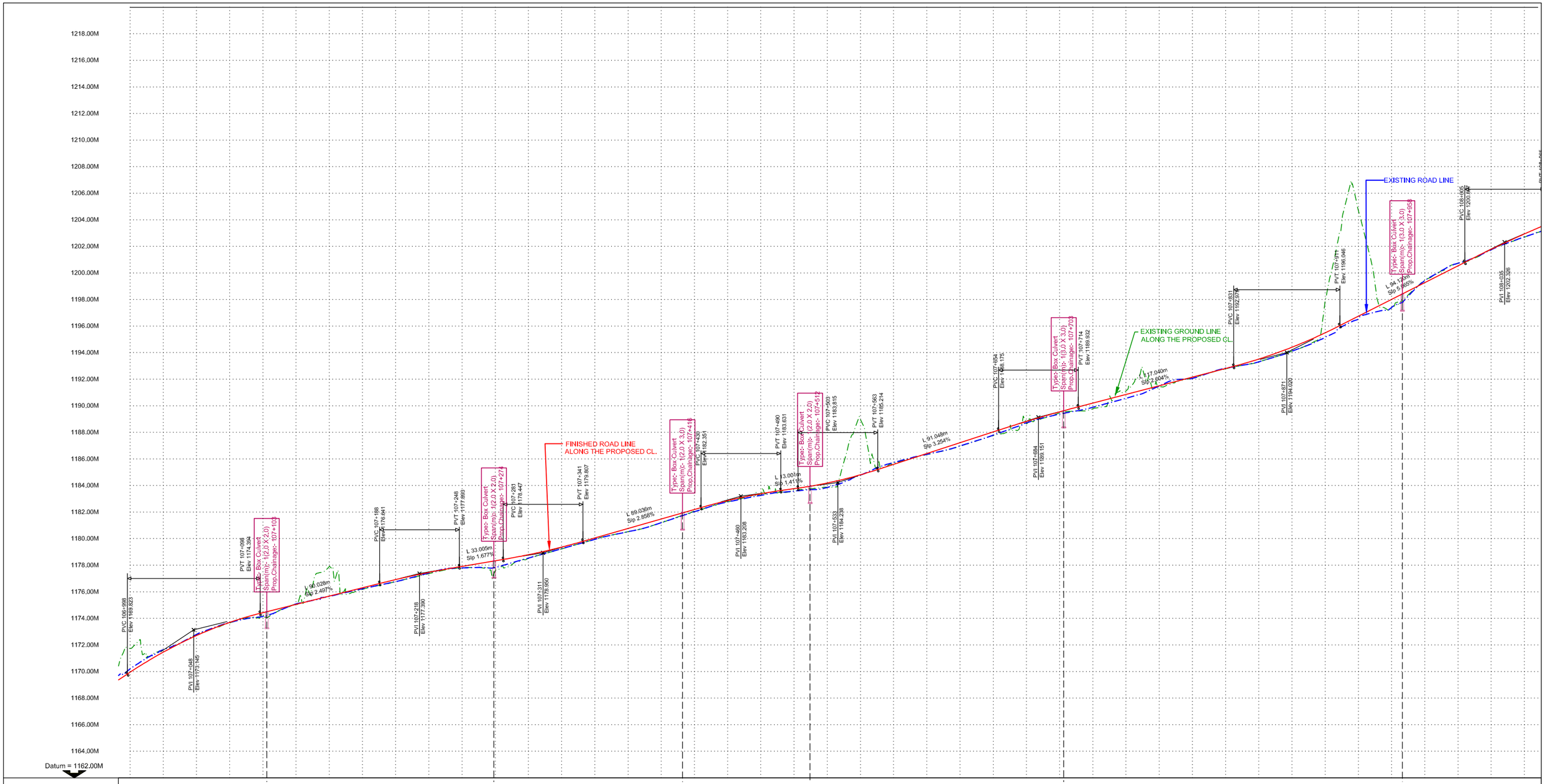
CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road,
Kolkata - 700092.

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-IIIC/PLAN

REVISION MKD. - R0 | SHEET NO. - 05

DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS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1216.00M
1214.00M
1212.00M
1210.00M
1208.00M
1206.00M
1204.00M
1202.00M
1200.00M
1198.00M
1196.00M
1194.00M
1192.00M
1190.00M
1188.00M
1186.00M
1184.00M
1182.00M
1180.00M
1178.00M
1176.00M
1174.00M
1172.00M
1170.00M
1168.00M
1166.00M
1164.00M
Datum = 1162.00M
EXISTING ROAD LINE
FINISHED ROAD LINE ALONG THE PROPOSED CL.
EXISTING GROUND LINE ALONG THE PROPOSED CL.
PVC 106+998 Elev 1169.823
PVT 107+068 Elev 1174.384
Type:- Box Culvert Span(m):- 1(2.0 X 2.0) Prop.Chainage:- 107+102
PVI 107+048 Elev 1173.145
L 90.028m Slp 2.497%
PVC 107+188 Elev 1176.641
PVT 107+248 Elev 1177.869
L 33.005m Slp 1.677%
Type:- Box Culvert Span(m):- 1(2.0 X 2.0) Prop.Chainage:- 107+274
PVC 107+283 Elev 1178.447
PVT 107+341 Elev 1179.807
PVI 107+218 Elev 1177.380
PVI 107+311 Elev 1178.950
L 89.036m Slp 2.858%
Type:- Box Culvert Span(m):- 1(2.0 X 3.0) Prop.Chainage:- 107+416
PVC 107+438 Elev 1182.351
PVI 107+460 Elev 1183.208
L 3.001m Slp 1.411%
PVT 107+490 Elev 1183.631
Type:- Box Culvert Span(m):- (2.0 X 2.0) Prop.Chainage:- 107+512
PVC 107+563 Elev 1183.815
PVT 107+583 Elev 1185.214
PVI 107+533 Elev 1184.298
L 91.048m Slp 3.254%
PVC 107+659 Elev 1188.175
PVI 107+684 Elev 1188.151
Type:- Box Culvert Span(m):- 1(3.0 X 3.0) Prop.Chainage:- 107+703
PVT 107+714 Elev 1189.932
L 17.040m Slp 2.604%
PVC 107+831 Elev 1192.078
PVI 107+871 Elev 1194.000
PVT 107+911 Elev 1196.046
Type:- Box Culvert Span(m):- 1(3.0 X 3.0) Prop.Chainage:- 107+958
L 94.124m Slp 5.865%
PVC 108+005 Elev 1200.560
PVI 108+035 Elev 1202.398

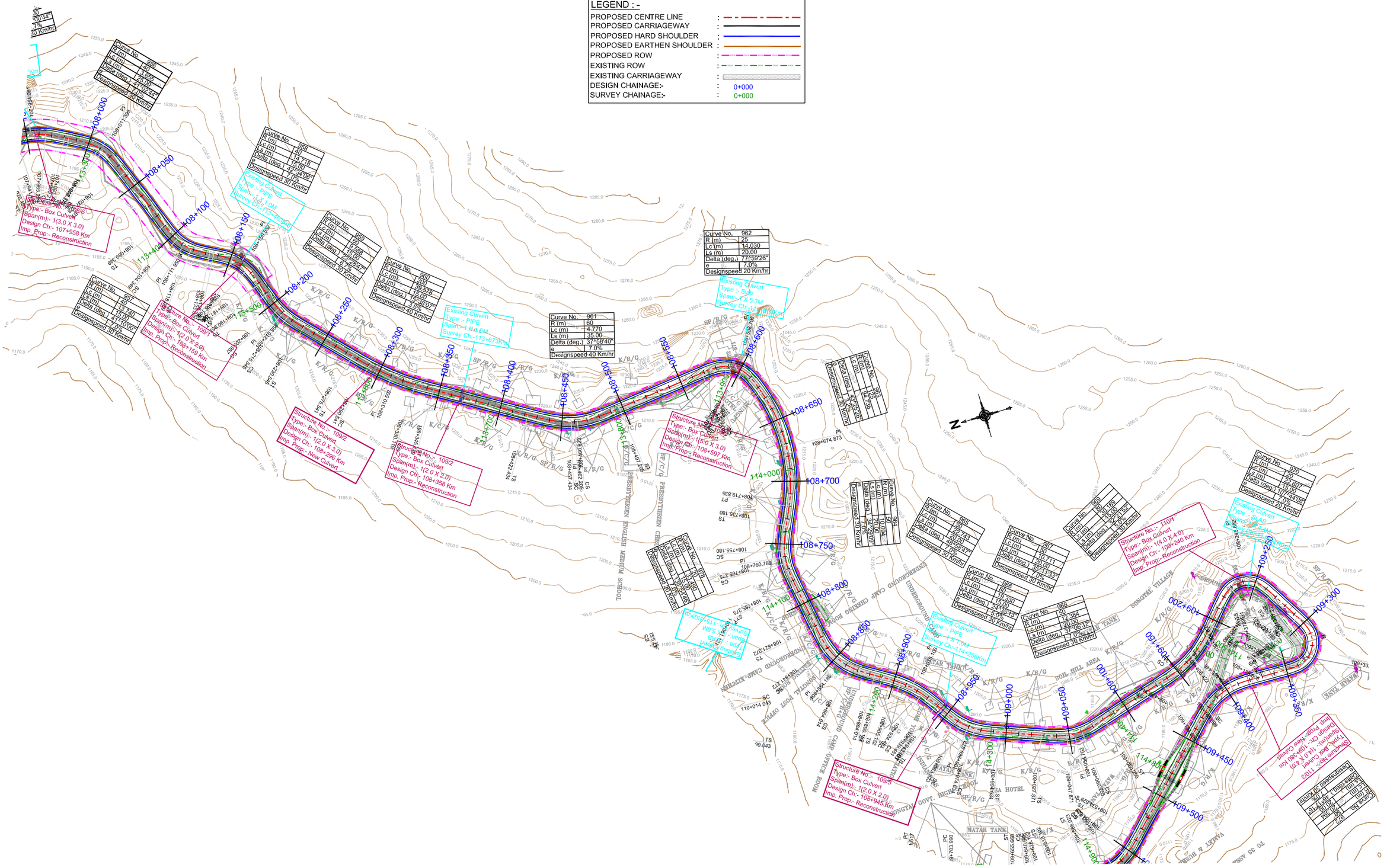
| | | |

CHURACHANDPUR

TUIVAI

LEGEND : -

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



					Scale :- 1:2000	CLIENT:	NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building,3rd Floor, 4 Parliament Street, New Delhi - 110001
					DATE: APRIL, 2020	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 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 108+000 to Km 109+000

SUBMISSION TYPE :

FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

CONSULTANT :

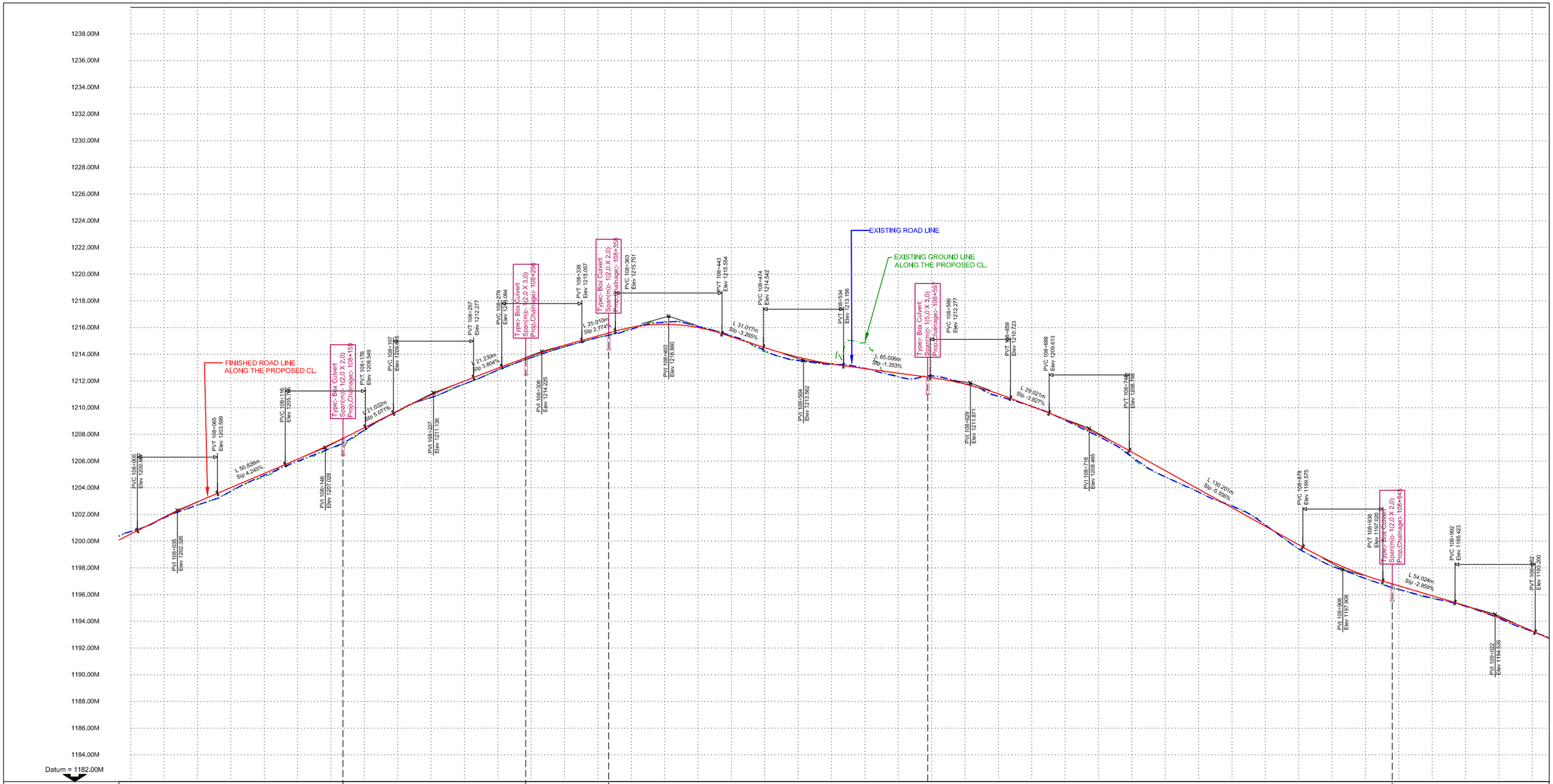
CETEST Engineering Consultants
An ISO 9001, 14001 & OHSAS 18001 Certified Company

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-IIIC/PLAN

REVISION MKD. - R0 | SHEET NO. - 06

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



FINISHED ROAD LEVEL. ALONG THE PROPOSED CL.	1200.553 1201.792 1202.947 1204.024 1205.085 1206.152 1207.288 1208.510 1208.777 1210.361 1212.014 1212.970 1213.879 1214.882 1215.390 1216.029 1216.260 1216.019 1215.325 1214.509 1213.800 1213.291 1212.940 1212.602 1212.263 1211.786 1211.051 1210.111 1209.133 1208.000 1206.687 1205.298 1203.909 1202.520 1201.131 1199.742 1198.457 1197.442 1196.665 1195.928 1195.178 1194.311 1193.289
EXISTING GROUND LEVEL ALONG THE PROPOSED CL.	1200.717 1201.781 1202.706 1203.759 1204.855 1205.992 1206.979 1208.295 1209.707 1210.773 1211.798 1212.834 1213.756 1214.577 1215.265 1215.953 1216.437 1216.108 1215.380 1214.200 1213.555 1213.320 1214.868 1212.341 1212.395 1211.797 1210.868 1210.111 1209.066 1207.858 1206.270 1204.825 1203.886 1202.651 1201.202 1199.403 1198.108 1197.194 1196.400 1195.712 1195.133 1194.289 1193.250
HORIZONTAL ALIGNMENT	25.00 L 3.66 31.62R 40.00A L 25.00 31.62 L 15.00L 13.74L 15.00 A 24.49R 40.00A 24.49 L 15.00 L 14.72 L 15.00 A 24.49R 40.00A 24.49 L 15.00 L 9.59 15.00 A 30.00R 60.00A 30.00 L 15.00 A 54.77 L 39.58 R 200.00 L 15.00 A 54.77 L 35.00 A 45.83 L 4.77 R 60.00 L 35.00 A 45.83 L 20.00 A 22.36 R 25.00 L 20.00 A 22.36 L 94.74 R 125.00 L 20.00 A 31.62 L 10.09 R 50.00 L 20.00 A 31.62 L 20.00 A 31.62 L 22.74 R 50.00 L 20.00 A 31.62 L 15.00 A 34.64 L 19.33 R 80.00 L 15.00 A 34.64 L 20.00 A 31.62 L 10.71 R 50.00 L 20.00 A 31.62 L 20.00 A 31.62 L 12.38 R 50.00
VERTICAL ALIGNMENT	L60.000 L1 30.000 L2 30.000 L50.781 Slp4.245% L60.000 L1 30.000 L2 30.000 L21.000 Slp5.077% L60.000 L1 30.000 L2 30.000 L21.215 Slp3.804% L60.000 L1 30.000 L2 30.000 L25.000 Slp2.774% L80.000 L1 40.000 L2 40.000 L31.000 Slp-3.265% L60.000 L1 30.000 L2 30.000 L65.000 Slp-1.353% L60.000 L1 30.000 L2 30.000 L29.000 Slp-3.827% L60.000 L1 30.000 L2 30.000 L130.000 Slp-5.556% L60.000 L1 30.000 L2 30.000 L54.000 Slp-2.959% L60.000 L1 30.000 L2 30.000
SUPERELEVATION (e %)	e 2.5% e 4.0% e 7.0%
CHAINAGE (KM)	108+000 108+025 108+050 108+075 108+100 108+125 108+150 108+175 108+200 108+225 108+250 108+275 108+300 108+325 108+350 108+375 108+400 108+425 108+450 108+475 108+500 108+525 108+550 108+575 108+600 108+625 108+650 108+675 108+700 108+725 108+750 108+775 108+800 108+825 108+850 108+875 108+900 108+925 108+950 108+975 109+000 109+025 109+050

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- VER- 1:200

DATE: APRIL, 2020

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 PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

PROFILE
Km 108+000 to Km 109+000

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

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-IIIC/PROFILE

REVISION MKD. - R0 | SHEET NO. - 06A

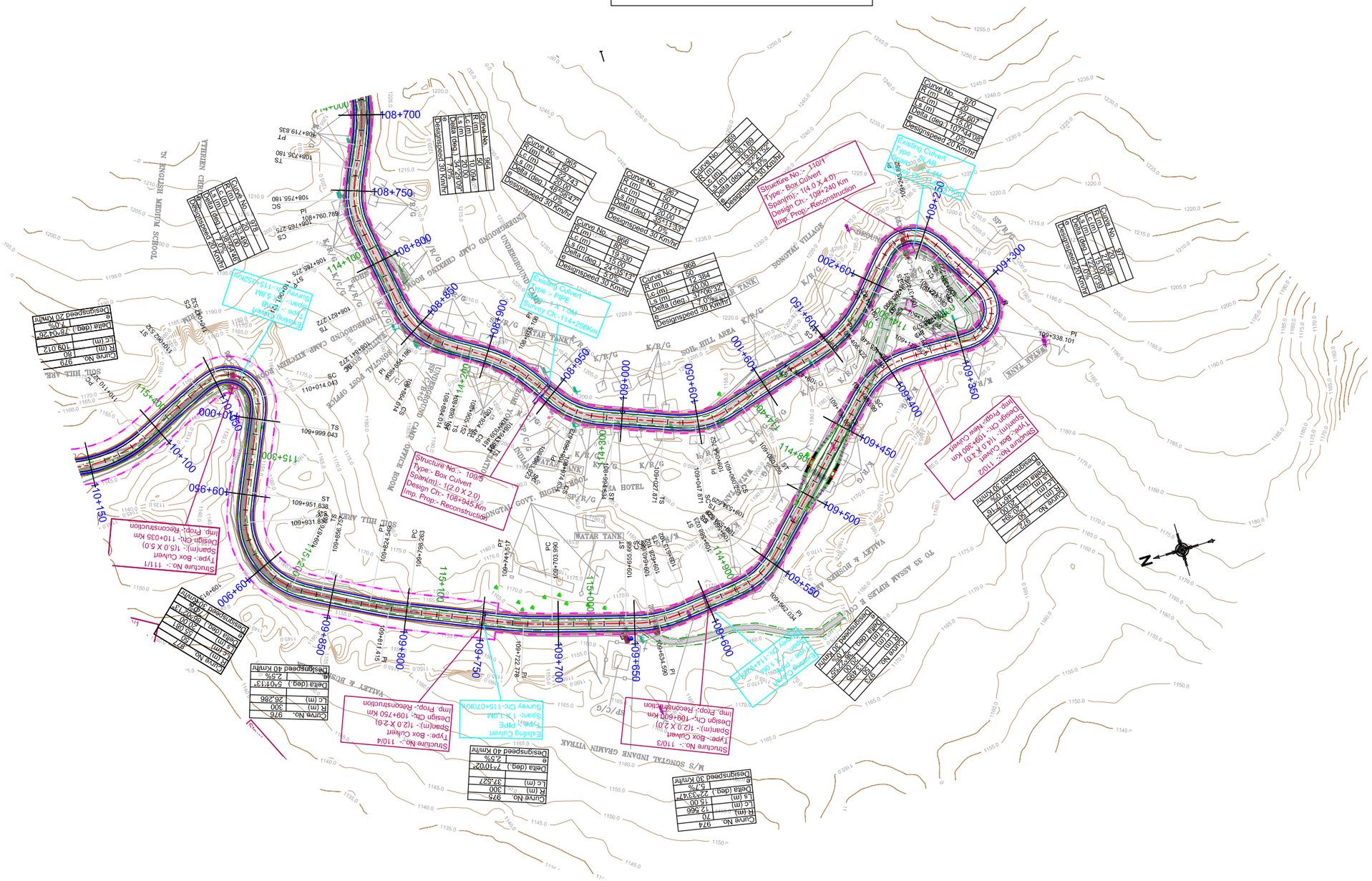
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

CHURACHANDPUR

TUIVAI

LEGEND : -

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


Structure No.:- 114/T
Type:- Box Culvert
Span(m):- 1(4.0 X 4.0)
Design Ch:- 109+240 Km
Imp. Prop:- Reconstruction
Existing Culvert
Type:- SLAB
Existing Culvert
Type:- PIPE
Survey Ch:-114+256Km
Existing Culvert
Type:- PIPE
Span:- 1 X 1.0M
Survey Ch:- 115+070Km
Structure No.:- 113/1
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 108+945 Km
Imp. Prop:- Reconstruction
Structure No.:- 111/1
Type:- Box Culvert
Span(m):- 1(5.0 X 5.0)
Design Ch:- 110+035 Km
Imp. Prop:- Reconstruction
Structure No.:- 110/4
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 109+750 Km
Imp. Prop:- Reconstruction
Structure No.:- 110/3
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 109+600 Km
Imp. Prop:- Reconstruction
Structure No.:- 110/2
Type:- Box Culvert
Span(m):- 1(4.0 X 4.0)
Design Ch:- 109+380 Km
Imp. Prop:- New Culvert
Structure No.:- 109/5
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 108+945 Km
Imp. Prop:- Reconstruction
Existing Culvert
Type:- SLAB
Span:- 1 X 1.0M
Survey Ch:- 109+634.590
Existing Culvert
Type:- SLAB
Span:- 1 X 1.5M
Survey Ch:- 109+227.871
Existing Culvert
Type:- SLAB
Span:- 1 X 1.5M
Survey Ch:- 108+821.272
Existing Culvert
Type:- SLAB
Span:- 1 X 1.5M
Survey Ch:- 108+755.275
Existing Culvert
Type:- SLAB
Span:- 1 X 1.5M
Survey Ch:- 108+719.835
Curve No. 967
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 966
R (m) 50
Lc (m) 72.743
Ls (m) 50
Delta (deg.) 72.743°
e 7.0%
Designspeed 30 Km/hr
Curve No. 965
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 964
R (m) 50
Lc (m) 10.004
Ls (m) 50
Delta (deg.) 20.000°
e 7.0%
Designspeed 30 Km/hr
Curve No. 963
R (m) 50
Lc (m) 150.000
Ls (m) 150.00
Delta (deg.) 172.152°
e 7.0%
Designspeed 30 Km/hr
Curve No. 962
R (m) 50
Lc (m) 10.711
Ls (m) 100
Delta (deg.) 36°51'33"
e 7.0%
Designspeed 30 Km/hr
Curve No. 968
R (m) 50
Lc (m) 15.330
Ls (m) 50
Delta (deg.) 24°49'13"
e 7.0%
Designspeed 30 Km/hr
Curve No. 969
R (m) 12.384
Ls (m) 20.00
Delta (deg.) 177°06'32"
e 7.0%
Designspeed 30 Km/hr
Curve No. 970
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 971
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 972
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 973
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 974
R (m) 70
Lc (m) 12.566
Ls (m) 12.00
Delta (deg.) 22°33'47"
e 5.7%
Designspeed 30 Km/hr
Curve No. 975
R (m) 300
Lc (m) 37.527
Delta (deg.) 7°10'02"
e 2.5%
Designspeed 40 Km/hr
Curve No. 976
R (m) 300
Lc (m) 26.286
Delta (deg.) 5°01'13"
e 2.5%
Designspeed 40 Km/hr
Curve No. 977
R (m) 300
Lc (m) 109.012
Ls (m) 90
Delta (deg.) 78°04'26"
e 7.0%
Designspeed 40 Km/hr
Curve No. 978
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 979
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 980
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 981
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 982
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 983
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 984
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 985
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 986
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 987
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 988
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 989
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 990
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 991
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 992
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 993
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 994
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 995
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 996
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 997
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 998
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 999
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1000
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1001
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1002
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1003
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1004
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1005
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1006
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1007
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1008
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1009
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1010
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1011
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1012
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1013
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1014
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1015
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1016
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1017
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1018
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1019
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1020
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1021
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1022
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1023
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1024
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1025
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1026
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1027
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1028
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1029
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1030
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1031
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1032
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1033
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1034
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1035
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1036
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1037
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1038
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1039
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1040
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1041
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1042
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1043
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1044
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1045
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1046
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1047
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1048
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1049
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1050
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1051
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1052
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1053
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1054
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1055
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1056
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1057
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1058
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1059
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1060
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1061
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1062
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1063
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1064
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1065
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1066
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1067
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1068
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1069
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1070
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1071
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1072
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1073
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1074
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1075
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1076
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1077
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1078
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1079
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1080
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1081
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1082
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1083
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1084
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1085
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1086
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1087
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1088
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1089
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1090
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1091
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1092
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1093
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1094
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1095
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1096
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1097
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1098
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1099
R (m) 50
Lc (m) 72.867
Ls (m) 50
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e 7.0%
Designspeed 30 Km/hr
Curve No. 1100
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Ls (m) 50
Delta (deg.) 72.867°
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Designspeed 30 Km/hr
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Ls (m) 50
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Curve No. 1102
R (m) 50
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Curve No. 1103
R (m) 50
Lc (m) 72.867
Ls (m) 50
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Designspeed 30 Km/hr
Curve No. 1104
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Curve No. 1105
R (m) 50
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Ls (m) 50
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Designspeed 30 Km/hr
Curve No. 1106
R (m) 50
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Designspeed 30 Km/hr
Curve No. 1107
R (m) 50
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Designspeed 30 Km/hr
Curve No. 1108
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Ls (m) 50
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R (m) 50
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Ls (m) 50
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Designspeed 30 Km/hr
Curve No. 1110
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
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Designspeed 30 Km/hr
Curve No. 1111
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Ls (m) 50
Delta (deg.) 72.867°
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Designspeed 30 Km/hr
Curve No. 1112
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Ls (m) 50
Delta (deg.) 72.867°
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Curve No. 1113
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Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1114
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1115
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1116
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1117
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1118
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1119
R (m) 50
Lc (m) 72.867
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Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1120
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
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Designspeed 30 Km/hr
Curve No. 1121
R (m) 50
Lc (m) 72.867
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Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1122
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Lc (m) 72.867
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e 7.0%
Designspeed 30 Km/hr
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Curve No. 1129
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Ls (m) 50
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Curve No. 1130
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Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1132
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1133
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
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Designspeed 30 Km/hr
Curve No. 1134
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Curve No. 1136
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Ls (m) 50
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Designspeed 30 Km/hr
Curve No. 1137
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1138
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
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Designspeed 30 Km/hr
Curve No. 1139
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Lc (m) 72.867
Ls (m) 50
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Designspeed 30 Km/hr
Curve No. 1140
R (m) 50
Lc (m) 72.867
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Curve No. 1141
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1142
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
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Designspeed 30 Km/hr
Curve No. 1143
R (m) 50
Lc (m) 72.867
Ls (m) 50
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Designspeed 30 Km/hr
Curve No. 1144
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
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Designspeed 30 Km/hr
Curve No. 1145
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1146
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1147
R (m) 50
Lc (m) 72.867
Ls (m) 50
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Designspeed 30 Km/hr
Curve No. 1148
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1149
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Lc (m) 72.867
Ls (m) 50
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Designspeed 30 Km/hr
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Ls (m) 50
Delta (deg.) 72.867°
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Designspeed 30 Km/hr
Curve No. 1151
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1152
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1153
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1154
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1155
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1156
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1157
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1158
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1159
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Lc (m) 72.867
Ls (m) 50
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Designspeed 30 Km/hr
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Curve No. 1161
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Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1162
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1163
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1164
R (m) 50
Lc (m) 72.867
Ls (m) 50
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e 7.0%
Designspeed 30 Km/hr
Curve No. 1165
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1166
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1167
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1168
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1169
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1170
R (m) 50
Lc (m) 72.867
Ls (m) 50
Delta (deg.) 72.867°
e 7.0%
Designspeed 30 Km/hr
Curve No. 1171
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Ls (m) 50
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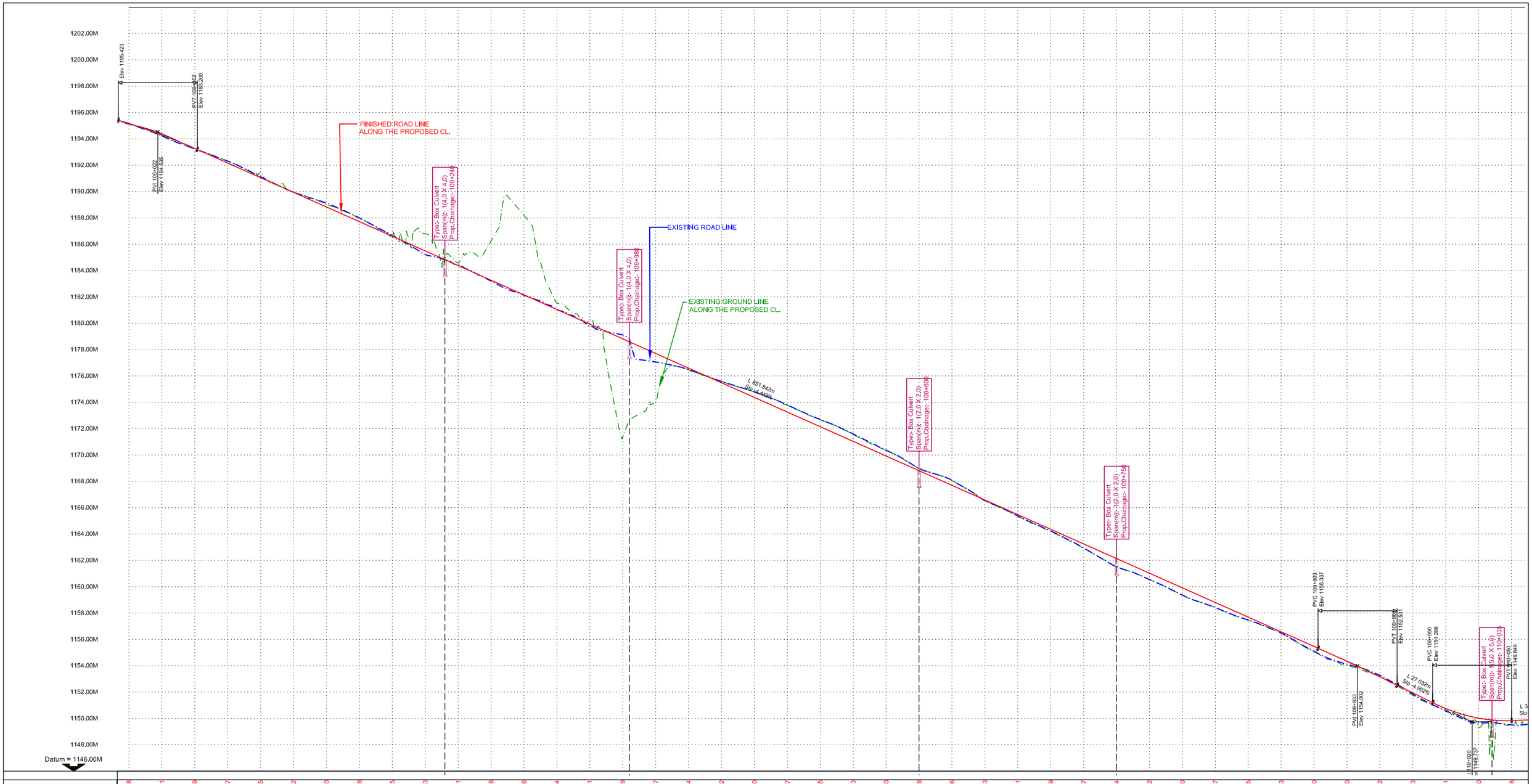
e 7.0%
Designspeed 30 Km/hr
Curve No.



FINISHED ROAD LEVEL. ALONG THE PROPOSED CL.	1195.178 1194.311 1193.289 1192.177 1191.065 1189.952 1188.840 1187.728 1186.615 1185.503 1184.391 1183.278 1182.166 1181.054 1179.941 1178.829 1177.717 1176.604 1175.492 1174.380 1173.267 1172.155 1171.043 1169.930 1168.818 1167.706 1166.593 1165.481 1164.369 1163.257 1162.144 1161.032 1159.920 1158.807 1157.695 1156.583 1155.470 1154.340 1153.162 1151.943 1150.761 1150.030 1149.848
EXISTING GROUND LEVEL ALONG THE PROPOSED CL.	1195.133 1194.289 1193.250 1192.314 1191.448 1189.952 1189.040 1187.981 1186.493 1186.809 1184.597 1186.258 1188.204 1181.581 1180.241 1171.370 1173.960 1176.457 1175.591 1174.758 1173.785 1172.685 1171.563 1170.354 1168.959 1168.069 1166.530 1165.338 1164.226 1162.911 1161.510 1160.548 1159.366 1158.417 1157.436 1156.473 1155.056 1153.999 1153.190 1151.763 1150.666 1149.329 1140.511
HORIZONTAL ALIGNMENT	L 20.00 A 31.62 L 12.38 R 50.00 L 20.00 A 31.62 L 15.00 A 34.64 L 30.19 R 60.00 L 15.00 A 34.64 L 15.00 A 17.32 L 22.61 R 20.00 L 15.00 A 17.32 L 15.00 A 17.32 L 27.65 R 20.00 L 15.00 A 17.32 L 20.00 A 31.62 L 20.39 R 50.00 L 20.00 A 31.62 L 20.00 A 31.62 L 13.49 R 50.00 L 20.00 A 31.62 L 15.00 A 32.40 L 12.57 R 70.00 L 15.00 A 32.40 L 37.53 R 300.00 L 26.29 R 300.00 L 20.00 A 31.62 L 55.08 R 50.00 L 20.00 A 31.62 L 15.00 A 17.32 L 33.49 R 20.00 L 15.00 A 17.32
VERTICAL ALIGNMENT	L60.000 L1 30.000 L2 30.000 L851.000 Slp-4.449% L27.000 Slp-4.902% L60.000 L1 30.000 L2 30.000 L39.000 Slp0.5%
SUPERELEVATION (e %)	109+001.8 e 2.5% 109+020.7 e 2.5% 109+050.0 e 4.0% 109+079.3 e 7.0% 109+087.4 e 2.5% 109+129.3 e 2.5% 109+140.1 e 2.5% 109+174.9 e 4.0% 109+200.2 e 4.0% 109+225.5 e 4.0% 109+250.8 e 4.0% 109+276.1 e 4.0% 109+287.4 e 2.5% 109+298.2 e 2.5% 109+328.9 e 4.0% 109+354.2 e 4.0% 109+379.6 e 4.0% 109+392.2 e 4.0% 109+404.9 e 4.0% 109+417.5 e 4.0% 109+430.2 e 4.0% 109+442.8 e 4.0% 109+455.5 e 4.0% 109+468.1 e 4.0% 109+480.8 e 4.0% 109+493.4 e 4.0% 109+506.1 e 4.0% 109+518.7 e 4.0% 109+531.4 e 4.0% 109+544.0 e 4.0% 109+556.7 e 4.0% 109+569.3 e 4.0% 109+582.0 e 4.0% 109+594.6 e 4.0% 109+607.3 e 4.0% 109+619.9 e 4.0% 109+632.6 e 4.0% 109+645.2 e 4.0% 109+657.9 e 4.0% 109+670.5 e 4.0% 109+683.2 e 4.0% 109+695.8 e 4.0% 109+708.5 e 4.0% 109+721.1 e 4.0% 109+733.8 e 4.0% 109+746.4 e 4.0% 109+759.1 e 4.0% 109+771.7 e 4.0% 109+784.4 e 4.0% 109+797.0 e 4.0% 109+809.7 e 4.0% 109+822.3 e 4.0% 109+835.0 e 4.0% 109+847.6 e 4.0% 109+860.3 e 4.0% 109+872.9 e 4.0% 109+885.6 e 4.0% 109+898.2 e 4.0% 109+910.9 e 4.0% 109+923.5 e 4.0% 109+936.2 e 4.0% 109+948.8 e 4.0% 109+961.5 e 4.0% 109+974.1 e 4.0% 109+986.8 e 4.0% 109+999.4 e 4.0% 110+012.1 e 4.0% 110+024.7 e 4.0% 110+037.4 e 4.0% 110+050.0 e 4.0%
CHAINAGE (KM)	109+000 109+025 109+050 109+075 109+100 109+125 109+150 109+175 109+200 109+225 109+250 109+275 109+300 109+325 109+350 109+375 109+400 109+425 109+450 109+475 109+500 109+525 109+550 109+575 109+600 109+625 109+650 109+675 109+700 109+725 109+750 109+775 109+800 109+825 109+850 109+875 109+900 109+925 109+950 109+975 110+000 110+025 110+050

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- VER- 1:200

DATE: APRIL, 2020

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 PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-4J-TP/Manipur/2017)

PROFILE
Km 109+000 to Km 110+000

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

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-IIIC/PROFILE
REVISION MKD. - R0
SHEET NO. - 07A

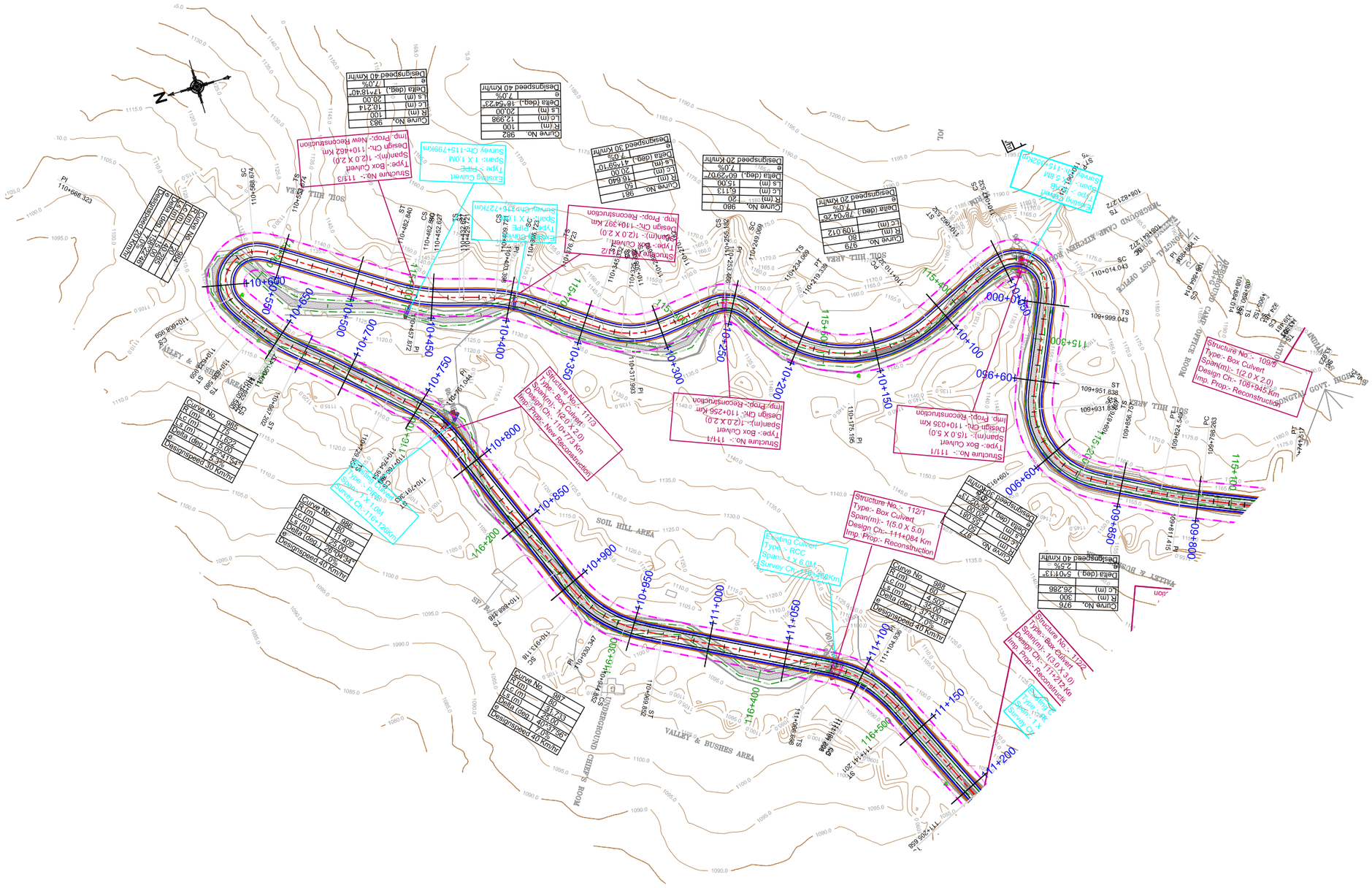
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

CHURACHANDPUR

TUIVAI

LEGEND : -

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



					Scale :- 1:2000	CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building,3rd Floor, 4 Parliament Street, New Delhi - 110001
					DATE: APRIL, 2020	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 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 110+000 to Km 111+000

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

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-IIIC/PLAN

REVISION MKD. - R0 | SHEET NO. - 08

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

					Scale :- VER- 1:200	CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building,3rd Floor, 4 Parliament Street, New Delhi - 110001	PROFILE Km 110+000 to Km 111+000
					DATE: APRIL, 2020	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 PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)	SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.			PACKAGE - IIIC
REVISIONS							

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

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-IIIC/PROFILE

REVISION MKD. - R0 | SHEET NO. - 08A

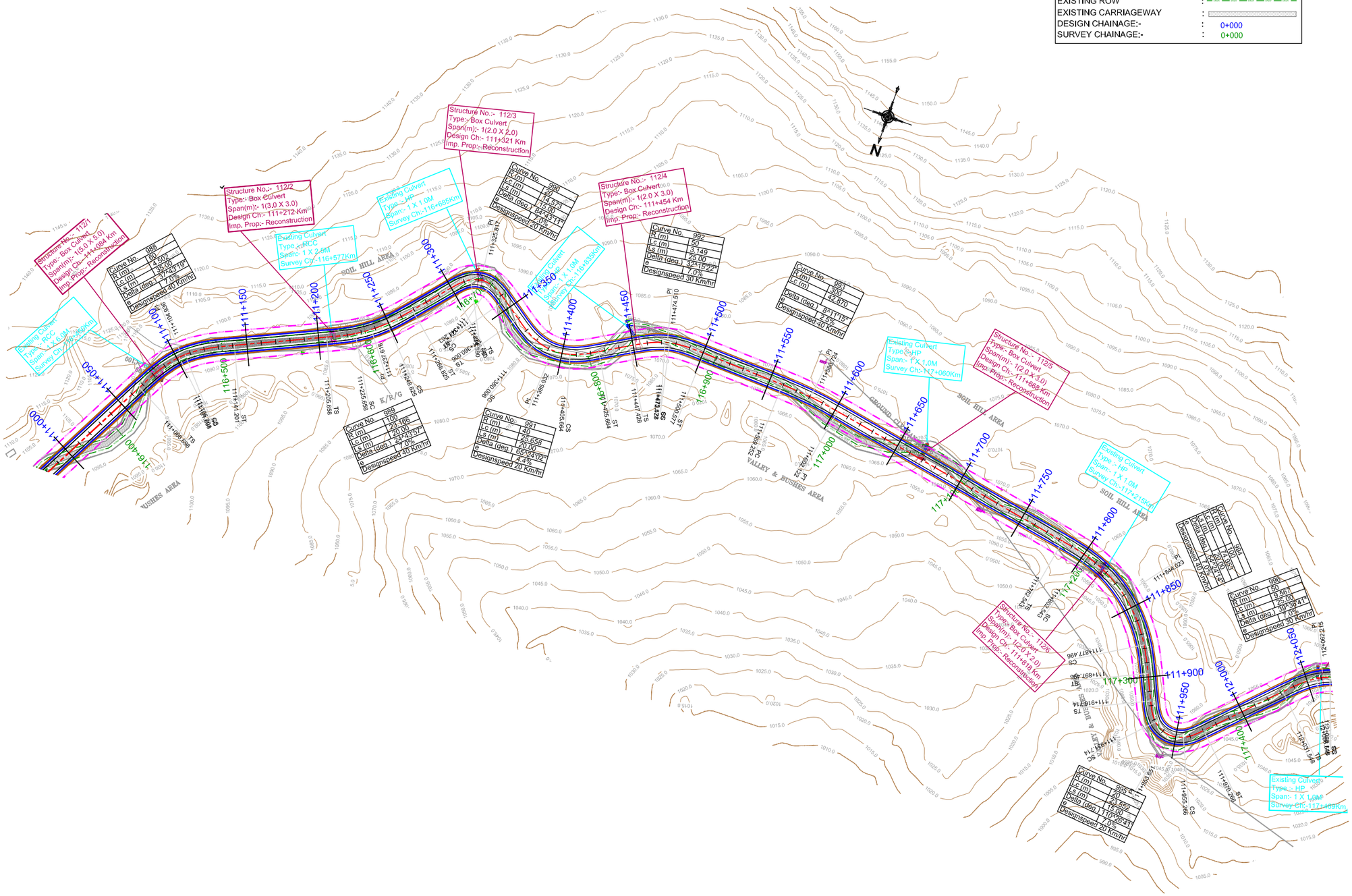
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

CHURACHANDPUR

TUIVAI

LEGEND : -

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



MKD.	DATE	DESCRIPTION	CHKD.	APPRD.
REVISIONS				

Scale :- 1:2000

DATE: APRIL, 2020

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 PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

PLAN
Km 111+000 to Km 112+000

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

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-IIIC/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 LEVEL. ALONG THE PROPOSED CL.	1100.767 1099.579 1098.371 1097.164 1095.956 1094.748 1093.541 1092.333 1091.126 1089.918 1088.710 1087.503 1086.295 1085.087 1083.880 1082.672 1081.464 1080.257 1079.049 1077.842 1076.634 1075.426 1074.219 1073.011 1071.803 1070.596 1069.388 1068.180 1066.973 1065.765 1064.558 1063.350 1062.118 1060.840 1059.525 1058.208 1056.890 1055.573 1054.255 1052.937 1051.620 1050.302 1048.985
EXISTING GROUND LEVEL ALONG THE PROPOSED CL.	1100.429 1104.181 1099.907 1096.071 1095.501 1095.071 1093.763 1092.302 1090.840 1089.470 1088.286 1087.335 1086.230 1083.650 1083.654 1085.270 1081.295 1080.331 1077.493 1077.608 1075.756 1074.335 1072.624 1071.415 1077.021 1074.257 1069.210 1065.167 1066.918 1066.202 1064.624 1062.865 1061.592 1060.223 1059.156 1058.187 1057.322 1056.409 1054.520 1052.352 1051.241 1050.124 1048.252
HORIZONTAL ALIGNMENT	L 35.00 A 45.83 · L 4.50 R 60.00 · L 35.00 A 45.83 · L 20.00 A 44.72 · L 23.17 R 100.00 · L 20.00 A 44.72 · L 15.00 A 17.32 · L 14.67 R 20.00 · L 15.00 A 17.32 · L 20.00 A 28.28 · L 25.66 R 40.00 · L 20.00 A 28.28 · L 25.00 A 35.36 · L 3.15 R 50.00 · L 25.00 A 35.36 · L 42.87 R 300.00 · L 20.00 A 44.72 · L 74.95 R 100.00 · L 20.00 A 44.72 · L 15.00 A 17.32 · L 23.55 R 20.00 · L 15.00 A 17.32 · L 25.00 A 35.36 · L 9 R 50
VERTICAL ALIGNMENT	L1098.686 Slp-4.831% · L60.000 L1 30.000 L2 30.000 · L292.345 Slp-5.270%
SUPERELEVATION (e %)	e 2.5% · e 4.5% · e 7.0%
CHAINAGE (KM)	111+000 111+025 111+050 111+075 111+100 111+125 111+150 111+175 111+200 111+225 111+250 111+275 111+300 111+325 111+350 111+375 111+400 111+425 111+450 111+475 111+500 111+525 111+550 111+575 111+600 111+625 111+650 111+675 111+700 111+725 111+750 111+775 111+800 111+825 111+850 111+875 111+900 111+925 111+950 111+975 112+000 112+025 112+050

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- VER- 1:200

DATE: APRIL, 2020

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 PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

PROFILE
Km 111+000 to Km 112+000

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

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.

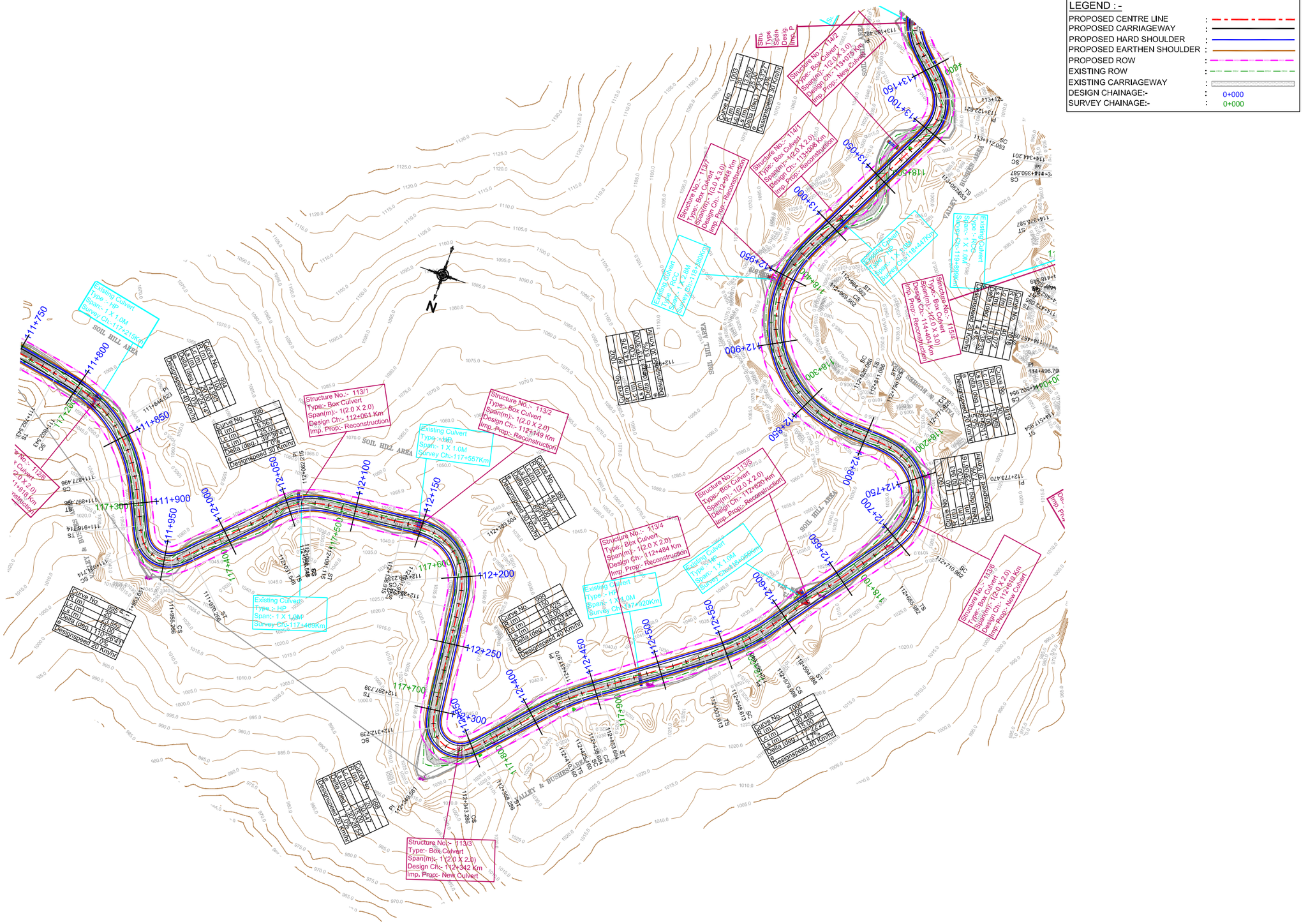
DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IIIC/PROFILE

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

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
EXISTING ROW
EXISTING CARRIAGEWAY
DESIGN CHAINAGE:- 0+000
SURVEY CHAINAGE:- 0+000
SOIL HILL AREA
VALLEY & BUSHES AREA
Structure No.:- 113/1
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 112+061 Km
Imp. Prop:- Reconstruction
Structure No.:- 113/2
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 112+149 Km
Imp. Prop:- Reconstruction
Structure No.:- 113/3
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 112+342 Km
Imp. Prop:- New Culvert
Structure No.:- 113/4
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 112+484 Km
Imp. Prop:- Reconstruction
Structure No.:- 113/5
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 112+620 Km
Imp. Prop:- Reconstruction
Structure No.:- 113/6
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 112+810 Km
Imp. Prop:- New Culvert
Structure No.:- 113/7
Type:- Box Culvert
Span(m):- 1(3.0 X 3.0)
Design Ch:- 112+948 Km
Imp. Prop:- Reconstruction
Structure No.:- 114/1
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 113+008 Km
Imp. Prop:- Reconstruction
Structure No.:- 114/2
Type:- Box Culvert
Span(m):- 1(2.0 X 3.0)
Design Ch:- 113+079 Km
Imp. Prop:- New Culvert
Structure No.:- 114/3
Type:- Box Culvert
Span(m):- 1(3.0 X 3.0)
Design Ch:- 113+404 Km
Imp. Prop:- Reconstruction
Existing Culvert
Type:- RCC
Span:- 1 X 1.0M
Survey Ch:- 117+557Km
Existing Culvert
Type:- HP
Span:- 1 X 1.0M
Survey Ch:- 117+469Km
Existing Culvert
Type:- HP
Span:- 1 X 1.0M
Survey Ch:- 117+920Km
Existing Culvert
Type:- HP
Span:- 1 X 1.0M
Survey Ch:- 118+447Km
Existing Culvert
Type:- RCC
Span:- 1 X 1.0M
Survey Ch:- 119+889Km
Existing Culvert
Type:- HP
Span:- 1 X 1.0M
Survey Ch:- 118+480Km
Existing Culvert
Type:- RCC
Span:- 1 X 2.0M
Survey Ch:- 118+480Km
Existing Culvert
Type:- HP
Span:- 1 X 1.0M
Survey Ch:- 118+645Km
Curve No. 996
R (m) 50
Lc (m) 9.567
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 995
R (m) 50
Lc (m) 20
Ls (m) 23.565
Delta (deg.) 110°06'41"
e 7.0%
Designspeed 20 Km/hr
Curve No. 997
R (m) 50
Lc (m) 20
Ls (m) 23.565
Delta (deg.) 110°06'41"
e 7.0%
Designspeed 20 Km/hr
Curve No. 998
R (m) 50
Lc (m) 20
Ls (m) 23.565
Delta (deg.) 110°06'41"
e 7.0%
Designspeed 20 Km/hr
Curve No. 999
R (m) 150
Lc (m) 15.045
Ls (m) 15.00
Delta (deg.) 10°08'44"
e 4.7%
Designspeed 40 Km/hr
Curve No. 1000
R (m) 150
Lc (m) 15.045
Ls (m) 15.00
Delta (deg.) 10°08'44"
e 4.7%
Designspeed 40 Km/hr
Curve No. 1001
R (m) 150
Lc (m) 30.485
Ls (m) 15.00
Delta (deg.) 11°38'27"
e 4.7%
Designspeed 40 Km/hr
Curve No. 1002
R (m) 150
Lc (m) 15.045
Ls (m) 15.00
Delta (deg.) 10°08'44"
e 4.7%
Designspeed 40 Km/hr
Curve No. 1003
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1004
R (m) 150
Lc (m) 15.045
Ls (m) 15.00
Delta (deg.) 10°08'44"
e 4.7%
Designspeed 40 Km/hr
Curve No. 1005
R (m) 150
Lc (m) 15.045
Ls (m) 15.00
Delta (deg.) 10°08'44"
e 4.7%
Designspeed 40 Km/hr
Curve No. 1006
R (m) 150
Lc (m) 15.045
Ls (m) 15.00
Delta (deg.) 10°08'44"
e 4.7%
Designspeed 40 Km/hr
Curve No. 1007
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1008
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1009
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1010
R (m) 150
Lc (m) 15.045
Ls (m) 15.00
Delta (deg.) 10°08'44"
e 4.7%
Designspeed 40 Km/hr
Curve No. 1011
R (m) 150
Lc (m) 15.045
Ls (m) 15.00
Delta (deg.) 10°08'44"
e 4.7%
Designspeed 40 Km/hr
Curve No. 1012
R (m) 150
Lc (m) 15.045
Ls (m) 15.00
Delta (deg.) 10°08'44"
e 4.7%
Designspeed 40 Km/hr
Curve No. 1013
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1014
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1015
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1016
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1017
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1018
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1019
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1020
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1021
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1022
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1023
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1024
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1025
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1026
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1027
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1028
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1029
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1030
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1031
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1032
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1033
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1034
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1035
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1036
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1037
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1038
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1039
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1040
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1041
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1042
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1043
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1044
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1045
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1046
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1047
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
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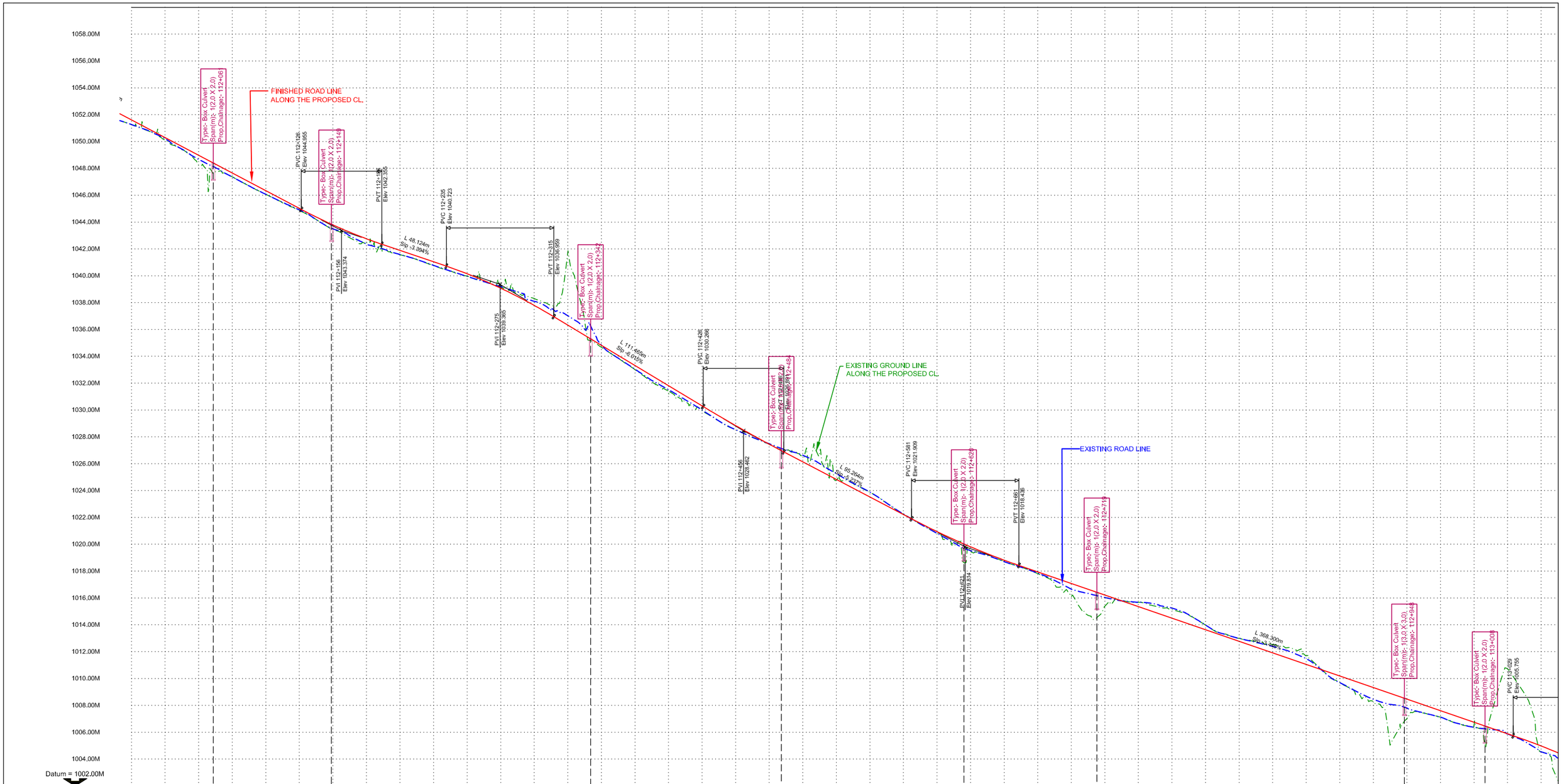
Designspeed 30 Km/hr
Curve No. 1048
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1049
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1050
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1051
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1052
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1053
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1054
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1055
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1056
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1057
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1058
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1059
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1060
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1061
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1062
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1063
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1064
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1065
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1066
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1067
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1068
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1069
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1070
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1071
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1072
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1073
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1074
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1075
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1076
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1077
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1078
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1079
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1080
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1081
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1082
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1083
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1084
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1085
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1086
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1087
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1088
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1089
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1090
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1091
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1092
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1093
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1094
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1095
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1096
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1097
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1098
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1099
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1100
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1101
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1102
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1103
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1104
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1105
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1106
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1107
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1108
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1109
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1110
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1111
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1112
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1113
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1114
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1115
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1116
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1117
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1118
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1119
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1120
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1121
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1122
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1123
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1124
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1125
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1126
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1127
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1128
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1129
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1130
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1131
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1132
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1133
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1134
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1135
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1136
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1137
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1138
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1139
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1140
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1141
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1142
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1143
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1144
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1145
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1146
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1147
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1148
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1149
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1150
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1151
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1152
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1153
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1154
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1155
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1156
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1157
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1158
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1159
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1160
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1161
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1162
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1163
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1164
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1165
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1166
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1167
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1168
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1169
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1170
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1171
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1172
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1173
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1174
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1175
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1176
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1177
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1178
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1179
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1180
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1181
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1182
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1183
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1184
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1185
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1186
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1187
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1188
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1189
R (m) 50
Lc (m) 29.422
Ls (m) 25.00
Delta (deg.) 29°39'41"
e 7.0%
Designspeed 30 Km/hr
Curve No. 1190
R (m) 50
Lc (m) 29.422
Ls (m) 25.00



CHAINAGE (KM)	FINISHED ROAD LEVEL, ALONG THE PROPOSED CL.	EXISTING GROUND LEVEL ALONG THE PROPOSED CL.
112+000	1051.620	1051.241
112+025	1050.302	1050.124
112+050	1048.985	1048.252
112+075	1047.667	1047.382
112+100	1046.350	1046.079
112+125	1045.032	1044.900
112+150	1043.801	1043.491
112+175	1042.765	1042.401
112+200	1041.898	1041.584
112+225	1041.047	1040.762
112+250	1040.160	1039.977
112+275	1039.083	1039.149
112+300	1037.800	1038.315
112+325	1036.331	1041.752
112+350	1034.827	1034.683
112+375	1033.324	1033.025
112+400	1031.820	1031.260
112+425	1030.316	1029.949
112+450	1028.850	1028.527
112+475	1027.465	1027.453
112+500	1026.148	1026.562
112+525	1024.839	1024.803
112+550	1023.530	1023.880
112+575	1022.221	1022.250
112+600	1020.952	1020.840
112+625	1019.819	1019.450
112+650	1018.827	1018.711
112+675	1017.952	1017.826
112+700	1017.091	1016.112
112+725	1016.230	1015.400
112+750	1015.368	1015.685
112+775	1014.507	1015.139
112+800	1013.646	1013.987
112+825	1012.785	1012.998
112+850	1011.923	1012.539
112+875	1011.062	1011.713
112+900	1010.201	1009.714
112+925	1009.340	1008.251
112+950	1008.478	1007.040
112+975	1007.617	1007.135
113+000	1006.756	1006.646
113+025	1005.894	1010.708
113+050	1004.985	1004.549

HORIZONTAL ALIGNMENT: L 25.00 A 35.36 | L 9.57 R 50.00 | L 25.00 A 35.36 | L 25.00 A 31.62 | L 37.32 R 40.00 | L 25.00 A 31.62 | L 15.00 A 17.32 | L 30.55 R 20.00 | L 15.00 A 17.32 | L 15.00 L 13.52 L 15.00 A 47.43 R 150.00 A 47.43 | L 15.00 A 47.43 | L 30.49 R 150.00 | L 15.00 A 47.43 | L 25.00 A 31.62 | L 60.94 R 40.00 | L 25.00 A 31.62 | L 15.00 A 34.64 | L 143.48 R 80.00 | L 15.00 A 34.64

VERTICAL ALIGNMENT: L60.000 L1 30.000 L2 30.000 | L48.096 Slp-3.994% | L80.000 L1 40.000 L2 40.000 | L111.264 Slp-6.015% | L60.000 L1 30.000 L2 30.000 | L95.134 Slp-5.237% | L80.000 L1 40.000 L2 40.000 | L368.082 Slp-3.445%

SUPERELEVATION (e %)

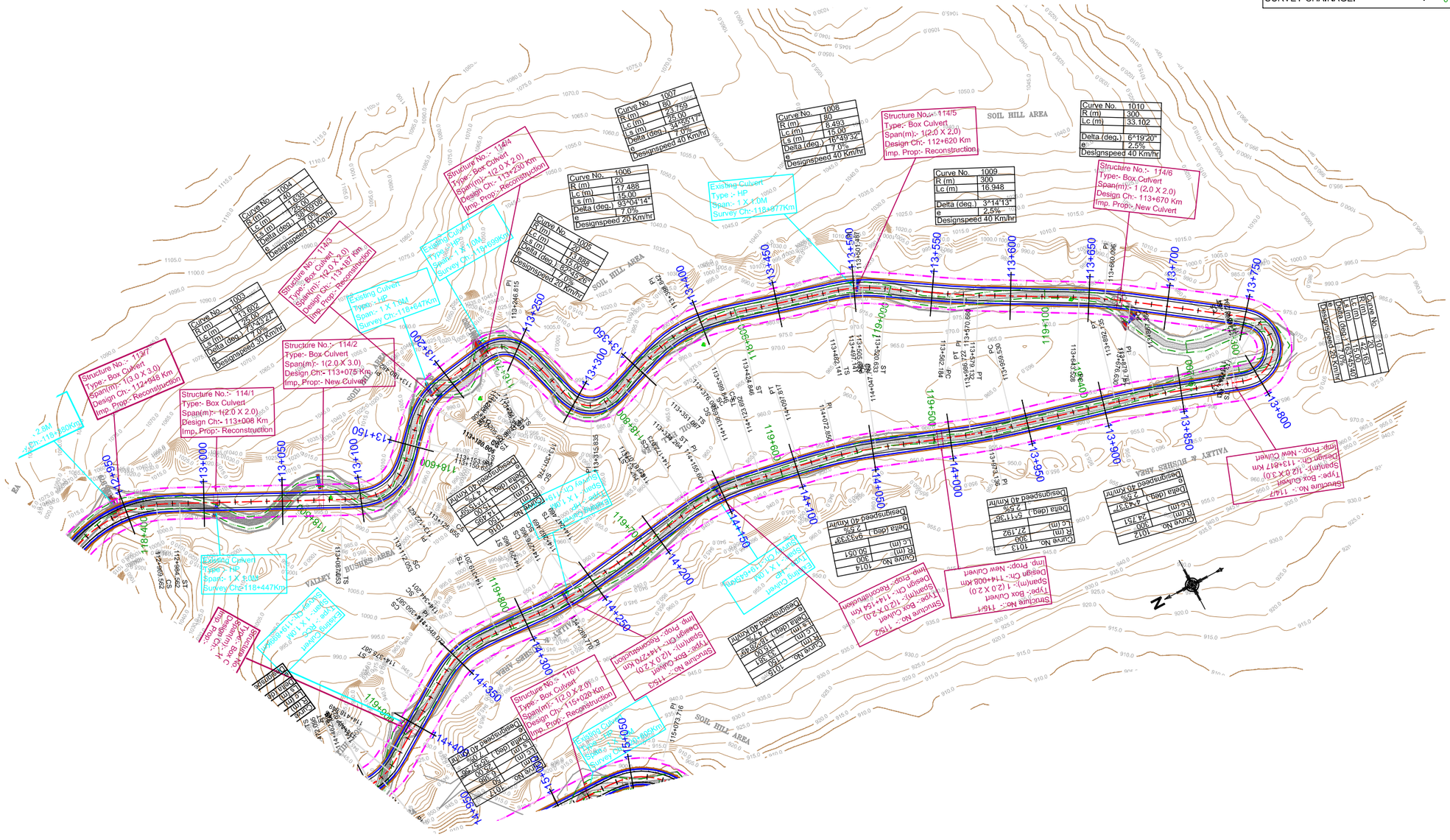
| | | |

CHURACHANDPUR

TUIVAI

LEGEND : -

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



					Scale :- 1:2000	
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.	DATE: APRIL, 2020	
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 ***CHURACHANDPUR – TUIVAI ROAD SECTION(LENGTH = 162 KM) ON NH-102B (MANIPUR)*** ON ENGINEERING,PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

PLAN
Km 113+000 to Km 114+000

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

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-IIIC/PLAN			
REVISION MKD. - R0		SHEET NO. - 11	
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

FINISHED ROAD LEVEL, ALONG THE PROPOSED CL.	1006.756 1005.894 1004.985 1003.942 1002.761 1001.445 999.992 998.403 996.725 995.046 993.367 991.687 990.008 988.333 986.871 985.739 984.938 984.315 983.692 983.069 982.362 981.518 980.571 979.618 978.665 977.712 976.692 975.424 973.910 972.335 970.760 969.186 967.667 966.303 965.080 963.881 962.682 961.482 960.233 958.892 957.477 956.056 954.636
EXISTING GROUND LEVEL ALONG THE PROPOSED CL.	1006.646 1010.708 1004.549 998.145 1002.495 1001.136 1000.192 998.903 999.587 995.405 993.105 991.555 989.912 987.809 986.506 985.432 984.680 984.165 983.708 982.984 982.248 981.201 980.137 979.166 978.130 977.256 976.430 976.378 978.662 979.710 971.296 968.071 964.332 963.827 964.806 964.006 962.568 961.393 960.121 958.729 957.174 955.762 954.004
HORIZONTAL ALIGNMENT	L 25.00 A 27.39 L 13.60 R 30.00 L 25.00 A 27.39 L 25.00 A 31.62 L 1.64 L 40.00 A 31.62 L 15.00 A 17.32 L 13.80 R 20.00 L 15.00 A 17.32 L 15.00 A 17.32 L 17.49 R 20.00 L 15.00 A 17.32 L 25.00 A 44.72 L 23.76 R 80.00 L 25.00 A 44.72 L 15.00 A 34.64 L 8.49 R 80.00 L 15.00 A 34.64 L 16.95 R 300.00 L 33.10 R 300.00 L 15.00 A 17.32 L 42.16 R 20.00 L 15.00 A 17.32 L 24.75 R 300.00 L 27.19 R 300.00
VERTICAL ALIGNMENT	L150.000 L1 75.000 L2 75.000 L141.977 Slp-6.716% L80.000 L1 40.000 L2 40.000 L71.237 Slp-2.491% L60.000 L1 30.000 L2 30.000 L99.800 Slp-3.812% L60.000 L1 30.000 L2 30.000 L86.790 Slp-6.299% L60.000 L1 30.000 L2 30.000 L85.084 Slp-4.797% L60.000 L1 30.000 L2 30.000 L137.237 Slp-5.682%
SUPERELEVATION (e %)	e 4.5%
CHAINAGE (KM)	113+000 113+025 113+050 113+075 113+100 113+125 113+150 113+175 113+200 113+225 113+250 113+275 113+300 113+325 113+350 113+375 113+400 113+425 113+450 113+475 113+500 113+525 113+550 113+575 113+600 113+625 113+650 113+675 113+700 113+725 113+750 113+775 113+800 113+825 113+850 113+875 113+900 113+925 113+950 113+975 114+000 114+025 114+050

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- VER- 1:200

DATE: APRIL, 2020

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 PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-4J-TP/Manipur/2017)

PROFILE
Km 113+000 to Km 114+000

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

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-IIIC/PROFILE

REVISION MKD. - R0 | SHEET NO. - 11A

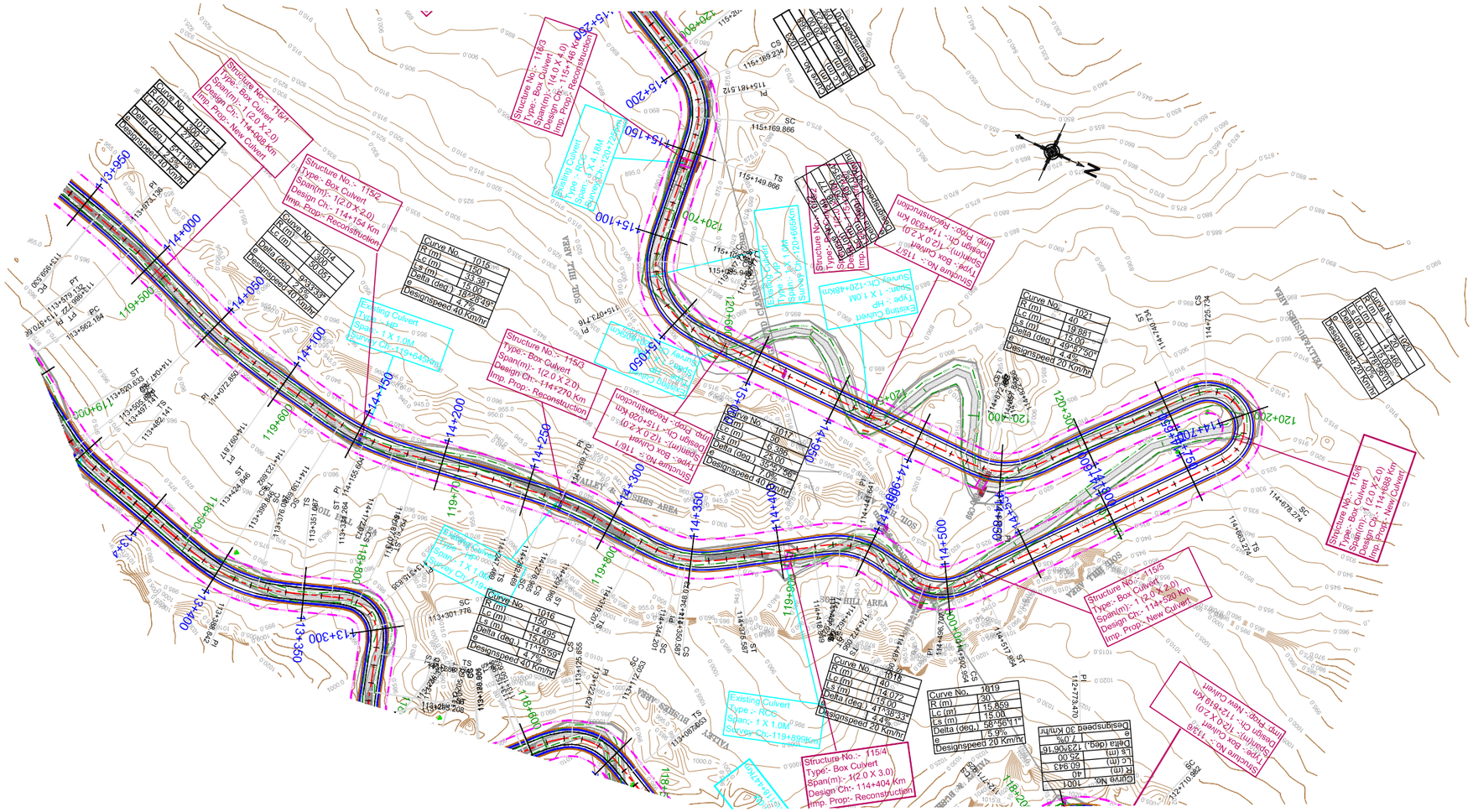
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

CHURACHANDPUR

TUIVAI

LEGEND : -

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



					Scale :- 1:2000	CLIENT:	NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building,3rd Floor, 4 Parliament Street, New Delhi - 110001
					DATE: APRIL, 2020	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 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 114+000 to Km 115+000

SUBMISSION TYPE :

FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

CONSULTANT :

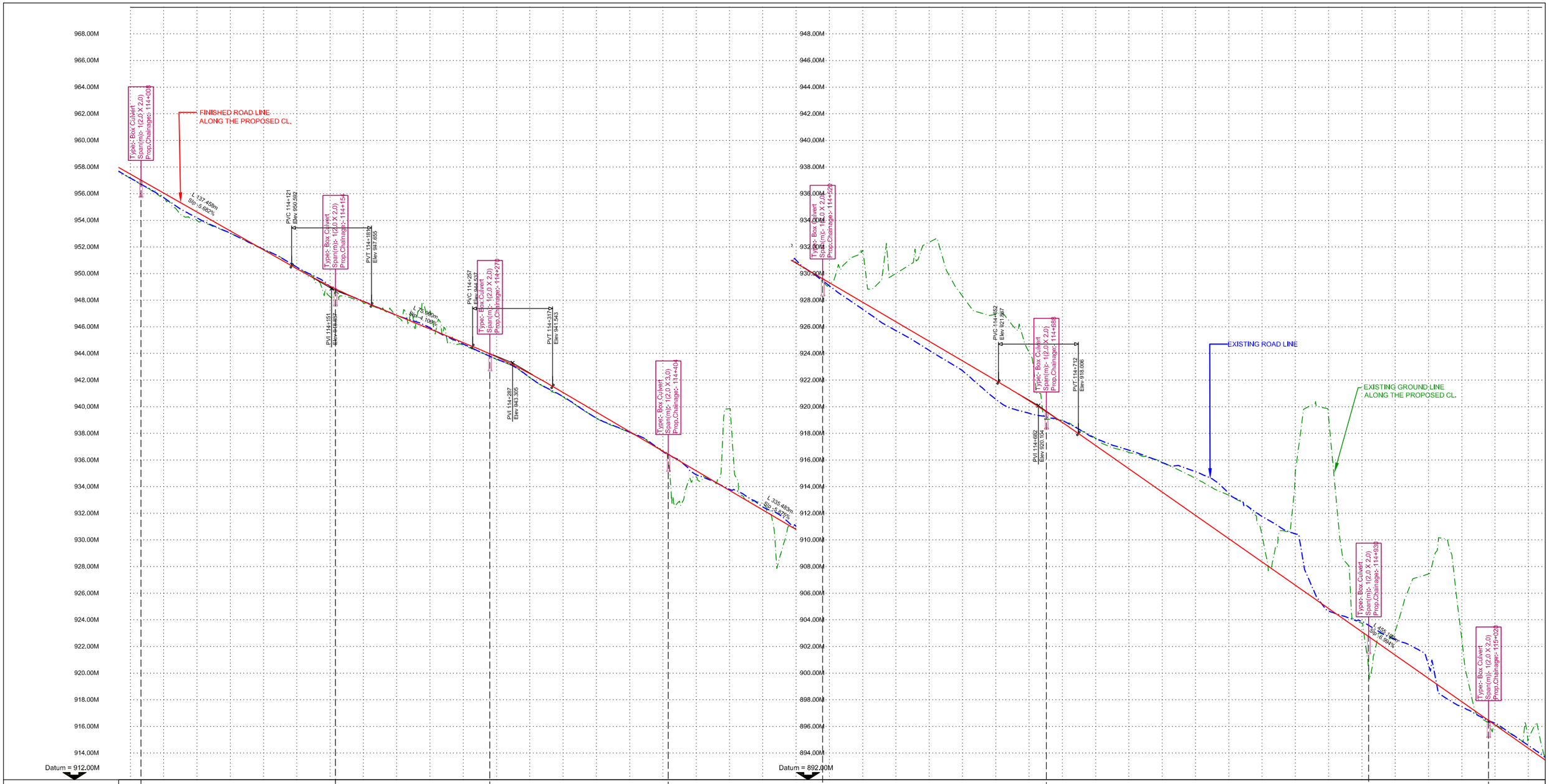
CETEST Engineering Consultants — An ISO 9001, 14001 & OHSAS 18001 Certified Company

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-IIIC/PLAN

REVISION MKD. - R0 | SHEET NO. - 12

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.
Datum = 912.00M
Datum = 892.00M
Type:- Box Culvert Span(m):- 1(2.0 X 2.0) Prop.Chainage:- 114+000
Type:- Box Culvert Span(m):- 1(2.0 X 2.0) Prop.Chainage:- 114+151
Type:- Box Culvert Span(m):- 1(2.0 X 2.0) Prop.Chainage:- 114+257
Type:- Box Culvert Span(m):- 1(2.0 X 2.0) Prop.Chainage:- 114+400
Type:- Box Culvert Span(m):- 1(2.0 X 2.0) Prop.Chainage:- 114+526
Type:- Box Culvert Span(m):- 1(2.0 X 2.0) Prop.Chainage:- 114+688
Type:- Box Culvert Span(m):- 1(2.0 X 2.0) Prop.Chainage:- 114+839
Type:- Box Culvert Span(m):- 1(2.0 X 2.0) Prop.Chainage:- 115+025
L 137.48m Slp=-5.682%
L 75.926m Slp=-4.106%
L 334.906m Slp=-5.875%
L 455.196m Slp=-6.994%
PVC 114+121 Elev 960.592
PVT 114+187 Elev 957.655
PVI 114+151 Elev 958.937
PVC 114+257 Elev 944.143
PVT 114+317 Elev 941.543
PVI 114+287 Elev 943.305
PVC 114+652 Elev 921.987
PVT 114+712 Elev 918.006
PVI 114+682 Elev 920.106

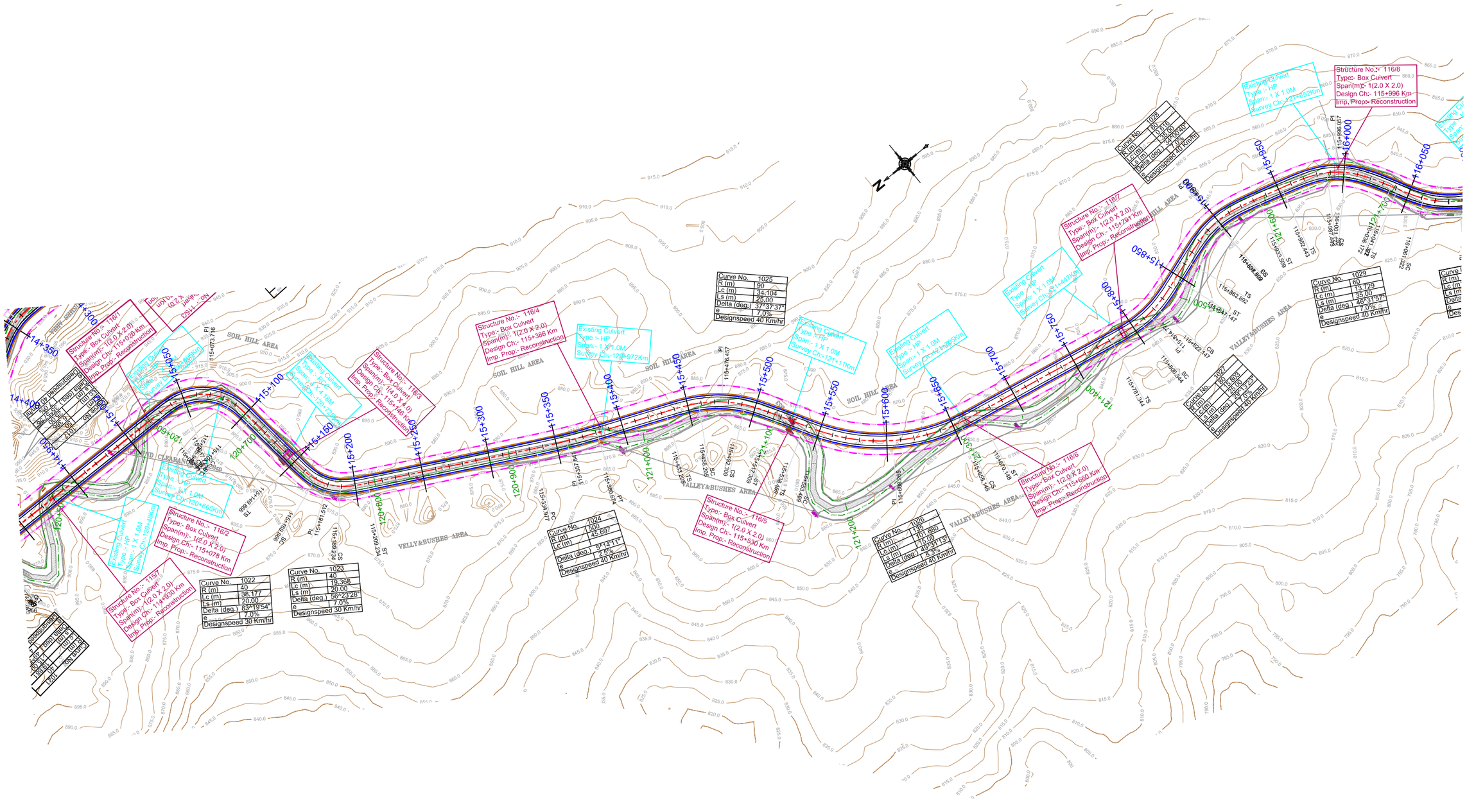
| | | |

CHURACHANDPUR

TUIVAI

LEGEND : -

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



					Scale :- 1:2000	CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building,3rd Floor, 4 Parliament Street, New Delhi - 110001
					DATE: APRIL, 2020	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 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 115+000 to Km 116+000

SUBMISSION TYPE :

FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

CONSULTANT :

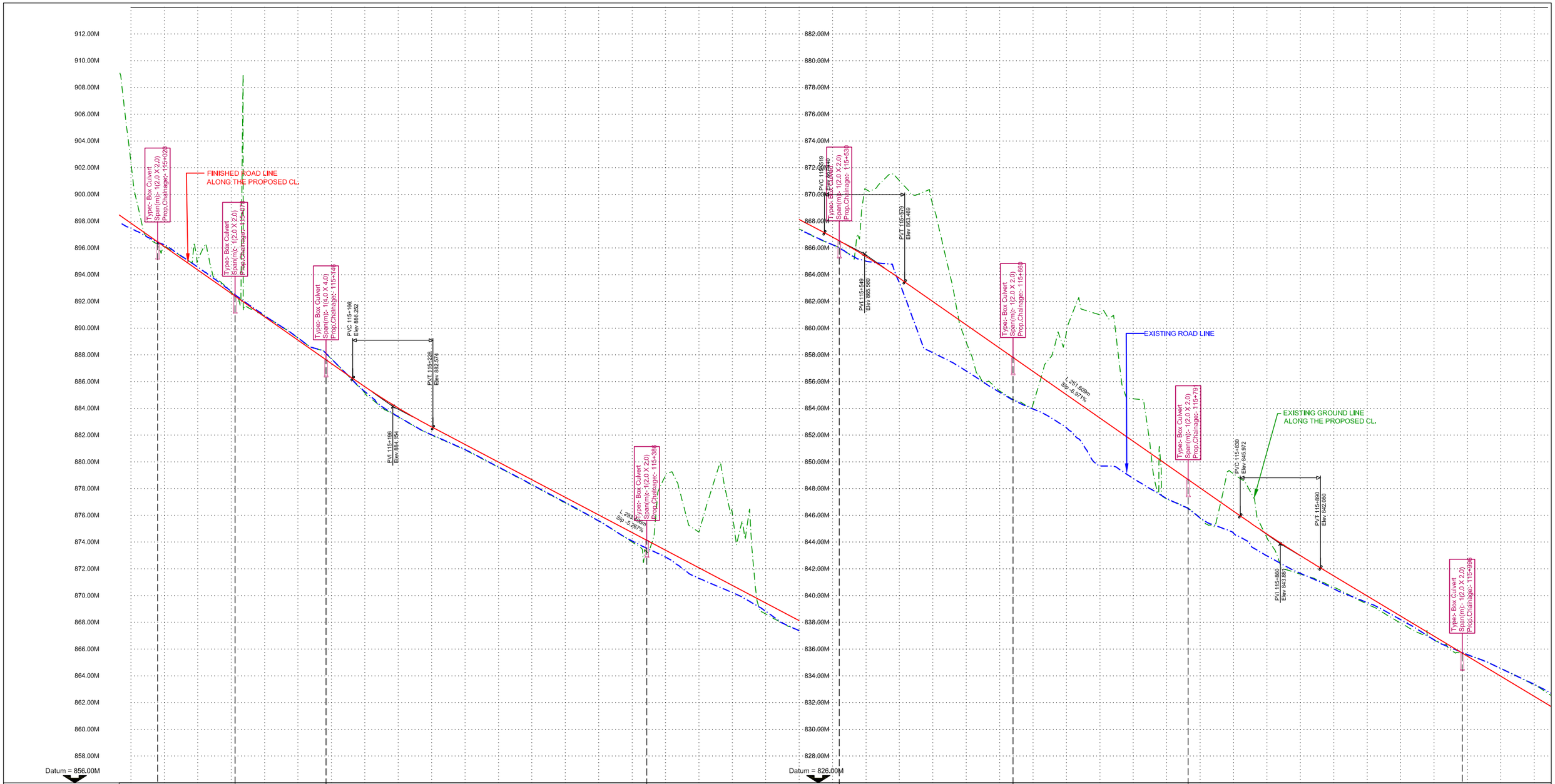
CE TESTING COMPANY PVT. LTD.

124-A, N.S.C. Bose Road,

Kolkata - 700092.

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

REVISION MKD. - R0		SHEET NO. - 13	
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.
Datum = 856.00M
Datum = 826.00M

| | | |

CHURACHANDPUR

TUIVAI

LEGEND : -

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

Structure No.:- 116/8
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 115+996 Km
Imp. Prop:- Reconstruction

Existing Culvert
Type:- HP
Span:- 1 X 1.0M
Survey Ch:- 121+652Km

Existing Culvert
Type:- HP
Span:- 1 X 1.0M
Survey Ch:- 121+920Km

Structure No.:- 117/1
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 116+146 Km
Imp. Prop:- Reconstruction

Structure No.:- 117/2
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 116+432 Km
Imp. Prop:- New Culvert

Structure No.:- 117/3
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Design Ch:- 116+720 Km
Imp. Prop:- New Culvert

Structure No.:- 117/4
Type:- Box Culvert
Span(m):- 1 (2.0 X 2.0)
Design Ch:- 116+985 Km
Imp. Prop:- New Culvert

Curve No.	1027
R (m)	60
Lc (m)	45.995
Ls (m)	25.00
Delta (deg.)	43°55'23"
e	7.0%
Designspeed 40 Km/hr	

Curve No.	1029
R (m)	60
Lc (m)	13.729
Ls (m)	35.00
Delta (deg.)	46°31'57"
e	7.0%
Designspeed 40 Km/hr	

Curve No.	1030
R (m)	75
Lc (m)	52.890
Ls (m)	20.00
Delta (deg.)	55°44'03"
e	7.0%
Designspeed 40 Km/hr	

Curve No.	1031
R (m)	75
Lc (m)	26.213
Ls (m)	20.00
Delta (deg.)	35°41'15"
e	7.0%
Designspeed 40 Km/hr	

Curve No.	1032
R (m)	80
Lc (m)	14.547
Ls (m)	25.00
Delta (deg.)	28°39'43"
e	7.0%
Designspeed 40 Km/hr	

Curve No.	1033
R (m)	50
Lc (m)	41.368
Ls (m)	40.00
Delta (deg.)	93°31'45"
e	7.0%
Designspeed 40 Km/hr	

Curve No.	1034
R (m)	150
Lc (m)	36.636
Ls (m)	30.00
Delta (deg.)	21°54'18"
e	5.7%
Designspeed 40 Km/hr	

Curve No.	1035
R (m)	80
Lc (m)	36.677
Ls (m)	25.00
Delta (deg.)	44°10'22"
e	7.0%
Designspeed 40 Km/hr	

Curve No.	1036
R (m)	125
Lc (m)	14.118
Ls (m)	15.00
Delta (deg.)	13°20'49"
e	5.7%
Designspeed 40 Km/hr	

SOIL HILL AREA

VALLEY&BUSHES AREA

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.	
REVISIONS					

Scale :- 1:2000

DATE: APRIL, 2020

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 PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

PLAN
Km 116+000 to Km 117+000

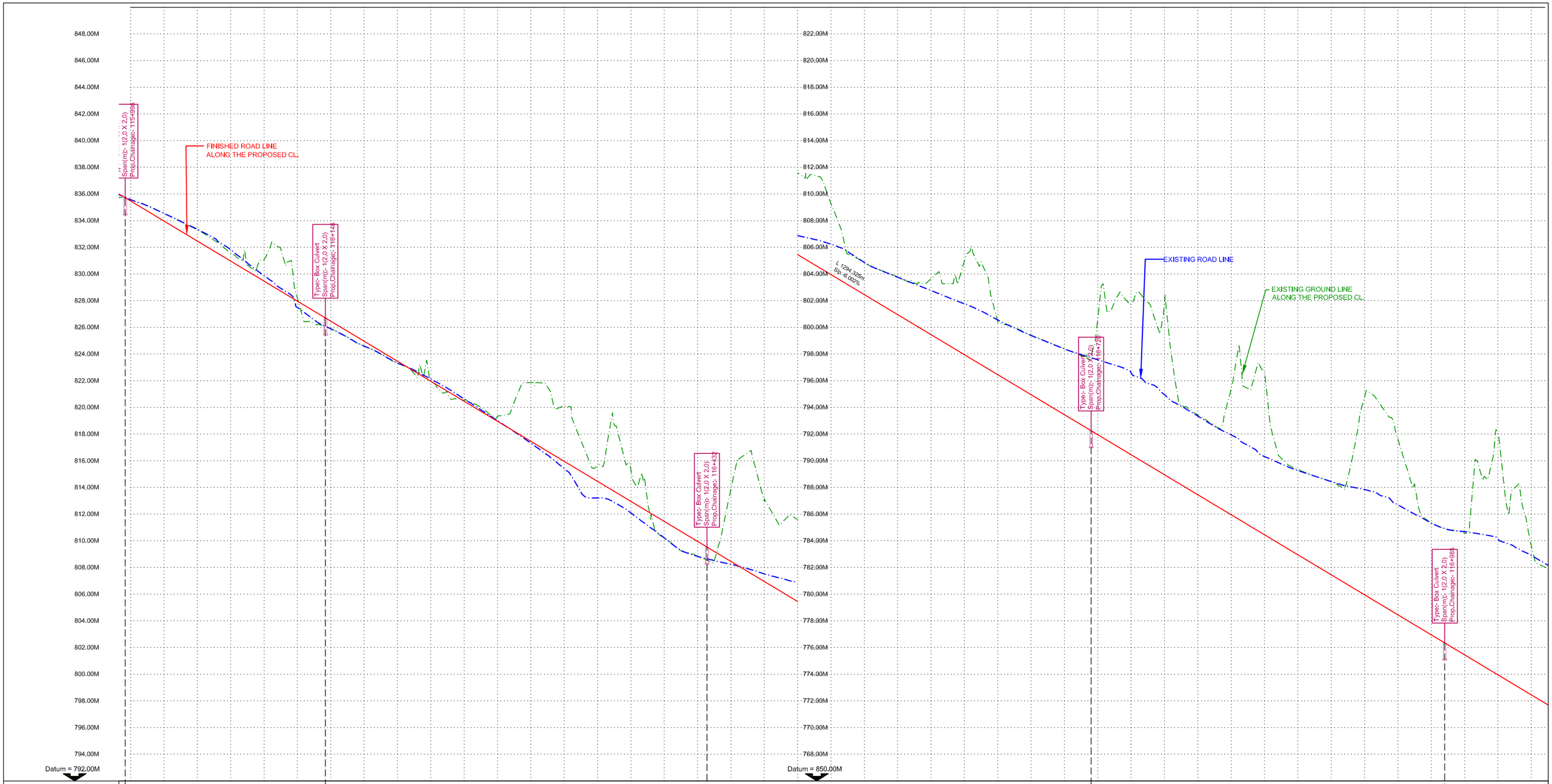
SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

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-IIIC/PLAN
REVISION MKD. - R0
SHEET NO. - 14

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



FINISHED ROAD LEVEL. ALONG THE PROPOSED CL.	835.478 833.978 832.477 830.977 829.478 827.976 826.475 824.975 823.474 821.974 820.473 818.973 817.473 815.972 814.472 812.971 811.471 809.970 808.470 806.969 805.469 803.968 802.468 800.967 799.467 797.966 796.466 794.965 793.465 791.964 790.464 788.963 787.463 785.962 784.462 782.961 781.461 779.961 778.460 776.960 775.459 773.959 772.458
EXISTING GROUND LEVEL ALONG THE PROPOSED CL.	835.579 834.560 833.343 831.584 831.088 828.203 825.918 824.612 823.350 822.071 820.562 819.353 821.874 820.119 815.633 815.377 810.218 808.856 813.901 813.049 811.589 809.300 804.888 803.628 803.647 804.977 800.465 799.423 798.400 800.683 801.741 801.912 793.439 795.401 796.689 789.382 788.447 794.812 791.595 785.351 784.587 791.969 783.576
HORIZONTAL ALIGNMENT	13.73 60.00 L 35.00 A 45.83 L 20.00 A 38.73 L 52.89 R 75.00 L 20.00 A 38.73 L 20.00 A 38.73 L 26.21 R 75.00 L 20.00 A 38.73 L 25.00 A 44.72 L 14.65 R 80.00 L 25.00 A 44.72 L 40.00 A 44.72 L 41.36 R 50.00 L 40.00 A 44.72 L 15.00 A 43.30 L 32.53 R 125.00 L 15.00 A 43.30 L 25.00 A 44.72 L 36.68 R 80.00 L 25.00 A 44.72 L 15.00 A 43.30 L 14.12 R 125.00 L 15.00 A 43.30 L 25.00 A 44.72 L 19.66 R 80.00
VERTICAL ALIGNMENT	L1292.000 Slp-6.002%
SUPERELEVATION (e %)	e 2.5% e 7.0% e 4.5%
CHAINAGE (KM)	116+000 116+025 116+050 116+075 116+100 116+125 116+150 116+175 116+200 116+225 116+250 116+275 116+300 116+325 116+350 116+375 116+400 116+425 116+450 116+475 116+500 116+525 116+550 116+575 116+600 116+625 116+650 116+675 116+700 116+725 116+750 116+775 116+800 116+825 116+850 116+875 116+900 116+925 116+950 116+975 117+000 117+025 117+050

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- VER- 1:200

DATE: APRIL, 2020

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 PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

PROFILE
Km 116+000 to Km 117+000

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

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-IIIC/PROFILE

REVISION MKD. - R0 | SHEET NO. - 14A

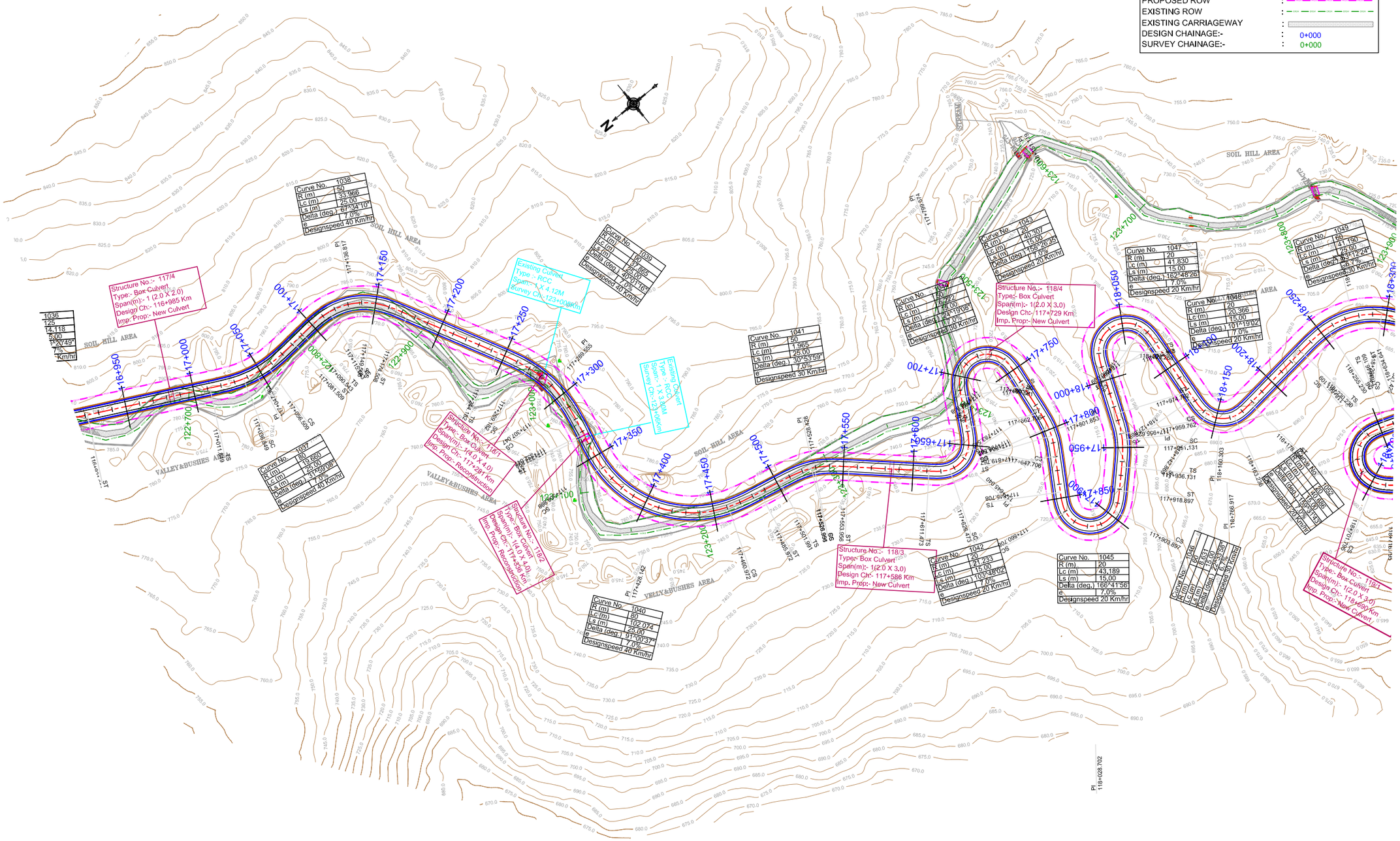
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

CHURACHANDPUR

TUIVAI

LEGEND : -

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



MKD.	DATE	DESCRIPTION	CHKD.	APPRD.	
REVISIONS					

Scale :- 1:2000

DATE: APRIL, 2020

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 PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

PLAN
Km 117+000 to Km 118+000

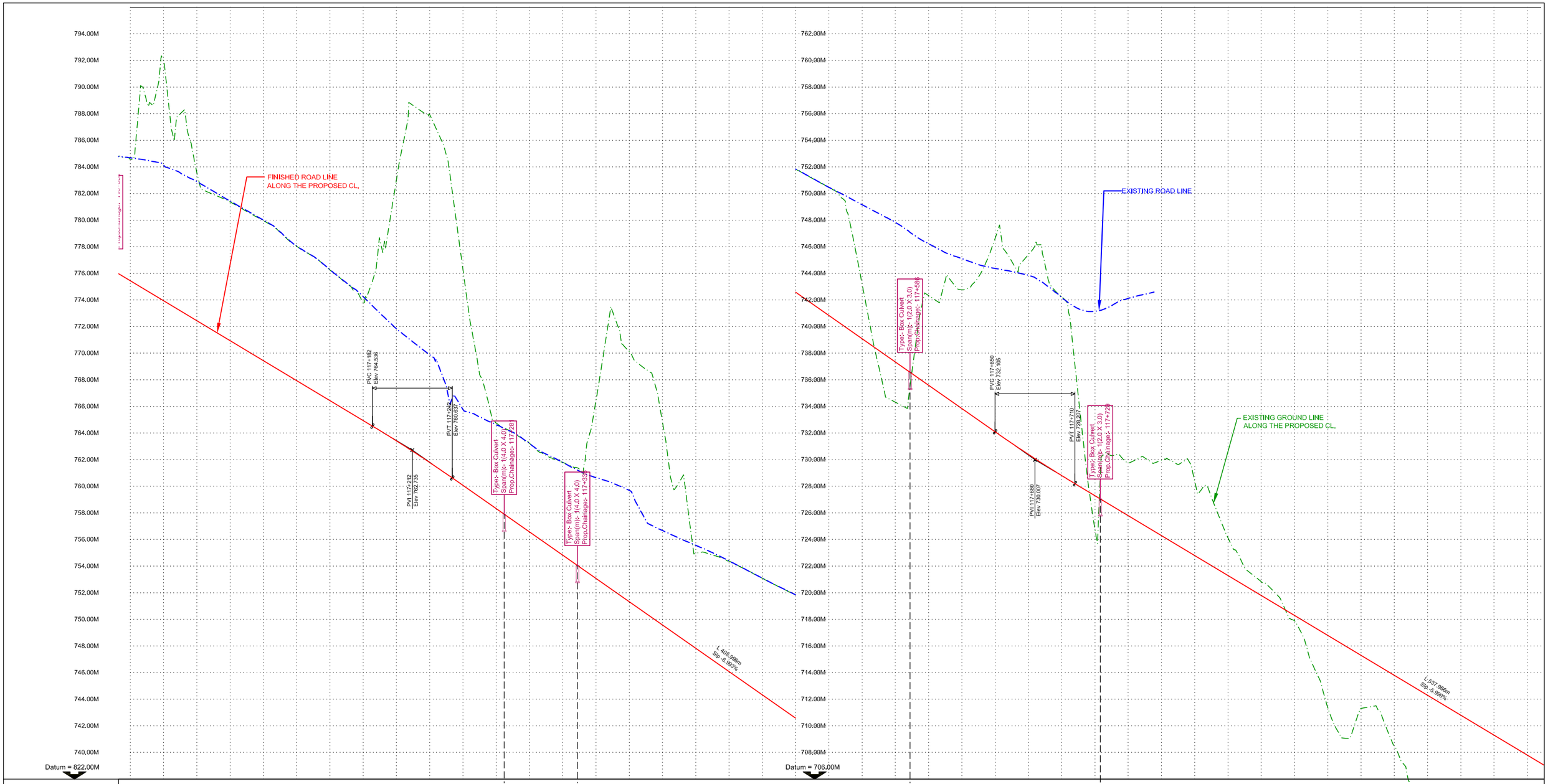
SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

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-IIIC/PLAN

REVISION MKD. - R0		SHEET NO. - 15	
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS


794.00M
792.00M
790.00M
788.00M
786.00M
784.00M
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
752.00M
750.00M
748.00M
746.00M
744.00M
742.00M
740.00M
Datum = 822.00M
FINISHED ROAD LINE
ALONG THE PROPOSED CL.
PVC 117+162
Elev 764.536
PVI 117+212
Elev 762.735
PVT 117+262
Elev 760.932
Type:- Box Culvert
Span(m):- 1(4.0 X 4.0)
Prop.Chainage:- 117+328
Type:- Box Culvert
Span(m):- 1(4.0 X 4.0)
Prop.Chainage:- 117+338
L 408.666m
Slp -6.993%
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
708.00M
Datum = 706.00M
EXISTING ROAD LINE
Type:- Box Culvert
Span(m):- 1(2.0 X 3.0)
Prop.Chainage:- 117+586
PVC 117+660
Elev 732.105
PVI 117+690
Elev 730.007
PVT 117+710
Elev 728.207
Type:- Box Culvert
Span(m):- 1(2.0 X 3.0)
Prop.Chainage:- 117+726
EXISTING GROUND LINE
ALONG THE PROPOSED CL.
L 537.966m
Slp -5.999%

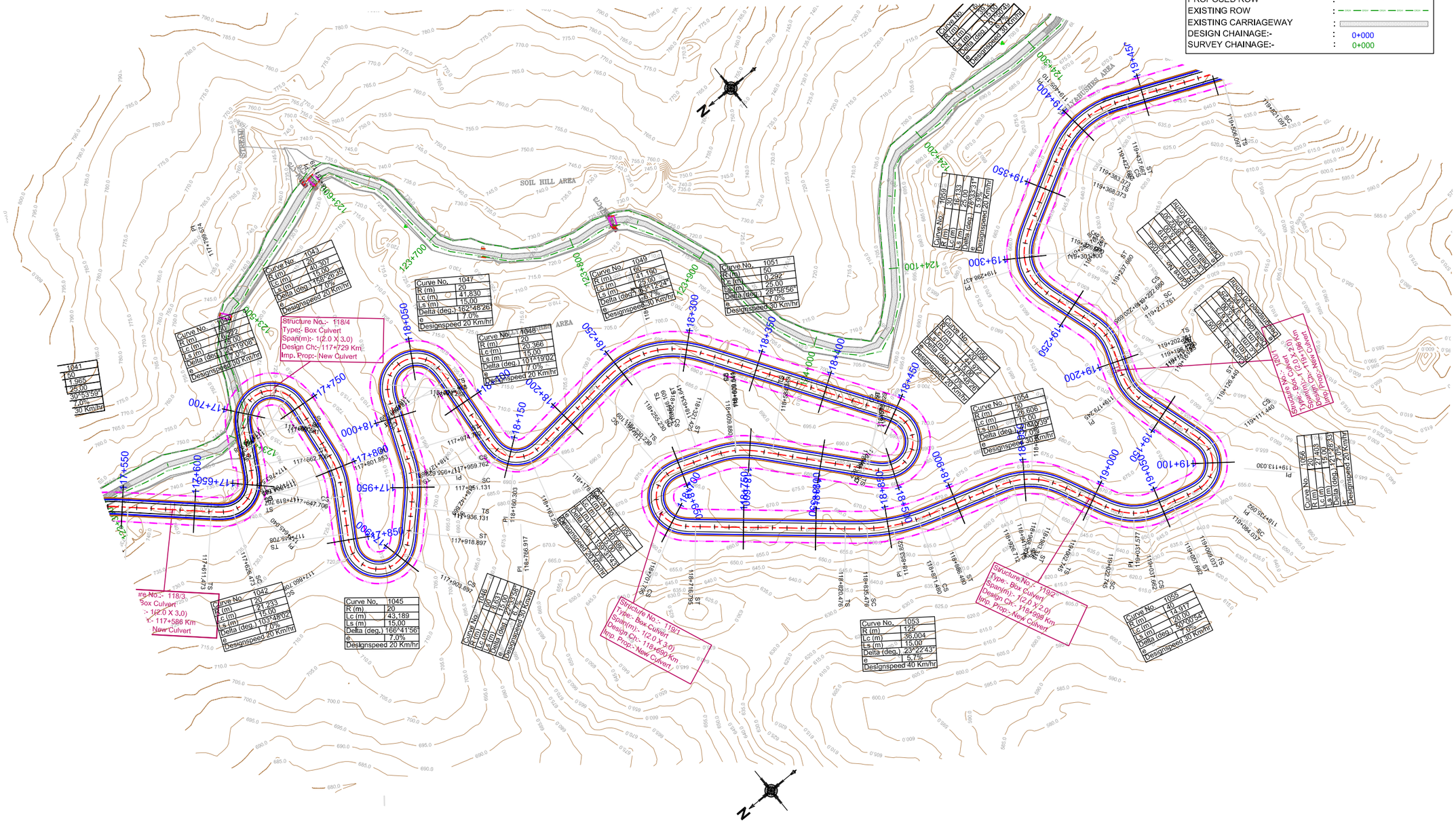
| | | |

CHURACHANDPUR

TUIVAI

LEGEND : -

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



MKD.	DATE	DESCRIPTION	CHKD.	APPRD.	
REVISIONS					

Scale :- 1:2000

DATE: APRIL, 2020

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 PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

PLAN
Km 118+000 to Km 119+000

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

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-IIIC/PLAN

REVISION MKD. - R0 | SHEET NO. - 16

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

FINISHED ROAD LEVEL, ALONG THE PROPOSED CL.	710.809 709.309 707.809 706.310 704.810 703.310 701.810 700.310 698.810 697.311 695.810 694.264 692.642 690.945 689.204 687.463 685.722 683.981 682.241 680.500 678.759 677.018 675.277 673.536 671.795 670.061 668.544 667.345 666.466 665.898 665.432 664.966 664.500 664.034 663.568 663.103 662.637 662.171 661.705 661.239 660.773 660.307 659.841
EXISTING GROUND LEVEL ALONG THE PROPOSED CL.	704.480 703.147 702.412 699.675 700.498 701.385 700.165 699.939 703.635 693.831 692.587 691.016 694.962 699.810 695.763 700.751 703.861 699.224 701.023 694.280 685.863 684.467 684.687 685.582 681.120 673.372 670.954 666.748 662.650 664.910 665.683 662.733 660.935 661.915 665.925 665.529 665.317 662.833 661.512 663.170 659.577 662.031 663.887
HORIZONTAL ALIGNMENT	L 15.00 A 17.32 · L 41.83 R 20.00 · L 15.00 A 17.32 · L 15.00 A 17.32 · L 20.37 R 20.00 · L 15.00 A 17.32 · L 25.00 A 38.73 · L 41.19 R 60.00 · L 25.00 A 38.73 · L 15.00 A 17.32 · L 44.07 R 20.00 · L 15.00 A 17.32 · L 25.00 A 35.36 · 0.28 · R 50.00 · L 25.00 A 35.36 · L 15.00 A 17.32 · L 40.69 R 20.00 · L 15.00 A 17.32 · L 15.00 A 43.30 · L 36.00 R 125.00 · L 15.00 A 43.30 · L 15.00 A 27.39 · L 26.61 R 50.00 · L 15.00 A 27.39 · L 20.00 A 28.28 · L 14.92 R 40.00 · L 20.00 A 28.26
VERTICAL ALIGNMENT	L80.000 L1 40.000 L2 40.000 · L292.956 Slp-6.963% · L100.000 L1 50.000 L2 50.000 · L466.044 Slp-1.864%
SUPERELEVATION (e %)	118+000.9 e 2.5% · 118+011.6 e 4.0% · 118+013.1 e 4.7% · 118+025.0 e 7.0% · 118+050.5 e 4.5% · 118+062.5 e 2.5% · 118+082.5 e 2.5% · 118+083.2 e 4.0% · 118+085.2 e 4.7% · 118+097.2 e 7.0% · 118+112.2 e 4.7% · 118+114.2 e 4.0% · 118+116.2 e 2.5% · 118+121.3 e 2.5% · 118+130.2 e 2.5% · 118+131.2 e 4.0% · 118+133.2 e 4.7% · 118+145.2 e 7.0% · 118+160.3 e 2.5% · 118+185.5 e 4.5% · 118+187.2 e 4.7% · 118+199.2 e 7.0% · 118+218.5 e 7.0% · 118+220.5 e 4.7% · 118+222.5 e 4.0% · 118+224.5 e 2.5% · 118+275.4 e 4.5% · 118+280.3 e 2.5% · 118+281.3 e 4.0% · 118+283.3 e 4.7% · 118+295.3 e 7.0% · 118+310.3 e 4.7% · 118+312.3 e 4.0% · 118+314.3 e 2.5% · 118+322.2 e 2.5% · 118+323.2 e 4.0% · 118+325.2 e 4.7% · 118+337.2 e 7.0% · 118+352.2 e 4.7% · 118+354.2 e 4.0% · 118+356.2 e 2.5% · 118+363.1 e 2.5% · 118+364.1 e 4.0% · 118+366.1 e 4.7% · 118+378.1 e 7.0% · 118+393.1 e 4.7% · 118+395.1 e 4.0% · 118+397.1 e 2.5% · 118+401.4 e 2.5% · 118+402.4 e 4.0% · 118+404.4 e 4.7% · 118+416.4 e 7.0% · 118+431.4 e 4.7% · 118+433.4 e 4.0% · 118+435.4 e 2.5% · 118+440.3 e 2.5% · 118+441.3 e 4.0% · 118+443.3 e 4.7% · 118+455.3 e 7.0% · 118+470.3 e 4.7% · 118+472.3 e 4.0% · 118+474.3 e 2.5% · 118+479.7 e 2.5% · 118+480.7 e 4.0% · 118+482.7 e 4.7% · 118+494.7 e 7.0%
CHAINAGE (KM)	118+000 · 118+025 · 118+050 · 118+075 · 118+100 · 118+125 · 118+150 · 118+175 · 118+200 · 118+225 · 118+250 · 118+275 · 118+300 · 118+325 · 118+350 · 118+375 · 118+400 · 118+425 · 118+450 · 118+475 · 118+500 · 118+525 · 118+550 · 118+575 · 118+600 · 118+625 · 118+650 · 118+675 · 118+700 · 118+725 · 118+750 · 118+775 · 118+800 · 118+825 · 118+850 · 118+875 · 118+900 · 118+925 · 118+950 · 118+975 · 119+000 · 119+025 · 119+050

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :-
VER- 1:200

DATE:
APRIL, 2020

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 PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-JJ-TP/Manipur/2017)

PROFILE
Km 118+000 to Km 119+000

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

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-IIIC/PROFILE

REVISION MKD. - R0 | SHEET NO. - 16A

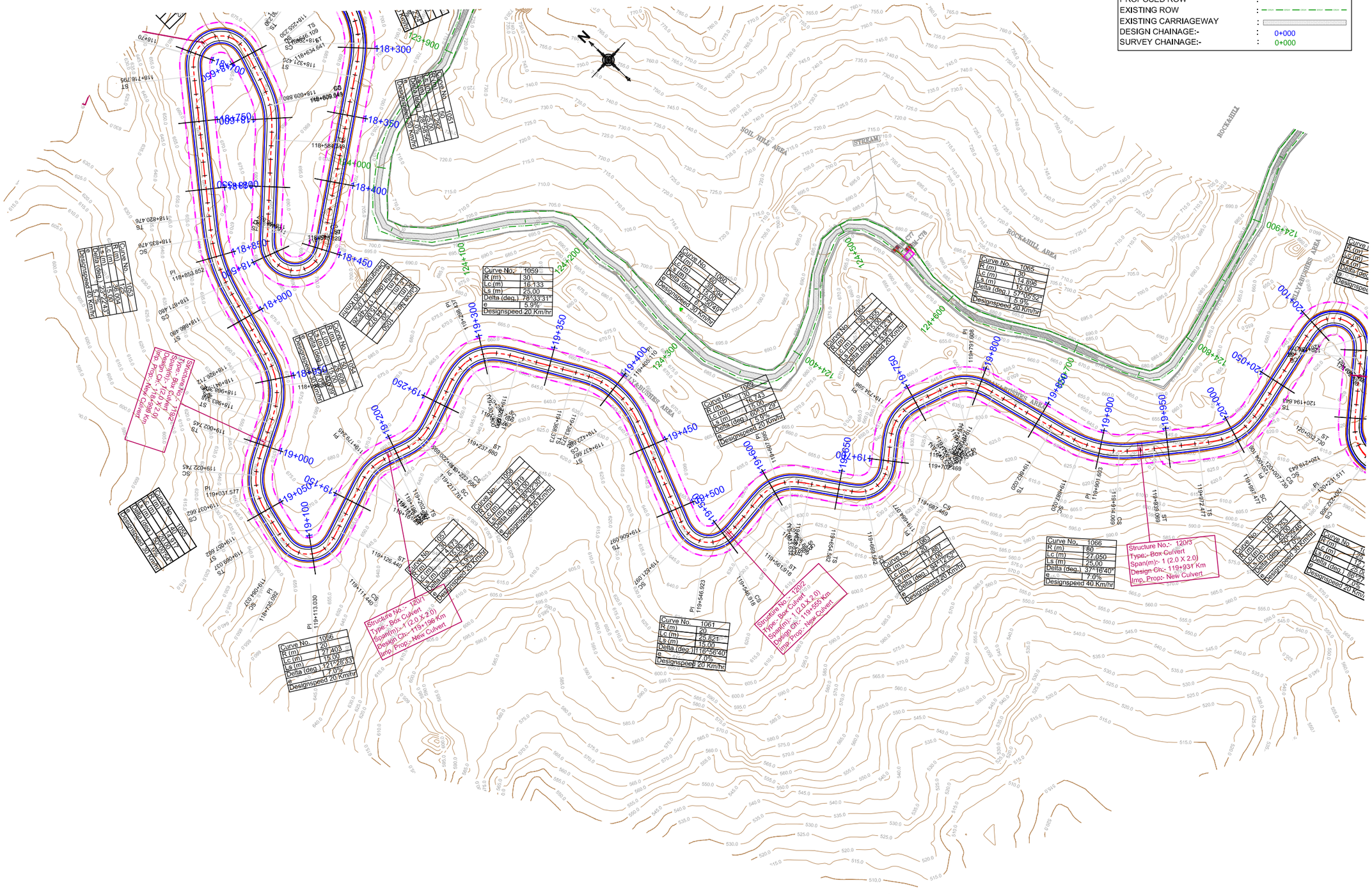
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

CHURACHANDPUR

TUIVAI

LEGEND : -

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



					Scale :- 1:2000	CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building,3rd Floor, 4 Parliament Street, New Delhi - 110001
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.	DATE: APRIL, 2020	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 PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)
REVISIONS						

PLAN

Km 119+000 to Km 120+000

SUBMISSION TYPE :

FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

CONSULTANT :

CE TESTING COMPANY PVT. LTD.

124-A, N.S.C. Bose Road

Kolkata - 700092

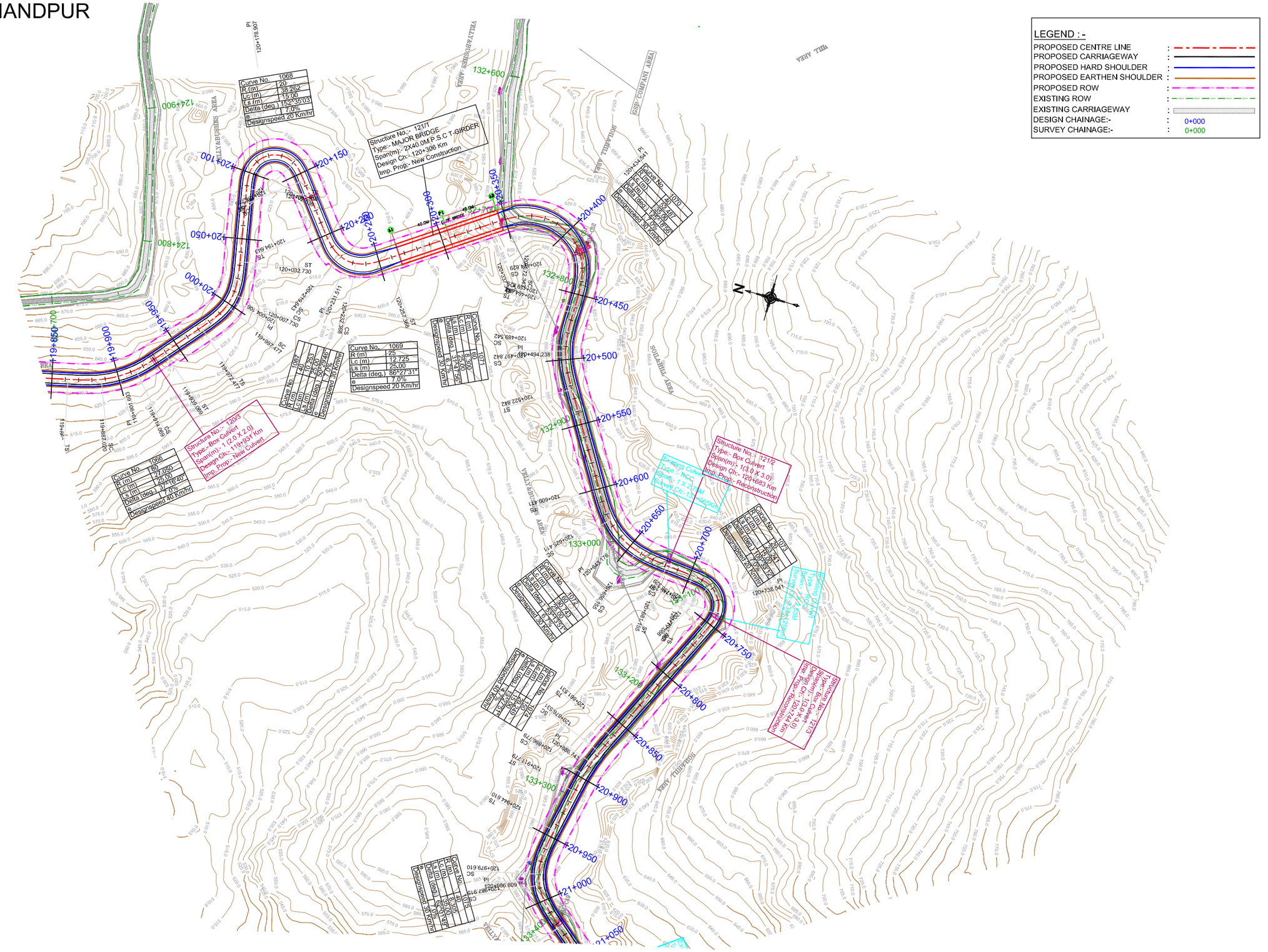
DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IIIC/PLAN			
REVISION MKD. - R0		SHEET NO. - 17	
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

670.00M
668.00M
666.00M
664.00M
662.00M
660.00M
658.00M
656.00M
654.00M
652.00M
650.00M
648.00M
646.00M
644.00M
642.00M
640.00M
638.00M
636.00M
634.00M
632.00M
630.00M
628.00M
626.00M
624.00M
622.00M
620.00M
618.00M
616.00M
Datum = 614.00M
Type:- Box Culvert
Span(m):- 1(2.0 X 2.0)
Prop.Chainage:- 118+999
FINISHED ROAD LINE
ALONG THE PROPOSED CL.
PVC 119+186
Elev 659.486
PVI 119+225
Elev 656.561
PVT 119+266
Elev 655.252
EXISTING GROUND LINE
ALONG THE PROPOSED CL.
L 493.26mt.
Slp -3.272%
PVC 119+759
Elev 639.123
PVI 119+834
Elev 636.669
PVT 119+909
Elev 632.124
L 273.490m
Slp -5.997%

| | | |

CHURACHANDPUR

TUIVAI



					Scale :- 1:2000	CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building,3rd Floor, 4 Parliament Street, New Delhi - 110001
					DATE: APRIL, 2020	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 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 120-+000 to Km 121+000

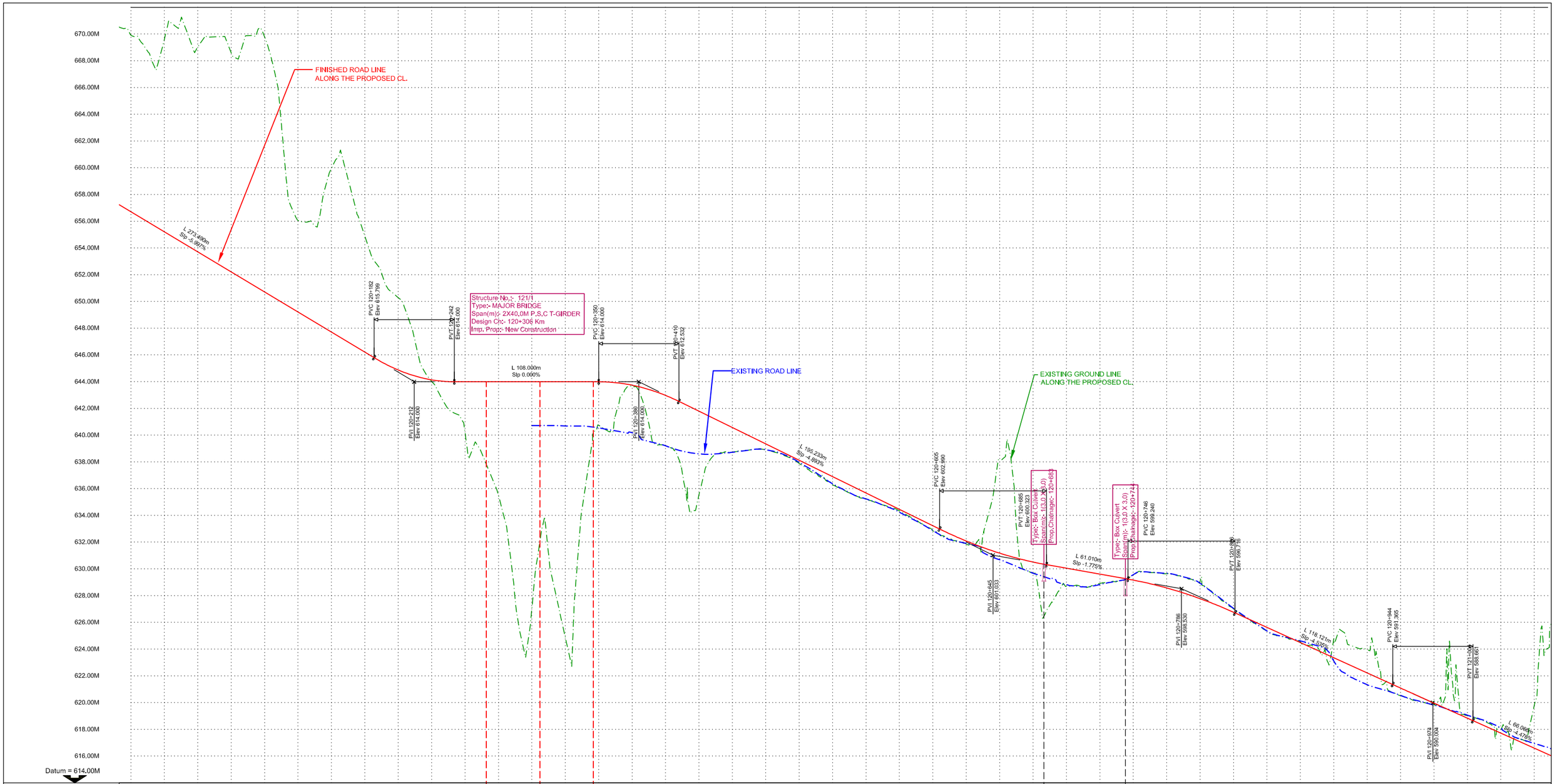
SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

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-IIIC/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 LEVEL. ALONG THE PROPOSED CL.	626.714 625.215 623.715 622.216 620.717 619.217 617.718 616.219 614.882 614.144 614.000 614.000 614.000 614.000 614.000 613.745 612.981 611.798 610.575 609.351 608.128 606.905 605.682 604.458 603.235 602.060 601.183 600.520 600.057 599.613 599.166 598.580 597.778 596.761 595.628 594.494 593.360 592.226 591.093 589.963 588.840 587.720 586.601
EXISTING GROUND LEVEL ALONG THE PROPOSED CL.	639.921 639.572 639.016 638.632 639.823 626.072 629.936 624.918 620.301 614.037 610.232 605.512 597.012 594.902 610.748 613.646 609.219 605.547 608.741 608.903 607.886 606.300 605.186 604.354 602.866 601.869 608.166 599.684 598.698 598.912 599.570 599.654 599.111 597.026 595.357 594.547 594.756 593.965 590.518 589.855 589.038 588.000 586.847
HORIZONTAL ALIGNMENT	L 10.25 R 40.00 · L 25.00 A 31.02 · L 15.00 A 17.32 · L 38.26 R 20.00 · L 15.00 A 17.32 · L 25.00 A 25.00 · L 12.72 R 25.00 · L 25.00 A 25.00 · L 35.00 A 37.42 · L 52.49 R 40.00 · L 35.00 A 37.42 · L 25.00 A 38.73 · L 8.30 R 60.00 · L 25.00 A 38.73 · L 25.00 A 38.73 · L 30.74 R 60.00 · L 25.00 A 38.73 · L 15.00 A 17.32 · L 23.24 R 20.00 · L 15.00 A 17.32 · L 15.00 A 47.43 · L 20.25 R 150.00 · L 15.00 A 47.43 · L 35.00 A 37.42 · L 8.31 R 40.00 · L 35.00 A 37.42
VERTICAL ALIGNMENT	L273.000 Slp-5.997% · L60.000 L1 30.000 L2 30.000 · L108.000 Slp0.000% · L60.000 L1 30.000 L2 30.000 · L195.000 Slp-4.893% · L80.000 L1 40.000 L2 40.000 · L61.000 Slp-1.775% · L80.000 L1 40.000 L2 40.000 · L118.000 Slp-4.535% · L60.000 L1 30.000 L2 30.000 · L66.000 Slp-4.478%
SUPERELEVATION (e %)	119+397.5 e 1.0% · 120+027.7 e 1.0% · 120+052.8 e 2.5% · 120+111.7 e 2.5% · 120+282.2 e 2.5% · 120+292.9 e 2.5% · 120+313.9 e 1.0% · 120+460.8 e 1.0% · 120+484.4 e 2.5% · 120+511.2 e 2.5% · 120+535.7 e 2.5% · 120+561.6 e 2.5% · 120+573.6 e 1.0% · 120+586.4 e 1.0% · 120+611.4 e 2.5% · 120+636.3 e 2.5% · 120+824.8 e 2.5% · 120+849.8 e 2.5% · 120+873.3 e 1.0% · 120+948.8 e 1.0% · 120+961.5 e 2.5% · 120+983.5 e 2.5% · 121+018.3 e 2.5% · 121+054.5 e 2.5% · 121+077.8 e 1.0% · 121+092.3 e 1.0% · 121+102.2 e 2.5% · 121+127.2 e 2.5% · 121+150.1 e 2.5% · 121+174.4 e 2.5% · 121+211.1 e 1.0% · 121+224.3 e 1.0% · 121+240.7 e 2.5% · 121+265.7 e 2.5% · 121+283.6 e 2.5% · 121+309.5 e 2.5% · 121+334.5 e 4.5% · 121+359.4 e 4.5% · 121+384.8 e 2.5% · 121+409.8 e 2.5% · 121+422.1 e 2.5% · 121+447.1 e 2.5% · 121+473.6 e 1.0% · 121+486.4 e 1.0% · 121+500.4 e 2.5% · 121+525.4 e 2.5%
CHAINAGE (KM)	120+000 120+025 120+050 120+075 120+100 120+125 120+150 120+175 120+200 120+225 120+250 120+275 120+300 120+325 120+350 120+375 120+400 120+425 120+450 120+475 120+500 120+525 120+550 120+575 120+600 120+625 120+650 120+675 120+700 120+725 120+750 120+775 120+800 120+825 120+850 120+875 120+900 120+925 120+950 120+975 121+000 121+025 121+050

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- VER- 1:200

DATE: APRIL, 2020

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 PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

PROFILE
Km 120+000 to Km 121+000

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

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 700 092 124-A, N.S.C. BOSE ROAD

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

REVISION MKD. - R0 | SHEET NO. - 18A

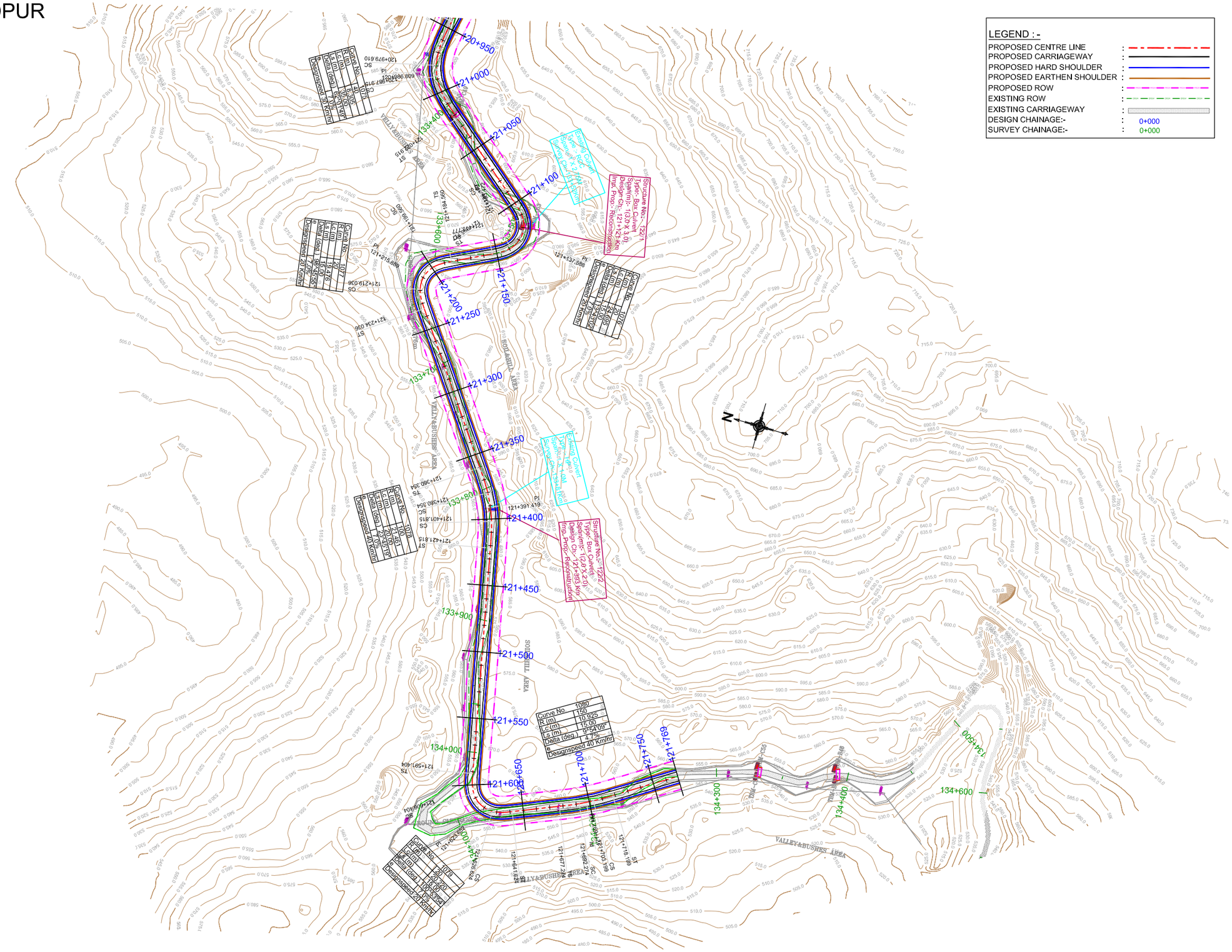
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

CHURACHANDPUR

TUIVAI

LEGEND : -

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



MKD.	DATE	DESCRIPTION	CHKD.	APPRD.	
REVISIONS					

Scale :- 1:2000

DATE: APRIL, 2020

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 PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

PLAN
Km 120-+000 to Km 121+769

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

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-IIIC/PLAN

REVISION MKD. - R0 | SHEET NO. - 19

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

606.00M
604.00M
602.00M
600.00M
598.00M
596.00M
594.00M
592.00M
590.00M
588.00M
586.00M
584.00M
582.00M
580.00M
578.00M
576.00M
574.00M
572.00M
570.00M
568.00M
566.00M
564.00M
562.00M
560.00M
558.00M
556.00M
554.00M
552.00M
Datum = 550.00M
PVT 121+000 Elev 588.661
L 66.066m Slp -4.478%
PVC 121+070 Elev 585.705
PVI 121+100 Elev 584.362
Type:- Box Culvert Span(m):- 1(3.0 X 3.0) Proj.Chainage:- 121+123
PVT 121+130 Elev 583.281
FINISHED ROAD LINE ALONG THE PROPOSED CL
EXISTING ROAD LINE
L 174.114m Slp -3.604%
PVC 121+304 Elev 577.010
PVI 121+336 Elev 574.831
PVT 121+369 Elev 575.369
Type:- Box Culvert Span(m):- 1(2.0 X 2.0) Proj.Chainage:- 121+383
L 135.147m Slp -4.660%
PVC 121+466 Elev 568.239
EXISTING GROUND LINE ALONG THE PROPOSED CL
PVT 121+579 Elev 563.581
PVI 121+509 Elev 566.375
L 158.385m Slp -6.985%
PVC 121+737 Elev 552.546
PVT 121+787 Elev 551.884
PVI 121+762 Elev 551.486
L 2.002m Slp -1.624%
PVT 121+769 Elev 550.712

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HORIZONTAL ALIGNMENT REPORT

HIP/CURVE NO.	HIP		DEFLECTION ANGLE			ELEMENT	CHAINAGE (m)	START		CHAINAGE (m)	END		LENGTH (m)	CHORD LENGTH (m)	BEARING (dd mm ss)	RADIUS (m)	HAND OF ARC	SUPERELEVATION (%)	DESIGN SPEED
	EASTING	NORTHING	DEG	MIN	SEC			EASTING	NORTHING		EASTING	NORTHING							
912	539154.905	2672848.499	48	15	06.10"	Arc	103578.594	539159.683	2672850.506	103588.858	539151.076	2672845.005		10.27		30	Left	5.9	20
						Transition	103588.858	539151.076	2672845.005	103603.858	539141.854	2672833.228		15					
						Straight	103603.858	539141.854	2672833.228	103615.964	539135.209	2672823.109	12.106		S 33^17'33.53" W				
						Transition	103615.964	539135.209	2672823.109	103630.964	539125.986	2672811.332		15					
913	539098.878	2672786.593	130	7	11.98"	Arc	103630.964	539125.986	2672811.332	103684.095	539080.024	2672818.081		53.13		30	Right	5.9	20
						Transition	103684.095	539080.024	2672818.081	103699.095	539074.576	2672832.011		15					
						Straight	103699.095	539074.576	2672832.011	103735.831	539064.089	2672867.219	36.736		N 16^35'14.50" W				
						Transition	103735.831	539064.089	2672867.219	103775.831	539047.798	2672903.440		40					
914	539040.046	2672912.842	73	13	43.40"	Arc	103775.831	539047.798	2672903.440	103799.735	539028.839	2672917.623		23.9		50	Left	7.0	40
						Transition	103799.735	539028.839	2672917.623	103839.735	538989.491	2672923.022		40					
						Straight	103839.735	538989.491	2672923.022	103906.091	538923.135	2672923.235	66.356		N 89^48'57.89" W				
						Transition	103906.091	538923.135	2672923.235	103946.091	538883.788	2672928.634		40					
915	538880.516	2672930.030	53	58	31.86"	Arc	103946.091	538883.788	2672928.634	103953.193	538877.474	2672931.875		7.1		50	Right	7.0	40
						Transition	103953.193	538877.474	2672931.875	103993.193	538850.151	2672960.698		40					
						Straight	103993.193	538850.151	2672960.698	104067.216	538806.808	2673020.705	74.022		N 35^50'26.03" W				
						Transition	104067.216	538806.808	2673020.705	104087.216	538794.569	2673036.511		20					
916	538791.072	2673040.454	17	29	34.99"	Arc	104087.216	538794.569	2673036.511	104097.747	538787.180	2673044.008		10.53		100	Left	7.0	40
						Transition	104097.747	538787.180	2673044.008	104117.747	538771.551	2673056.473		20					
						Straight	104117.747	538771.551	2673056.473	104207.285	538699.731	2673109.941	89.538		N 53^20'01.03" W				
						Transition	104207.285	538699.731	2673109.941	104222.285	538687.031	2673117.845		15					
917	538658.562	2673129.545	120	7	04.71"	Arc	104222.285	538687.031	2673117.845	104270.178	538647.595	2673100.785		47.89		30	Left	5.9	20
						Transition	104270.178	538647.595	2673100.785	104285.178	538644.659	2673086.118		15					
						Straight	104285.178	538644.659	2673086.118	104326.630	538639.932	2673044.937	41.452		S 6^32'54.27" W				
						Transition	104326.630	538639.932	2673044.937	104341.630	538636.995	2673030.269		15					
918	538623.719	2672995.451	130	58	30.63"	Arc	104341.630	538636.995	2673030.269	104395.209	538592.537	2673015.855		53.58		30	Right	5.9	20
						Transition	104395.209	538592.537	2673015.855	104410.209	538581.553	2673026.009		15					
						Straight	104410.209	538581.553	2673026.009	104507.741	538515.691	2673097.944	97.532		N 42^28'35.10" W				
						Transition	104507.741	538515.691	2673097.944	104522.741	538504.908	2673108.337		15					
919	538495.702	2673115.219	53	32	53.24"	Arc	104522.741	538504.908	2673108.337	104545.124	538484.248	2673116.164		22.38		40	Left	4.4	20
						Transition	104545.124	538484.248	2673116.164	104560.124	538469.285	2673115.526		15					
						Straight	104560.124	538469.285	2673115.526	104576.137	538453.361	2673113.845	16.013		S 83^58'31.66" W				
						Transition	104576.137	538453.361	2673113.845	104591.137	538438.457	2673114.139		15					
920	538432.223	2673115.863	78	48	45.87"	Arc	104591.137	538438.457	2673114.139	104603.648	538428.180	2673120.911		12.51		20	Right	7.0	20
						Transition	104603.648	538428.180	2673120.911	104618.648	538422.030	2673134.489		15					
						Straight	104618.648	538422.030	2673134.489	104711.860	538394.448	2673223.527	93.212		N 17^12'42.48" W				
						Transition	104711.860	538394.448	2673223.527	104726.860	538391.845	2673238.205		15					
921	538392.341	2673244.851	79	49	50.72"	Arc	104726.860	538391.845	2673238.205	104739.726	538396.725	2673249.870		12.87		20	Right	7.0	20
						Transition	104739.726	538396.725	2673249.870	104754.726	538409.005	2673258.321		15					
						Straight	104754.726	538409.005	2673258.321	104769.932	538422.507	2673265.314	15.206		N 62^37'08.24" E				
						Transition	104769.932	538422.507	2673265.314	104784.932	538435.171	2673273.275		15					
922	538447.277	2673284.063	85	25	52.95"	Arc	104784.932	538435.171	2673273.275	104814.664	538444.884	2673300.100		29.73		30	Left	5.9	20
						Transition	104814.664	538444.884	2673300.100	104829.664	538440.251	2673314.323		15					
						Straight	104829.664	538440.251	2673314.323	104955.810	538391.343	2673430.602	126.146		N 22^48'44.70" W				
923	538386.177	2673442.884	5	5	10.07"	Arc	104955.810	538391.343	2673430.602	104982.441	538379.942	2673454.660		26.63		300	Left	Normal Camber	40
						Straight	104982.441	538379.942	2673454.660	105013.742	538365.296	2673482.323	31.301		N 27^53'54.77" W				
						Transition	105013.742	538365.296	2673482.323	105038.742	538355.504	2673505.250		25					
924	538355.024	2673507.240	33	20	14.61"	Arc	105038.742	538355.504	2673505.250	105042.834	538354.708	2673509.263		4.09		50	Right	7.0	40
						Transition	105042.834	538354.708	2673509.263	105067.834	538354.998	2673534.192		25					
						Straight	105067.834	538354.998	2673534.192	105108.576	538358.859	2673574.750	40.742		N 5^26'19.84" E				
						Transition	105108.576	538358.859	2673574.750	105138.576	538356.743	2673604.343		30					
925	538354.763	2673608.961	76	18	41.89"	Arc	105138.576	538356.743	2673604.343	105148.533	538351.386	2673612.682		9.96		30	Left	7.0	30
						Transition	105148.533	538351.386	2673612.682	105178.533	538325.352	2673626.909		30					
						Straight	105178.533	538325.352	2673626.909	105189.398	538315.087	2673630.469	10.865		N 70^52'22.04" W				
						Transition	105189.398	538315.087	2673630.469	105214.398	538292.544	2673641.024		25					
926	538288.398	2673644.152	50	36	20.73"	Arc	105214.398	538292.544	2673641.024	105224.728	538285.188	2673648.235		10.33		40	Right	7.0	30
						Transition	105224.728	538285.188	2673648.235	105249.728	538274.187	2673670.564		25					
						Straight	105249.728	538274.187	2673670.564	105269.733	538267.257	2673689.330	20.005		N 20^16'01.32" W				
						Transition	105269.733	538267.257	2673689.330	105284.733	538261.484	2673703.163		15					
927	538260.493	2673705.071	18	25	40.30"	Arc	105284.733	538261.484	2673703.163	105289.030	538259.369	2673706.904		4.3		60	Left	6.7	30
						Transition	105289.030	538259.369	2673706.904	105304.030	538250.493	2673718.983		15					
						Straight	105304.030	538250.493	2673718.983	105305.928	538249.307	2673720.464	1.898		N 38^41'41.62" W				
						Transition	105305.928	538249.307	2673720.464	105320.928	538241.509	2673733.168		15					
928	538238.993	2673741.291	89	2	31.45"	Arc	105320.928	538241.509	2673733.168	105337.009	538243.098	2673748.739		16.08		20	Right	7.0	20
						Transition	105337.009	538243.098	2673748.739	105352.009	538253.301	2673759.607		15					
						Straight	105352.009	538253.301	2673759.607	105441.607	538322.284	2673816.782	89.598		N 50^20'49.83" E				
						Transition	105441.607	538322.284	2673816.782	105456.607	538333.196	2673827.040		15					
929	538344.392	2673840.572	68	53	45.19"	Arc	105456.607	538333.196	2673827.040	105489.705	538342.007	2673857.972		33.1		40	Left	7.0	30
						Transition	105489.705	538342.007	2673857.972	105504.705	538338.138	2673872.440		15					
						Straight	105504.705	538338.138	2673872.440	105512.203	538335.753	2673879.549	7.498		N 18^32'55.36" W				
						Transition	105512.203	538335.753	2673879.549	105527.203	538331.430	2673893.906		15					

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: April, 2020

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 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 - IIIC

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

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

REVISION MKD. - R0 | SHEET NO. - 01

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

HIP/CURVE NO.	HIP		DEFLECTION ANGLE			ELEMENT	CHAINAGE (m)	START		CHAINAGE (m)	END		LENGTH (m)	CHORD LENGTH (m)	BEARING (dd mm ss)	RADIUS (m)	HAND OF ARC	SUPERELEVATION (%)	DESIGN SPEED
	EASTING	NORTHING	DEG	MIN	SEC			EASTING	NORTHING		EASTING	NORTHING							
930	538329.857	2673900.625	20	36	10.08"	Arc	105527.203	538331.430	2673893.906	105540.970	538329.458	2673907.514		13.77		80	Right	5.0	30
						Transition	105540.970	538329.458	2673907.514	105555.970	538329.527	2673922.508		15					
						Straight	105555.970	538329.527	2673922.508	105571.182	538330.072	2673937.710	15.212		N 2^03'14.72" E				
						Transition	105571.182	538330.072	2673937.710	105586.182	538328.747	2673952.558		15					
931	538327.359	2673956.491	66	31	49.56"	Arc	105586.182	538328.747	2673952.558	105594.406	538324.516	2673959.541		8.22		20	Left	7.0	20
						Transition	105594.406	538324.516	2673959.541	105609.406	538311.968	2673967.590		15					
						Straight	105609.406	538311.968	2673967.590	105662.103	538264.413	2673990.296	52.698		N 64^28'34.84" W				
						Transition	105662.103	538264.413	2673990.296	105687.103	538243.187	2674003.297		25					
932	538241.065	2674005.305	44	9	50.26"	Arc	105687.103	538243.187	2674003.297	105692.936	538239.258	2674007.601		5.83		40	Right	7.0	30
						Transition	105692.936	538239.258	2674007.601	105717.936	538228.239	2674029.920		25					
						Straight	105717.936	538228.239	2674029.920	105731.925	538223.383	2674043.039	13.989		N 20^18'44.58" W				
933	538214.404	2674067.297	9	51	20.31"	Arc	105731.925	538223.383	2674043.039	105783.529	538201.405	2674089.659		51.6		300	Left	Normal Camber	40
						Straight	105783.529	538201.405	2674089.659	105811.250	538187.474	2674113.626	27.721		N 30^10'04.89" W				
934	538175.028	2674135.038	9	26	20.01"	Arc	105811.250	538187.474	2674113.626	105860.672	538159.238	2674154.120		49.42		300	Left	Normal Camber	40
						Straight	105860.672	538159.238	2674154.120	105875.772	538149.612	2674165.753	15.100		N 39^36'24.90" W				
935	538132.565	2674186.354	10	11	11.73"	Arc	105875.772	538149.612	2674165.753	105929.109	538119.431	2674209.644		53.34		300	Right	Normal Camber	40
						Straight	105929.109	538119.431	2674209.644	106007.614	538080.868	2674278.026	78.505		N 29^25'13.17" W				
						Transition	106007.614	538080.868	2674278.026	106027.614	538070.473	2674295.102		20					
936	538068.618	2674297.736	15	9	00.50"	Arc	106027.614	538070.473	2674295.102	106034.056	538066.598	2674300.246		6.44		100	Left	7.0	40
						Transition	106034.056	538066.598	2674300.246	106054.056	538053.050	2674314.947		20					
						Straight	106054.056	538053.050	2674314.947	106148.353	537986.874	2674382.123	94.297		N 44^34'13.67" W				
						Transition	106148.353	537986.874	2674382.123	106163.353	537976.172	2674392.631		15					
937	537962.611	2674405.086	19	43	32.34"	Arc	106163.353	537976.172	2674392.631	106199.995	537946.440	2674413.891		36.64		150	Left	4.7	40
						Transition	106199.995	537946.440	2674413.891	106214.995	537933.036	2674420.620		15					
						Straight	106214.995	537933.036	2674420.620	106333.108	537826.610	2674471.848	118.113		N 64^17'46.01" W				
						Transition	106333.108	537826.610	2674471.848	106348.108	537812.478	2674476.591		15					
938	537797.735	2674477.678	115	54	47.70"	Arc	106348.108	537812.478	2674476.591	106373.570	537792.371	2674463.902		25.46		20	Left	7.0	20
						Transition	106373.570	537792.371	2674463.902	106388.570	537790.568	2674449.105		15					
						Straight	106388.570	537790.568	2674449.105	106463.015	537790.840	2674374.660	74.445		S 0^12'33.71" E				
						Transition	106463.015	537790.840	2674374.660	106483.015	537790.247	2674354.678		20					
939	537789.983	2674351.942	14	36	29.13"	Arc	106483.015	537790.247	2674354.678	106488.511	537789.569	2674349.225		5.5		100	Right	7.0	40
						Transition	106488.511	537789.569	2674349.225	106508.511	537785.245	2674329.707		20					
						Straight	106508.511	537785.245	2674329.707	106592.885	537764.264	2674247.982	84.375		S 14^23'55.42" W				
						Transition	106592.885	537764.264	2674247.982	106612.885	537759.941	2674228.464		20					
940	537754.632	2674193.644	50	15	58.42"	Arc	106612.885	537759.941	2674228.464	106680.616	537772.317	2674163.183		67.73		100	Left	7.0	40
						Transition	106680.616	537772.317	2674163.183	106700.616	537783.483	2674146.602		20					
						Straight	106700.616	537783.483	2674146.602	106752.121	537813.660	2674104.864	51.504		S 35^52'03.00" E				
						Transition	106752.121	537813.660	2674104.864	106772.121	537824.827	2674088.282		20					
941	537831.242	2674077.232	26	1	19.71"	Arc	106772.121	537824.827	2674088.282	106797.538	537834.673	2674064.924		25.42		100	Right	7.0	40
						Transition	106797.538	537834.673	2674064.924	106817.538	537838.746	2674045.352		20					
						Straight	106817.538	537838.746	2674045.352	106876.447	537848.819	2673987.310	58.909		S 9^50'43.29" E				
						Transition	106876.447	537848.819	2673987.310	106876.447	537848.819	2673987.310							
942	537856.136	2673945.148	16	14	09.69"	Arc	106876.447	537848.819	2673987.310	106961.459	537851.373	2673902.621		85.01		300	Right	Normal Camber	40
						Straight	106961.459	537851.373	2673902.621	106982.353	537849.047	2673881.857	20.894		S 6^23'26.41" W				
						Transition	106982.353	537849.047	2673881.857	106997.353	537848.624	2673866.904		15					
943	537849.926	2673857.561	63	33	37.18"	Arc	106997.353	537848.624	2673866.904	107015.633	537856.342	2673850.644		18.28		30	Left	5.9	20
						Transition	107015.633	537856.342	2673850.644	107030.633	537868.193	2673841.517		15					
						Straight	107030.633	537868.193	2673841.517	107077.487	537907.563	2673816.115	46.854		S 57^10'10.77" E				
						Transition	107077.487	537907.563	2673816.115	107092.487	537919.414	2673806.987		15					
944	537925.196	2673800.753	60	17	43.55"	Arc	107092.487	537919.414	2673806.987	107109.058	537926.847	2673792.413		16.57		30	Right	5.9	20
						Transition	107109.058	537926.847	2673792.413	107124.058	537927.277	2673777.461		15					
						Straight	107124.058	537927.277	2673777.461	107134.732	537926.695	2673766.802	10.674		S 3^07'32.78" W				
						Transition	107134.732	537926.695	2673766.802	107149.732	537927.125	2673751.850		15					
945	537928.947	2673742.645	63	23	02.28"	Arc	107149.732	537927.125	2673751.850	107167.920	537935.689	2673736.120		18.19		30	Left	5.9	20
						Transition	107167.920	537935.689	2673736.120	107182.920	537948.015	2673727.644		15					
						Straight	107182.920	537948.015	2673727.644	107250.728	538006.890	2673694.005	67.808		S 60^15'29.50" E				
						Transition	107250.728	538006.890	2673694.005	107265.728	538019.216	2673685.530		15					
946	538026.287	2673678.686	64	58	10.71"	Arc	107265.728	538019.216	2673685.530	107284.746	538027.930	2673668.983		19.02		30	Right	5.9	20
						Transition	107284.746	538027.930	2673668.983	107299.746	538027.946	2673654.025		15					
						Straight	107299.746	538027.946	2673654.025	107309.425	538027.151	2673644.378	9.679		S 4^42'41.21" W				
947	538026.227	2673633.165	12	50	20.98"	Arc	107309.425	538027.151	2673644.378	107331.833	538027.817	2673622.027		22.41		100	Left	4.0	30
						Straight	107331.833	538027.817	2673622.027	107411.269	538039.048	2673543.389	79.436		S 8^07'39.77" E				
						Transition	107411.269	538039.048	2673543.389	107441.269	538041.298	2673513.527		30					
948	538039.995	2673491.131	56	13	24.26"	Arc	107441.269	538041.298	2673513.527	107484.865	538026.608	2673473.130		43.6		75	Right	7.0	40
						Transition	107484.865	538026.608	2673473.130	107514.865	538005.701	2673451.689		30					
						Straight	107514.865	538005.701	2673451.689	107535.170	537990.589	2673438.128	20.305		S 48^05'44.48" W				
						Transition	107535.170	537990.589	2673438.128	107565.170	537969.682	2673416.687		30					

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: April, 2020

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 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 - IIIC

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-IIIC/HAR

REVISION MKD. - R0 | SHEET NO. - 02

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

HIP/CURVE NO.	HIP		DEFLECTION ANGLE			ELEMENT	CHAINAGE (m)	START		CHAINAGE (m)	END		LENGTH (m)	CHORD LENGTH (m)	BEARING (dd mm ss)	RADIUS (m)	HAND OF ARC	SUPERELEVATION (%)	DESIGN SPEED
	EASTING	NORTHING	DEG	MIN	SEC			EASTING	NORTHING		EASTING	NORTHING							
949	537967.476	2673413.720	28	33	44.21"	Arc	107565.170	537969.682	2673416.687	107572.558	537965.572	2673410.551		7.39		75	Left	7.0	40
						Transition	107572.558	537965.572	2673410.551	107602.558	537953.702	2673383.057		30					
						Straight	107602.558	537953.702	2673383.057	107632.127	537943.816	2673355.190	29.569		S 19^32'00.27" W				
						Transition	107632.127	537943.816	2673355.190	107647.127	537940.004	2673340.725		15					
950	537939.182	2673331.700	62	15	55.41"	Arc	107647.127	537940.004	2673340.725	107664.729	537943.493	2673323.729		17.6		30	Left	5.9	20
						Transition	107664.729	537943.493	2673323.729	107679.729	537952.694	2673311.935		15					
						Straight	107679.729	537952.694	2673311.935	107681.279	537953.746	2673310.796	1.550		S 42^43'55.13" E				
						Transition	107681.279	537953.746	2673310.796	107696.279	537963.352	2673299.295		15					
951	537969.227	2673290.629	40	50	29.68"	Arc	107696.279	537963.352	2673299.295	107716.920	537971.132	2673280.335		20.64		50	Right	7.0	30
						Transition	107716.920	537971.132	2673280.335	107731.920	537972.374	2673265.401		15					
						Straight	107731.920	537972.374	2673265.401	107740.474	537972.656	2673256.852	8.554		S 1^53'25.45" E				
952	537972.990	2673246.761	9	14	07.52"	Arc	107740.474	537972.656	2673256.852	107760.623	537974.938	2673236.855		20.15		125	Left	3.2	30
						Straight	107760.623	537974.938	2673236.855	107771.995	537977.132	2673225.697	11.372		S 11^07'32.97" E				
953	537978.605	2673207.563	41	5	56.55"	Arc	107786.995	537978.787	2673210.831	107793.514	537977.722	2673204.412		6.52		30	Right	7.0	25
						Transition	107793.514	537977.722	2673204.412	107808.514	537971.353	2673190.877		15					
						Straight	107808.514	537971.353	2673190.877	107860.398	537945.432	2673145.932	51.884		S 29^58'23.58" W				
						Transition	107860.398	537945.432	2673145.932	107875.398	537938.491	2673132.647		15					
954	537933.466	2673120.700	38	42	06.94"	Arc	107875.398	537938.491	2673132.647	107900.926	537933.820	2673107.745		25.53		60	Left	6.7	30
						Transition	107900.926	537933.820	2673107.745	107915.926	537935.476	2673092.847		15					
						Straight	107915.926	537935.476	2673092.847	107926.459	537937.074	2673082.436	10.533		S 8^43'43.36" E				
						Transition	107926.459	537937.074	2673082.436	107941.459	537938.730	2673067.538		15					
955	537939.059	2673055.505	37	0	44.36"	Arc	107941.459	537938.730	2673067.538	107965.219	537934.722	2673044.276		23.76		60	Right	6.7	30
						Transition	107965.219	537934.722	2673044.276	107980.219	537928.175	2673030.792		15					
						Straight	107980.219	537928.175	2673030.792	107983.723	537926.514	2673027.706	3.504		S 28^17'01.00" W				
						Transition	107983.723	537926.514	2673027.706	108008.723	537912.506	2673007.130		25					
956	537911.187	2673005.864	41	2	43.98"	Arc	108008.723	537912.506	2673007.130	108012.378	537909.757	2673004.723		3.66		40	Right	7.0	30
						Transition	108012.378	537909.757	2673004.723	108037.378	537887.506	2672993.565		25					
						Straight	108037.378	537887.506	2672993.565	108089.349	537838.881	2672975.219	51.971		S 69^19'44.98" W				
						Transition	108089.349	537838.881	2672975.219	108104.349	537825.226	2672969.068		15					
957	537819.305	2672965.451	41	9	59.64"	Arc	108104.349	537825.226	2672969.068	108118.089	537814.948	2672960.052		13.74		40	Left	7.0	30
						Transition	108118.089	537814.948	2672960.052	108133.089	537807.069	2672947.316		15					
						Straight	108133.089	537807.069	2672947.316	108136.387	537805.512	2672944.408	3.298		S 28^09'45.34" W				
						Transition	108136.387	537805.512	2672944.408	108151.387	537797.633	2672931.671		15					
958	537792.958	2672925.879	42	34	05.52"	Arc	108151.387	537797.633	2672931.671	108166.105	537786.513	2672922.156		14.72		40	Right	7.0	30
						Transition	108166.105	537786.513	2672922.156	108181.105	537772.711	2672916.341		15					
						Straight	108181.105	537772.711	2672916.341	108190.957	537763.412	2672913.090	9.851		S 70^43'50.85" W				
						Transition	108190.957	537763.412	2672913.090	108205.957	537749.480	2672907.558		15					
959	537745.178	2672905.420	23	28	46.66"	Arc	108205.957	537749.480	2672907.558	108215.545	537741.271	2672902.624		9.59		60	Left	6.7	30
						Transition	108215.545	537741.271	2672902.624	108230.545	537729.850	2672892.916		15					
						Straight	108230.545	537729.850	2672892.916	108275.541	537696.807	2672862.374	44.996		S 47^15'04.19" W				
						Transition	108275.541	537696.807	2672862.374	108290.541	537685.921	2672852.055		15					
960	537671.857	2672838.042	15	38	07.28"	Arc	108290.541	537685.921	2672852.055	108330.119	537660.823	2672821.537		39.58		200	Left	3.6	40
						Transition	108330.119	537660.823	2672821.537	108345.119	537652.801	2672808.863		15					
						Straight	108345.119	537652.801	2672808.863	108422.434	537612.271	2672743.023	77.316		S 31^36'56.91" W				
						Transition	108422.434	537612.271	2672743.023	108457.434	537596.959	2672711.697		35					
961	537596.345	2672709.391	37	58	39.80"	Arc	108457.434	537596.959	2672711.697	108462.205	537595.916	2672707.043		4.77		60	Left	7.0	40
						Transition	108462.205	537595.916	2672707.043	108497.205	537596.400	2672672.179		35					
						Straight	108497.205	537596.400	2672672.179	108568.071	537604.253	2672601.748	70.867		S 6^21'42.88" E				
						Transition	108568.071	537604.253	2672601.748	108588.071	537603.814	2672581.895		20					
962	537601.760	2672574.989	77	59	26.33"	Arc	108588.071	537603.814	2672581.895	108602.101	537596.347	2672570.234		14.03		25	Right	7.0	20
						Transition	108602.101	537596.347	2672570.234	108622.101	537578.498	2672561.529		20					
						Straight	108622.101	537578.498	2672561.529	108625.099	537575.653	2672560.584	2.998		S 71^37'43.44" W				
963	537528.416	2672544.897	43	25	25.51"	Arc	108625.099	537575.653	2672560.584	108719.835	537483.325	2672565.973		94.74		125	Right	3.2	30
						Straight	108719.835	537483.325	2672565.973	108735.180	537469.424	2672572.471	15.345		N 64^56'51.05" W				
						Transition	108735.180	537469.424	2672572.471	108755.180	537450.815	2672579.702		20					
964	537445.892	2672580.892	34	29	08.69"	Arc	108755.180	537450.815	2672579.702	108765.275	537440.831	2672581.071		10.09		50	Left	7.0	30
						Transition	108765.275	537440.831	2672581.071	108785.275	537420.962	2672579.118		20					
						Straight	108785.275	537420.962	2672579.118	108821.272	537385.452	2672573.218	35.997		S 80^34'00.26" W				
						Transition	108821.272	537385.452	2672573.218	108841.272	537366.019	2672568.642		20					
965	537355.209	2672564.515	48	58	46.75"	Arc	108841.272	537366.019	2672568.642	108864.014	537347.310	2672556.059		22.74		50	Left	7.0	30
						Transition	108864.014	537347.310	2672556.059	108884.014	537335.743	2672539.786		20					
						Straight	108884.014	537335.743	2672539.786	108890.152	537332.529	2672534.558	6.137		S 31^35'13.51" W				
						Transition	108890.152	537332.529	2672534.558	108905.152	537324.280	2672522.037		15					
966	537318.441	2672514.276	24	35	12.52"	Arc	108905.152	537324.280	2672522.037	108924.481	537310.914	2672508.138		19.33		80	Right	5.0	30
						Transition	108924.481	537310.914	2672508.138	108939.481	537298.725	2672499.407		15					
						Straight	108939.481	537298.725	2672499.407	108943.923	537295.035	2672496.934	4.442		S 56^10'26.03" W				
						Transition	108943.923	537295.035	2672496.934	108963.923	537279.227	2672484.740		20					
967	537275.444	2672480.920	35	11	33.29"	Arc	108963.923	537279.227	2672484.740	108974.634	537272.560	2672476.383		10.71		50	Left	7.0	30
						Transition	108974.634	537272.560	2672476.383	108994.634	537264.186	2672458.259		20					
						Straight	108994.634	537264.186	2672458.259	109027.871	537252.285	2672427.226	33.237		S 20^58'52.74" W				
						Transition	109027.871	537252.285	2672427.226	109047.871	537246.394	2672408.151		20					

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.
REVISIONS				

Scale :- N.T.S

DATE: April, 2020

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 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 - IIIC

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-IIIC/HAR

REVISION MKD. - R0 | SHEET NO. - 03

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

HIP/CURVE NO.	HIP		DEFLECTION ANGLE			ELEMENT	CHAINAGE (m)	START		CHAINAGE (m)	END		LENGTH (m)	CHORD LENGTH (m)	BEARING (dd mm ss)	RADIUS (m)	HAND OF ARC	SUPERELEVATION (%)	DESIGN SPEED
	EASTING	NORTHING	DEG	MIN	SEC			EASTING	NORTHING		EASTING	NORTHING							
968	537245.364	2672402.013	37	6	32.47"	Arc	109047.871	537246.394	2672408.151	109060.255	537245.871	2672395.810		12.38		50	Left	7.0	30
						Transition	109060.255	537245.871	2672395.810	109080.255	537250.127	2672376.304		20					
						Straight	109080.255	537250.127	2672376.304	109134.699	537265.250	2672324.003	54.444		S 16^07'39.74" E				
						Transition	109134.699	537265.250	2672324.003	109149.699	537269.863	2672309.736		15					
969	537275.462	2672295.523	32	21	51.91"	Arc	109149.699	537269.863	2672309.736	109179.888	537285.904	2672284.372		30.19		80	Left	5.0	30
						Transition	109179.888	537285.904	2672284.372	109194.888	537296.816	2672274.089		15					
						Straight	109194.888	537296.816	2672274.089	109213.383	537310.667	2672261.832	18.495		S 48^29'31.65" E				
						Transition	109213.383	537310.667	2672261.832	109228.383	537320.513	2672250.640		15					
970	537326.272	2672239.339	107	44	07.60"	Arc	109228.383	537320.513	2672250.640	109250.990	537318.506	2672229.312		22.61		20	Right	7.0	20
						Transition	109250.990	537318.506	2672229.312	109265.990	537306.745	2672220.153		15					
						Straight	109265.990	537306.745	2672220.153	109293.579	537283.037	2672206.044	27.589		S 59^14'35.95" W				
						Transition	109293.579	537283.037	2672206.044	109308.579	537269.377	2672200.076		15					
971	537253.046	2672197.410	122	10	39.39"	Arc	109308.579	537269.377	2672200.076	109336.227	537247.369	2672212.953		27.65		20	Right	7.0	20
						Transition	109336.227	537247.369	2672212.953	109351.227	537245.880	2672227.785		15					
						Straight	109351.227	537245.880	2672227.785	109374.921	537246.468	2672251.471	23.694		N 1^25'15.34" E				
						Transition	109374.921	537246.468	2672251.471	109394.921	537245.633	2672271.418		20					
972	537243.830	2672281.600	46	17	16.49"	Arc	109394.921	537245.633	2672271.418	109415.314	537238.137	2672290.233		20.39		50	Left	7.0	30
						Transition	109415.314	537238.137	2672290.233	109435.314	537225.026	2672305.289		20					
						Straight	109435.314	537225.026	2672305.289	109534.529	537155.034	2672375.607	99.215		N 44^52'01.16" W				
						Transition	109534.529	537155.034	2672375.607	109554.529	537141.923	2672390.663		20					
973	537138.186	2672396.330	38	22	55.07"	Arc	109554.529	537141.923	2672390.663	109568.023	537136.094	2672402.788		13.5		50	Right	7.0	30
						Transition	109568.023	537136.094	2672402.788	109588.023	537132.523	2672422.431		20					
						Straight	109588.023	537132.523	2672422.431	109613.102	537129.691	2672447.349	25.078		N 6^29'06.09" W				
						Transition	109613.102	537129.691	2672447.349	109628.102	537128.531	2672462.296		15					
974	537128.492	2672468.596	22	33	47.01"	Arc	109628.102	537128.531	2672462.296	109640.668	537129.580	2672474.801		12.57		70	Right	5.7	30
						Transition	109640.668	537129.580	2672474.801	109655.668	537133.215	2672489.346		15					
						Straight	109655.668	537133.215	2672489.346	109703.990	537146.597	2672535.778	48.322		N 16^04'40.92" E				
975	537151.801	2672553.831	7	10	02.01"	Arc	109703.990	537146.597	2672535.778	109741.517	537159.216	2672571.094		37.53		300	Right	Normal Camber	40
						Straight	109741.517	537159.216	2672571.094	109798.263	537181.612	2672623.234	56.746		N 23^14'42.93" E				
976	537186.802	2672635.318	5	1	12.66"	Arc	109798.263	537181.612	2672623.234	109824.549	537193.030	2672646.901		26.29		300	Right	Normal Camber	40
						Straight	109824.549	537193.030	2672646.901	109856.757	537208.282	2672675.269	32.208		N 28^15'55.59" E				
						Transition	109856.757	537208.282	2672675.269	109876.757	537218.887	2672692.184		20					
977	537238.514	2672715.805	86	2	12.89"	Arc	109876.757	537218.887	2672692.184	109931.838	537268.457	2672708.978		55.08		50	Right	7.0	30
						Transition	109931.838	537268.457	2672708.978	109951.838	537287.159	2672701.992		20					
						Straight	109951.838	537287.159	2672701.992	109999.043	537330.181	2672682.565	47.204		S 65^41'51.52" E				
						Transition	109999.043	537330.181	2672682.565	110014.043	537344.424	2672678.169		15					
978	537366.587	2672677.079	138	54	45.61"	Arc	110014.043	537344.424	2672678.169	110047.532	537365.377	2672699.235		33.49		20	Left	7.0	20
						Transition	110047.532	537365.377	2672699.235	110062.532	537360.906	2672713.455		15					
						Straight	110062.532	537360.906	2672713.455	110110.327	537341.002	2672756.908	47.795		N 24^36'37.14" W				
979	537313.988	2672815.884	78	4	25.54"	Arc	110110.327	537341.002	2672756.908	110219.339	537366.108	2672854.502		109.01		80	Right	Normal Camber	20
						Straight	110219.339	537366.108	2672854.502	110234.069	537377.943	2672863.271	14.730		N 53^27'48.40" E				
						Transition	110234.069	537377.943	2672863.271	110249.069	537388.722	2672873.568		15					
980	537390.353	2672876.181	60	29	07.20"	Arc	110249.069	537388.722	2672873.568	110255.182	537391.123	2672879.165		6.11		20	Left	7.0	20
						Transition	110255.182	537391.123	2672879.165	110270.182	537391.157	2672894.071		15					
						Straight	110270.182	537391.157	2672894.071	110288.692	537388.894	2672912.442	18.510		N 7^01'18.80" W				
						Transition	110288.692	537388.894	2672912.442	110308.692	537387.778	2672932.376		20					
981	537388.428	2672940.748	41	59	10.16"	Arc	110308.692	537387.778	2672932.376	110325.332	537391.777	2672948.449		16.64		50	Right	7.0	30
						Transition	110325.332	537391.777	2672948.449	110345.332	537402.103	2672965.535		20					
						Straight	110345.332	537402.103	2672965.535	110376.723	537420.092	2672991.261	31.391		N 34^57'51.36" E				
						Transition	110376.723	537420.092	2672991.261	110396.723	537430.996	2673008.016		20					
982	537434.175	2673013.695	18	54	22.96"	Arc	110396.723	537430.996	2673008.016	110409.721	537436.590	2673019.739		13		100	Left	7.0	40
						Transition	110409.721	537436.590	2673019.739	110429.721	537442.757	2673038.755		20					
						Straight	110429.721	537442.757	2673038.755	110432.627	537443.561	2673041.547	2.906		N 16^03'28.41" E				
						Transition	110432.627	537443.561	2673041.547	110452.627	537449.728	2673060.563		20					
983	537451.625	2673065.309	17	18	40.35"	Arc	110452.627	537449.728	2673060.563	110462.840	537453.996	2673069.837		10.21		100	Right	7.0	40
						Transition	110462.840	537453.996	2673069.837	110482.840	537464.429	2673086.890		20					
						Straight	110482.840	537464.429	2673086.890	110553.674	537503.390	2673146.047	70.834		N 33^22'08.76" E				
994	536455.306	2672795.241	54	24	14.01"	Arc	111802.543	536493.076	2672784.256	111877.496	536435.142	2672829.015		74.95		100	Right	7.0	40
						Transition	111877.496	536435.142	2672829.015	111897.496	536426.061	2672846.825		20					
						Straight	111897.496	536426.061	2672846.825	111916.714	536417.906	2672864.227	19.218		N 25^06'29.89" W				
						Transition	111916.714	536417.906	2672864.227	111931.714	536409.949	2672876.832		15					
995	536400.245	2672886.010	110	26	41.19"	Arc	111931.714	536409.949	2672876.832	111955.266	536388.050	2672880.563		23.55		20	Left	7.0	20
						Transition	111955.266	536388.050	2672880.563	111970.266	536376.367	2672871.304		15					
						Straight	111970.266	536376.367	2672871.304	112031.548	536333.455	2672827.556	61.281		S 44^26'48.93" W				
						Transition	112031.548	536333.455	2672827.556	112056.548	536314.578	2672811.272		25					
996	536310.475	2672808.784	39	36	40.92"	Arc	112056.548	536314.578	2672811.272	112066.115	536305.973	2672807.122		9.57		50	Right	7.0	30
						Transition	112066.115	536305.973	2672807.122	112091.115	536281.477	2672802.487		25					
						Straight	112091.115	536281.477	2672802.487	112136.915	536235.923	2672797.746	45.800		S 84^03'29.84" W				
						Transition	112136.915	536235.923	2672797.746	112161.915	536211.031	2672797.756		25					

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: April, 2020

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 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 - IIIC

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-IIIC/HAR

REVISION MKD. - R0 | SHEET NO. - 04

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

HIP/CURVE NO.	HIP		DEFLECTION ANGLE			ELEMENT	CHAINAGE (m)	START		CHAINAGE (m)	END		LENGTH (m)	CHORD LENGTH (m)	BEARING (dd mm ss)	RADIUS (m)	HAND OF ARC	SUPERELEVATION (%)	DESIGN SPEED
	EASTING	NORTHING	DEG	MIN	SEC			EASTING	NORTHING		EASTING	NORTHING							
997	536191.327	2672801.930	89	15	47.32"	Arc	112161.915	536211.031	2672797.756	112199.233	536182.948	2672820.246		37.32		40	Right	7.0	30
						Transition	112199.233	536182.948	2672820.246	112224.233	536177.501	2672844.534		25					
						Straight	112224.233	536177.501	2672844.534	112297.739	536168.952	2672917.542	73.506		N 6^40'42.83" W				
						Transition	112297.739	536168.952	2672917.542	112312.739	536165.388	2672932.016		15					
998	536156.350	2672948.898	130	28	54.25"	Arc	112312.739	536165.388	2672932.016	112343.286	536139.091	2672940.601		30.55		20	Left	7.0	20
						Transition	112343.286	536139.091	2672940.601	112358.286	536127.673	2672931.018		15					
						Straight	112358.286	536127.673	2672931.018	112410.160	536092.402	2672892.982	51.874		S 42^50'22.92" W				
						Transition	112410.160	536092.402	2672892.982	112425.160	536082.022	2672882.155		15					
999	536077.178	2672877.430	10	53	44.35"	Arc	112425.160	536082.022	2672882.155	112438.684	536071.929	2672873.159		13.53		150	Right	4.7	40
						Transition	112438.684	536071.929	2672873.159	112453.684	536059.986	2672864.087		15					
						Straight	112453.684	536059.986	2672864.087	112533.613	535995.540	2672816.808	79.928		S 53^44'07.27" W				
						Transition	112533.613	535995.540	2672816.808	112548.613	535983.596	2672807.736		15					
1000	535971.731	2672798.084	17	22	27.00"	Arc	112548.613	535983.596	2672807.736	112579.098	535962.059	2672786.235		30.49		150	Left	4.7	40
						Transition	112579.098	535962.059	2672786.235	112594.098	535952.967	2672774.307		15					
						Straight	112594.098	535952.967	2672774.307	112685.982	535898.491	2672700.313	91.884		S 36^21'40.26" W				
						Transition	112685.982	535898.491	2672700.313	112710.982	535885.896	2672678.843		25					
1001	535873.817	2672642.651	123	6	15.81"	Arc	112710.982	535885.896	2672678.843	112771.925	535909.399	2672628.878		60.94		40	Left	7.0	30
						Transition	112771.925	535909.399	2672628.878	112796.925	535933.969	2672624.889		25					
						Straight	112796.925	535933.969	2672624.889	112811.086	535948.107	2672624.085	14.162		S 86^44'35.54" E				
						Transition	112811.086	535948.107	2672624.085	112826.086	535963.043	2672622.766		15					
1002	536062.047	2672607.743	113	29	59.81"	Arc	112826.086	535963.043	2672622.766	112969.562	536025.534	2672514.500		143.48		80	Right	5.0	30
						Transition	112969.562	536025.534	2672514.500	112984.562	536019.205	2672500.907		15					
						Straight	112984.562	536019.205	2672500.907	113087.053	535973.063	2672409.390	102.491		S 26^45'24.27" W				
						Transition	113087.053	535973.063	2672409.390	113112.053	535965.064	2672385.907		25					
1003	535964.716	2672378.996	73	43	26.97"	Arc	113112.053	535965.064	2672385.907	113125.655	535967.430	2672372.631		13.6		30	Left	7.0	30
						Transition	113125.655	535967.430	2672372.631	113150.655	535983.049	2672353.358		25					
						Straight	113150.655	535983.049	2672353.358	113153.966	535985.469	2672351.098	3.311		S 46^58'02.70" E				
						Transition	113153.966	535985.469	2672351.098	113178.966	536001.801	2672332.313		25					
1004	536002.198	2672331.598	38	9	08.45"	Arc	113178.966	536001.801	2672332.313	113180.601	536002.566	2672330.868		1.64		40	Right	7.0	30
						Transition	113180.601	536002.566	2672330.868	113205.601	536008.916	2672306.800		25					
						Straight	113205.601	536008.916	2672306.800	113221.320	536011.324	2672291.266	15.719		S 8^48'54.25" E				
						Transition	113221.320	536011.324	2672291.266	113236.320	536011.757	2672276.366		15					
1005	536010.169	2672269.305	82	45	25.76"	Arc	113236.320	536011.757	2672276.366	113250.208	536004.431	2672264.895		13.89		20	Right	7.0	20
						Transition	113250.208	536004.431	2672264.895	113265.208	535990.731	2672259.020		15					
						Straight	113265.208	535990.731	2672259.020	113286.776	535970.005	2672253.055	21.568		S 73^56'31.51" W				
						Transition	113286.776	535970.005	2672253.055	113301.776	535956.305	2672247.180		15					
1006	535948.893	2672241.484	93	4	13.78"	Arc	113301.776	535956.305	2672247.180	113319.264	535948.509	2672232.144		17.49		20	Left	7.0	20
						Transition	113319.264	535948.509	2672232.144	113334.264	535951.602	2672217.562		15					
						Straight	113334.264	535951.602	2672217.562	113351.087	535957.114	2672201.669	16.822		S 19^07'42.26" E				
						Transition	113351.087	535957.114	2672201.669	113376.087	535964.058	2672177.681		25					
1007	535966.173	2672165.901	34	55	16.54"	Arc	113376.087	535964.058	2672177.681	113399.846	535964.747	2672154.019		23.76		80	Right	7.0	40
						Transition	113399.846	535964.747	2672154.019	113424.846	535959.211	2672129.667		25					
						Straight	113424.846	535959.211	2672129.667	113482.141	535943.617	2672074.535	57.295		S 15^47'34.27" W				
						Transition	113482.141	535943.617	2672074.535	113497.141	535939.088	2672060.242		15					
1008	535937.553	2672056.278	16	49	31.77"	Arc	113497.141	535939.088	2672060.242	113505.633	535935.607	2672052.499		8.49		80	Right	7.0	40
						Transition	113505.633	535935.607	2672052.499	113520.633	535927.923	2672039.624		15					
						Straight	113520.633	535927.923	2672039.624	113562.184	535905.526	2672004.627	41.550		S 32^37'06.04" W				
1009	535900.957	2671997.487	3	14	12.68"	Arc	113562.184	535905.526	2672004.627	113579.132	535896.798	2671990.101		16.95		300	Left	Normal Camber	40
						Straight	113579.132	535896.798	2671990.101	113643.528	535865.204	2671933.988	64.396		S 29^22'53.36" W				
1010	535857.076	2671919.551	6	19	19.55"	Arc	113643.528	535865.204	2671933.988	113676.630	535847.407	2671906.097		33.1		300	Right	Normal Camber	40
						Straight	113676.630	535847.407	2671906.097	113743.131	535808.597	2671852.096	66.500		S 35^42'12.91" W				
						Transition	113743.131	535808.597	2671852.096	113758.131	535798.459	2671841.169		15					
1011	535768.875	2671822.096	163	45	39.58"	Arc	113758.131	535798.459	2671841.169	113800.294	535767.634	2671857.273		42.16		20	Right	7.0	20
						Transition	113800.294	535767.634	2671857.273	113815.294	535770.812	2671871.836		15					
						Straight	113815.294	535770.812	2671871.836	113867.384	535788.170	2671920.949	52.090		N 19^27'52.49" E				
1012	535792.296	2671932.624	4	43	37.43"	Arc	113867.384	535788.170	2671920.949	113892.135	535795.446	2671944.599		24.75		300	Left	Normal Camber	40
						Straight	113892.135	535795.446	2671944.599	113959.530	535812.591	2672009.777	67.395		N 14^44'15.06" E				
1013	535816.052	2672022.935	5	11	36.02"	Arc	113959.530	535812.591	2672009.777	113986.722	535820.690	2672035.725		27.19		300	Right	Normal Camber	40
						Straight	113986.722	535820.690	2672035.725	114047.766	535841.499	2672093.113	61.044		N 19^55'51.08" E				
1014'	535850.049	2672116.694	9	33	32.68"	Arc	114047.766	535841.499	2672093.113	114097.817	535854.565	2672141.368		50.05		300	Left	Normal Camber	40
						Straight	114097.817	535854.565	2672141.368	114123.692	535859.224	2672166.820	25.875		N 10^22'18.40" E				
						Transition	114123.692	535859.224	2672166.820	114138.692	535861.678	2672181.616		15					
1015	535863.867	2672198.233	18	28	48.71"	Arc	114138.692	535861.678	2672181.616	114172.073	535862.336	2672214.922		33.38		150	Left	4.7	40
						Transition	114172.073	535862.336	2672214.922	114187.073	535860.468	2672229.804		15					
						Straight	114187.073	535860.468	2672229.804	114247.469	535851.949	2672289.596	60.396		N 8^06'30.31" W				
						Transition	114247.469	535851.949	2672289.596	114262.469	535850.081	2672304.478		15					

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: April, 2020

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 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 - IIIC

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-IIIC/HAR			
REVISION MKD. - R0		SHEET NO. - 05	
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

HIP/CURVE NO.	HIP		DEFLECTION ANGLE			ELEMENT	CHAINAGE (m)	START		CHAINAGE (m)	END		LENGTH (m)	CHORD LENGTH (m)	BEARING (dd mm ss)	RADIUS (m)	HAND OF ARC	SUPERELEVATION (%)	DESIGN SPEED
	EASTING	NORTHING	DEG	MIN	SEC			EASTING	NORTHING		EASTING	NORTHING							
1016	535849.418	2672311.701	11	15	58.88"	Arc	114262.469	535850.081	2672304.478	114276.965	535849.456	2672318.954		14.5		150	Right	4.7	40
						Transition	114276.965	535849.456	2672318.954	114291.965	535850.032	2672333.941		15					
						Straight	114291.965	535850.032	2672333.941	114319.201	535851.533	2672361.136	27.237		N 3^09'28.57" E				
						Transition	114319.201	535851.533	2672361.136	114344.201	535850.830	2672386.057		25					
1017	535850.211	2672389.194	35	57	55.98"	Arc	114344.201	535850.830	2672386.057	114350.587	535849.197	2672392.226		6.39		50	Left	7.0	40
						Transition	114350.587	535849.197	2672392.226	114375.587	535837.480	2672414.231		25					
						Straight	114375.587	535837.480	2672414.231	114418.849	535814.040	2672450.593	43.262		N 32^48'27.40" W				
						Transition	114418.849	535814.040	2672450.593	114433.849	535806.727	2672463.663		15					
1018	535804.056	2672470.251	41	38	33.12"	Arc	114433.849	535806.727	2672463.663	114447.921	535803.819	2672477.357		14.07		40	Right	4.4	20
						Transition	114447.921	535803.819	2672477.357	114462.921	535805.191	2672492.270		15					
						Straight	114462.921	535805.191	2672492.270	114472.095	535806.600	2672501.336	9.174		N 8^50'05.71" E				
						Transition	114472.095	535806.600	2672501.336	114487.095	535807.660	2672516.256		15					
1019	535806.883	2672524.339	58	56	10.65"	Arc	114487.095	535807.660	2672516.256	114502.954	535802.136	2672530.926		15.86		30	Left	5.9	20
						Transition	114502.954	535802.136	2672530.926	114517.954	535791.498	2672541.442		15					
						Straight	114517.954	535791.498	2672541.442	114663.274	535680.011	2672634.655	145.320		N 50^06'04.93" W				
						Transition	114663.274	535680.011	2672634.655	114678.274	535667.474	2672642.718		15					
1020	535620.552	2672658.339	178	56	00.52"	Arc	114678.274	535667.474	2672642.718	114725.734	535643.424	2672614.492		47.46		20	Left	7.0	20
						Transition	114725.734	535643.424	2672614.492	114740.734	535653.376	2672603.394		15					
						Straight	114740.734	535653.376	2672603.394	114822.966	535715.470	2672549.482	82.232		S 49^02'05.45" E				
						Transition	114822.966	535715.470	2672549.482	114837.966	535726.144	2672538.977		15					
1021	535732.434	2672531.010	49	57	50.23"	Arc	114837.966	535726.144	2672538.977	114857.847	535734.164	2672521.008		19.88		40	Right	4.4	20
						Transition	114857.847	535734.164	2672521.008	114872.847	535734.857	2672506.047		15					
						Straight	114872.847	535734.857	2672506.047	115027.771	535732.344	2672351.144	154.924		S 0^55'44.79" W				
						Transition	115027.771	535732.344	2672351.144	115047.771	535730.363	2672331.298		20					
1022	535724.922	2672311.344	83	19	54.44"	Arc	115047.771	535730.363	2672331.298	115085.948	535705.494	2672304.249		38.18		40	Right	7.0	30
						Transition	115085.948	535705.494	2672304.249	115105.948	535685.885	2672300.610		20					
						Straight	115105.948	535685.885	2672300.610	115149.866	535642.186	2672296.218	43.918		S 84^15'39.23" W				
						Transition	115149.866	535642.186	2672296.218	115169.866	535622.577	2672292.580		20					
1023	535613.298	2672289.191	56	23	27.94"	Arc	115169.866	535622.577	2672292.580	115189.234	535606.664	2672281.873		19.37		40	Left	7.0	30
						Transition	115189.234	535606.664	2672281.873	115209.234	535595.906	2672265.079		20					
						Straight	115209.234	535595.906	2672265.079	115334.977	535537.126	2672153.921	125.742		S 27^52'11.29" W				
1024	535526.437	2672133.708	5	14	11.48"	Arc	115334.977	535537.126	2672153.921	115380.674	535517.638	2672112.605		45.7		500	Left	Normal Camber	40
						Straight	115380.674	535517.638	2672112.605	115433.205	535497.423	2672064.120	52.531		S 22^37'59.81" W				
						Transition	115433.205	535497.423	2672064.120	115458.205	535486.754	2672041.534		25					
1025	535477.971	2672026.677	37	37	36.67"	Arc	115458.205	535486.754	2672041.534	115492.309	535464.315	2672016.123		34.1		90	Right	7.0	40
						Transition	115492.309	535464.315	2672016.123	115517.309	535443.223	2672002.742		25					
						Straight	115517.309	535443.223	2672002.742	115538.469	535424.850	2671992.245	21.160		S 60^15'36.48" W				
						Transition	115538.469	535424.850	2671992.245	115553.469	535411.967	2671984.566		15					
1026	535367.153	2671955.549	49	31	13.22"	Arc	115553.469	535411.967	2671984.566	115655.148	535354.307	2671903.730		101.68		135	Left	5.3	40
						Transition	115655.148	535354.307	2671903.730	115670.148	535351.240	2671889.049		15					
						Straight	115670.148	535351.240	2671889.049	115781.344	535330.519	2671779.800	111.196		S 10^44'23.26" W				
						Transition	115781.344	535330.519	2671779.800	115806.344	535327.149	2671755.056		25					
1027	535326.901	2671747.132	29	13	23.29"	Arc	115806.344	535327.149	2671755.056	115822.147	535328.214	2671739.314		15.8		80	Left	7.0	40
						Transition	115822.147	535328.214	2671739.314	115847.147	535334.888	2671715.250		25					
						Straight	115847.147	535334.888	2671715.250	115862.892	535339.879	2671700.317	15.745		S 18^29'00.03" E				
						Transition	115862.892	535339.879	2671700.317	115897.892	535347.674	2671666.331		35					
1028	535347.683	2671666.023	34	0	40.20"	Arc	115897.892	535347.674	2671666.331	115898.509	535347.690	2671665.715		0.62		60	Right	7.0	40
						Transition	115898.509	535347.690	2671665.715	115933.509	535341.658	2671631.373		35					
						Straight	115933.509	535341.658	2671631.373	115952.443	535336.589	2671613.129	18.935		S 15^31'40.18" W				
						Transition	115952.443	535336.589	2671613.129	115987.443	535324.040	2671580.598		35					
1029	535320.362	2671574.767	46	31	56.86"	Arc	115987.443	535324.040	2671580.598	116001.172	535315.457	2671569.921		13.73		60	Right	7.0	40
						Transition	116001.172	535315.457	2671569.921	116036.172	535286.384	2671550.673		35					
						Straight	116036.172	535286.384	2671550.673	116041.322	535281.834	2671548.261	5.150		S 62^03'37.03" W				
						Transition	116041.322	535281.834	2671548.261	116061.322	535264.613	2671538.122		20					
1030	535242.167	2671522.065	55	41	02.73"	Arc	116061.322	535264.613	2671538.122	116114.212	535235.483	2671495.288		52.89		75	Left	7.0	40
						Transition	116114.212	535235.483	2671495.288	116134.212	535232.383	2671475.545		20					
						Straight	116134.212	535232.383	2671475.545	116152.109	535230.396	2671457.759	17.897		S 6^22'34.30" W				
						Transition	116152.109	535230.396	2671457.759	116172.109	535227.296	2671438.016		20					
1031	535224.089	2671425.169	35	18	14.54"	Arc	116172.109	535227.296	2671438.016	116198.322	535216.677	2671414.197		26.21		75	Right	7.0	40
						Transition	116198.322	535216.677	2671414.197	116218.322	535204.064	2671398.695		20					
						Straight	116218.322	535204.064	2671398.695	116223.574	535200.572	2671394.773	5.252		S 41^40'48.84" W				
						Transition	116223.574	535200.572	2671394.773	116248.574	535184.959	2671375.282		25					
1032	535180.988	2671369.104	28	23	43.34"	Arc	116248.574	535184.959	2671375.282	116263.221	535178.209	2671362.306		14.65		80	Left	7.0	40
						Transition	116263.221	535178.209	2671362.306	116288.221	535171.213	2671338.333		25					
						Straight	116288.221	535171.213	2671338.333	116342.071	535158.838	2671285.924	53.850		S 13^17'05.50" W				
						Transition	116342.071	535158.838	2671285.924	116382.071	535144.661	2671248.825		40					
1033	535131.700	2671231.117	93	13	44.90"	Arc	116382.071	535144.661	2671248.825	116423.429	535109.892	2671228.669		41.36		50	Right	7.0	40
						Transition	116423.429	535109.892	2671228.669	116463.429	535070.652	2671234.803		40					
						Straight	116463.429	535070.652	2671234.803	116504.935	535030.858	2671246.602	41.506		N 73^29'09.60" W				
						Transition	116504.935	535030.858	2671246.602	116519.935	535016.397	2671250.576		15					

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: April, 2020

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 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 - IIIC

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

HIP/CURVE NO.	HIP		DEFLECTION ANGLE			ELEMENT	CHAINAGE (m)	START		CHAINAGE (m)	END		LENGTH (m)	CHORD LENGTH (m)	BEARING (dd mm ss)	RADIUS (m)	HAND OF ARC	SUPERELEVATION (%)	DESIGN SPEED
	EASTING	NORTHING	DEG	MIN	SEC			EASTING	NORTHING		EASTING	NORTHING							
1034	535000.461	2671254.278	21	47	17.85"	Arc	116519.935	535016.397	2671250.576	116552.470	534984.110	2671253.753		32.54		125	Left	5.7	40
						Transition	116552.470	534984.110	2671253.753	116567.470	534969.151	2671252.674		15					
						Straight	116567.470	534969.151	2671252.674	116732.312	534805.007	2671237.521	164.842		S 84^43'32.55" W				
						Transition	116732.312	534805.007	2671237.521	116757.312	534780.293	2671233.934		25					
1035	534762.199	2671229.346	44	10	22.38"	Arc	116757.312	534780.293	2671233.934	116793.989	534748.003	2671217.225		36.68		80	Left	7.0	40
						Transition	116793.989	534748.003	2671217.225	116818.989	534730.802	2671199.121		25					
						Straight	116818.989	534730.802	2671199.121	116877.544	534692.732	2671154.630	58.555		S 40^33'10.17" W				
						Transition	116877.544	534692.732	2671154.630	116892.544	534683.211	2671143.042		15					
1036	534678.947	2671137.407	13	20	48.65"	Arc	116892.544	534683.211	2671143.042	116906.663	534675.345	2671131.327		14.12		125	Left	5.7	40
						Transition	116906.663	534675.345	2671131.327	116921.663	534668.223	2671118.129		15					
						Straight	116921.663	534668.223	2671118.129	117011.849	534626.991	2671037.920	90.186		S 27^12'21.52" W				
						Transition	117011.849	534626.991	2671037.920	117036.849	534616.745	2671015.146		25					
1037	534613.650	2671005.763	31	59	08.50"	Arc	117036.849	534616.745	2671015.146	117056.509	534612.932	2670995.909		19.66		80	Left	7.0	40
						Transition	117056.509	534612.932	2670995.909	117081.509	534613.714	2670970.949		25					
						Straight	117081.509	534613.714	2670970.949	117090.543	534614.467	2670961.946	9.033		S 4^46'46.98" E				
						Transition	117090.543	534614.467	2670961.946	117115.543	534614.470	2670937.016		25					
1038	534611.541	2670919.593	67	34	10.30"	Arc	117115.543	534614.470	2670937.016	117149.508	534598.316	2670907.878		33.97		50	Right	7.0	40
						Transition	117149.508	534598.316	2670907.878	117174.508	534577.169	2670894.674		25					
						Straight	117174.508	534577.169	2670894.674	117244.182	534515.206	2670862.815	69.673		S 62^47'23.32" W				
						Transition	117244.182	534515.206	2670862.815	117269.182	534492.487	2670852.434		25					
1039	534474.345	2670846.097	40	1	16.41"	Arc	117269.182	534492.487	2670852.434	117307.047	534455.197	2670847.723		37.87		90	Right	7.0	40
						Transition	117307.047	534455.197	2670847.723	117332.047	534430.610	2670852.129		25					
						Straight	117332.047	534430.610	2670852.129	117333.898	534428.805	2670852.539	1.851		N 77^11'20.27" W				
						Transition	117333.898	534428.805	2670852.539	117358.898	534404.198	2670856.802		25					
1040	534345.022	2670860.793	91	0	36.96"	Arc	117358.898	534404.198	2670856.802	117460.972	534324.006	2670805.330		102.07		80	Left	7.0	40
						Transition	117460.972	534324.006	2670805.330	117485.972	534317.633	2670781.184		25					
						Straight	117485.972	534317.633	2670781.184	117501.991	534314.357	2670765.505	16.018		S 11^48'02.77" W				
						Transition	117501.991	534314.357	2670765.505	117526.991	534307.246	2670741.610		25					
1041	534306.813	2670740.727	30	53	58.76"	Arc	117526.991	534307.246	2670741.610	117528.956	534306.346	2670739.863		1.97		50	Right	7.0	30
						Transition	117528.956	534306.346	2670739.863	117553.956	534291.022	2670720.198		25					
						Straight	117553.956	534291.022	2670720.198	117611.473	534252.016	2670677.928	57.517		S 42^42'01.54" W				
						Transition	117611.473	534252.016	2670677.928	117626.473	534243.350	2670665.800		15					
1042	534239.101	2670654.855	103	48	02.28"	Arc	117626.473	534243.350	2670665.800	117647.706	534246.587	2670645.810		21.23		20	Left	7.0	20
						Transition	117647.706	534246.587	2670645.810	117662.706	534258.639	2670637.037		15					
						Straight	117662.706	534258.639	2670637.037	117684.601	534277.807	2670626.456	21.895		S 61^06'00.74" E				
						Transition	117684.601	534277.807	2670626.456	117699.601	534289.858	2670617.683		15					
1043	534310.058	2670593.278	158	26	35.40"	Arc	117699.601	534289.858	2670617.683	117739.908	534279.338	2670585.537		40.31		20	Right	7.0	20
						Transition	117739.908	534279.338	2670585.537	117754.908	534264.432	2670585.586		15					
						Straight	117754.908	534264.432	2670585.586	117783.545	534236.030	2670589.246	28.637		N 82^39'25.34" W				
						Transition	117783.545	534236.030	2670589.246	117798.545	534221.282	2670591.902		15					
1044	534218.286	2670592.757	24	19	07.84"	Arc	117798.545	534221.282	2670591.902	117804.767	534215.420	2670593.978		6.22		50	Right	7.0	30
						Transition	117804.767	534215.420	2670593.978	117819.767	534202.289	2670601.196		15					
						Straight	117819.767	534202.289	2670601.196	117845.708	534180.209	2670614.812	25.941		N 58^20'17.50" W				
						Transition	117845.708	534180.209	2670614.812	117860.708	534166.645	2670620.996		15					
1045	534129.834	2670627.603	166	41	56.05"	Arc	117860.708	534166.645	2670620.996	117903.897	534144.778	2670593.319		43.19		20	Left	7.0	20
						Transition	117903.897	534144.778	2670593.319	117918.897	534153.931	2670581.554		15					
						Straight	117918.897	534153.931	2670581.554	117936.131	534166.126	2670569.376	17.234		S 45^02'13.56" E				
						Transition	117936.131	534166.126	2670569.376	117951.131	534177.164	2670559.234		15					
1046	534180.580	2670556.585	22	33	58.38"	Arc	117951.131	534177.164	2670559.234	117959.762	534184.340	2670554.452		8.63		60	Left	6.7	30
						Transition	117959.762	534184.340	2670554.452	117974.762	534197.949	2670548.169		15					
						Straight	117974.762	534197.949	2670548.169	118008.268	534228.928	2670535.402	33.506		S 67^36'11.94" E				
						Transition	118008.268	534228.928	2670535.402	118023.268	534241.895	2670528.050		15					
1047	534266.781	2670504.117	162	48	26.24"	Arc	118023.268	534241.895	2670528.050	118065.099	534233.639	2670494.437		41.83		20	Right	7.0	20
						Transition	118065.099	534233.639	2670494.437	118080.099	534218.741	2670493.930		15					
						Straight	118080.099	534218.741	2670493.930	118127.869	534171.167	2670498.263	47.771		N 84^47'45.69" W				
						Transition	118127.869	534171.167	2670498.263	118142.869	534156.269	2670497.756		15					
1048	534145.552	2670494.626	101	19	01.63"	Arc	118142.869	534156.269	2670497.756	118163.236	534142.592	2670483.860		20.37		20	Left	7.0	20
						Transition	118163.236	534142.592	2670483.860	118178.236	534142.322	2670468.956		15					
						Straight	118178.236	534142.322	2670468.956	118230.230	534147.859	2670417.258	51.994		S 6^06'47.32" E				
						Transition	118230.230	534147.859	2670417.258	118255.230	534148.788	2670392.323		25					
1049	534146.613	2670370.990	63	12	23.55"	Arc	118255.230	534148.788	2670392.323	118296.420	534131.408	2670355.869		41.19		60	Right	6.7	30
						Transition	118296.420	534131.408	2670355.869	118321.420	534111.450	2670340.893		25					
						Straight	118321.420	534111.450	2670340.893	118441.857	534010.337	2670275.463	120.437		S 57^05'36.23" W				
						Transition	118441.857	534010.337	2670275.463	118456.857	533996.911	2670268.986		15					
1050	533955.962	2670260.714	171	48	25.62"	Arc	118456.857	533996.911	2670268.986	118501.829	533975.197	2670297.798		44.97		20	Right	7.0	20
						Transition	118501.829	533975.197	2670297.798	118516.829	533985.122	2670308.920		15					
						Straight	118516.829	533985.122	2670308.920	118584.349	534036.003	2670353.306	67.521		N 48^54'01.85" E				
						Transition	118584.349	534036.003	2670353.306	118609.349	534053.362	2670371.201		25					
1051	534053.445	2670371.321	28	58	55.98"	Arc	118609.349	534053.362	2670371.201	118609.641	534053.527	2670371.441		0.29		50	Left	7.0	30
						Transition	118609.641	534053.527	2670371.441	118634.641	534063.941	2670394.093		25					
						Straight	118634.641	534063.941	2670394.093	118646.109	534067.847	2670404.875	11.468		N 19^55'05.87" E				
						Transition	118646.109	534067.847	2670404.875	118661.109	534071.141	2670419.413		15					

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: April, 2020

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 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 - IIIC

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-IIIC/HAR

REVISION MKD. - R0		SHEET NO. - 07	
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

HIP/CURVE NO.	HIP		DEFLECTION ANGLE			ELEMENT	CHAINAGE (m)	START		CHAINAGE (m)	END		LENGTH (m)	CHORD LENGTH (m)	BEARING (dd mm ss)	RADIUS (m)	HAND OF ARC	SUPERELEVATION (%)	DESIGN SPEED
	EASTING	NORTHING	DEG	MIN	SEC			EASTING	NORTHING		EASTING	NORTHING							
1052	534070.256	2670451.756	159	31	43.44"	Arc	118661.109	534071.141	2670419.413	118701.795	534041.721	2670436.504		40.69		20	Left	7.0	20
						Transition	118701.795	534041.721	2670436.504	118716.795	534030.723	2670426.442		15					
						Straight	118716.795	534030.723	2670426.442	118820.476	533963.540	2670347.473	103.681		S 40^23'22.42" W				
						Transition	118820.476	533963.540	2670347.473	118835.476	533954.052	2670335.858		15					
1053	533943.155	2670321.371	23	22	42.55"	Arc	118835.476	533954.052	2670335.858	118871.480	533936.822	2670304.386		36		125	Left	5.7	40
						Transition	118871.480	533936.822	2670304.386	118886.480	533932.148	2670290.135		15					
						Straight	118886.480	533932.148	2670290.135	118926.712	533920.378	2670251.664	40.232		S 17^00'39.87" W				
						Transition	118926.712	533920.378	2670251.664	118941.712	533915.284	2670237.571		15					
1054	533909.395	2670225.283	47	40	38.75"	Arc	118941.712	533915.284	2670237.571	118968.318	533898.085	2670217.682		26.61		50	Right	7.0	30
						Transition	118968.318	533898.085	2670217.682	118983.318	533884.876	2670210.606		15					
						Transition	119002.745	533867.314	2670202.301	119022.745	533850.056	2670192.303		20					
1055	533844.245	2670187.489	50	0	53.50"	Arc	119022.745	533850.056	2670192.303	119037.662	533840.586	2670180.889		14.92		40	Left	7.0	30
						Transition	119037.662	533840.586	2670180.889	119057.662	533833.947	2670162.082		20					
						Straight	119057.662	533833.947	2670162.082	119069.037	533831.065	2670151.079	11.375		S 14^40'25.12" W				
						Transition	119069.037	533831.065	2670151.079	119084.037	533829.114	2670136.300		15					
1056	533831.053	2670120.074	121	28	33.33"	Arc	119084.037	533829.114	2670136.300	119111.440	533847.340	2670118.739		27.4		20	Left	7.0	20
						Transition	119111.440	533847.340	2670118.739	119126.440	533862.036	2670121.238		15					
						Straight	119126.440	533862.036	2670121.238	119161.450	533895.550	2670131.358	35.009		N 73^11'51.79" E				
						Transition	119161.450	533895.550	2670131.358	119176.450	533910.180	2670134.476		15					
1057	533912.520	2670134.577	37	34	24.76"	Arc	119176.450	533910.180	2670134.476	119181.123	533914.846	2670134.314		4.67		30	Right	5.9	20
						Transition	119181.123	533914.846	2670134.314	119196.123	533929.225	2670130.191		15					
						Straight	119196.123	533929.225	2670130.191	119202.761	533935.432	2670127.837	6.638		S 69^13'43.45" E				
						Transition	119202.761	533935.432	2670127.837	119217.761	533949.811	2670123.714		15					
1058	533952.260	2670123.438	38	2	29.77"	Arc	119217.761	533949.811	2670123.714	119222.680	533954.721	2670123.564		4.92		30	Left	5.9	20
						Transition	119222.680	533954.721	2670123.564	119237.680	533969.325	2670126.801		15					
						Straight	119237.680	533969.325	2670126.801	119260.767	533991.371	2670133.656	23.087		N 72^43'46.78" E				
						Transition	119260.767	533991.371	2670133.656	119285.767	534015.851	2670137.675		25					
1059	534024.063	2670136.724	78	33	30.92"	Arc	119285.767	534015.851	2670137.675	119301.900	534030.629	2670131.702		16.13		30	Right	5.9	20
						Transition	119301.900	534030.629	2670131.702	119326.900	534045.440	2670111.800		25					
						Straight	119326.900	534045.440	2670111.800	119368.373	534065.364	2670075.427	41.473		S 28^42'42.30" E				
						Transition	119368.373	534065.364	2670075.427	119383.373	534072.011	2670061.991		15					
1060	534079.497	2670043.035	51	50	49.11"	Arc	119383.373	534072.011	2670061.991	119422.667	534073.889	2670023.442		39.29		60	Right	6.7	30
						Transition	119422.667	534073.889	2670023.442	119437.667	534068.578	2670009.424		15					
						Straight	119437.667	534068.578	2670009.424	119506.097	534041.692	2669946.498	68.430		S 23^08'06.82" W				
						Transition	119506.097	534041.692	2669946.498	119521.097	534037.588	2669932.167		15					
1061	534037.154	2669917.110	116	56	39.71"	Arc	119521.097	534037.588	2669932.167	119546.918	534051.507	2669912.536		25.82		20	Left	7.0	20
						Transition	119546.918	534051.507	2669912.536	119561.918	534066.388	2669911.666		15					
						Straight	119561.918	534066.388	2669911.666	119581.889	534086.315	2669912.993	19.971		N 86^11'27.10" E				
						Transition	119581.889	534086.315	2669912.993	119596.889	534101.271	2669912.742		15					
1062	534109.723	2669911.173	60	37	28.67"	Arc	119596.889	534101.271	2669912.742	119613.632	534116.061	2669905.367		16.74		30	Right	5.9	20
						Transition	119613.632	534116.061	2669905.367	119628.632	534125.261	2669893.572		15					
						Straight	119628.632	534125.261	2669893.572	119654.582	534139.465	2669871.854	25.950		S 33^11'04.22" E				
						Transition	119654.582	534139.465	2669871.854	119669.582	534149.114	2669860.492		15					
1063	534156.939	2669854.946	94	12	51.75"	Arc	119669.582	534149.114	2669860.492	119687.469	534166.163	2669857.575		17.89		20	Left	7.0	20
						Transition	119687.469	534166.163	2669857.575	119702.469	534179.040	2669865.084		15					
						Straight	119702.469	534179.040	2669865.084	119710.583	534185.486	2669870.012	8.114		N 52^36'04.03" E				
						Transition	119710.583	534185.486	2669870.012	119725.583	534198.084	2669878.077		15					
1064	534205.110	2669881.070	57	12	37.07"	Arc	119725.583	534198.084	2669878.077	119740.539	534212.711	2669880.340		14.96		30	Right	5.9	20
						Transition	119740.539	534212.711	2669880.340	119755.539	534227.157	2669876.458		15					
						Straight	119755.539	534227.157	2669876.458	119767.632	534238.534	2669872.360	12.093		S 70^11'18.90" E				
						Transition	119767.632	534238.534	2669872.360	119782.632	534252.137	2669866.137		15					
1065	534258.432	2669861.869	57	5	51.72"	Arc	119782.632	534252.137	2669866.137	119797.528	534261.933	2669855.118		14.9		30	Right	5.9	20
						Transition	119797.528	534261.933	2669855.118	119812.528	534266.522	2669840.881		15					
						Straight	119812.528	534266.522	2669840.881	119862.020	534277.731	2669792.676	49.492		S 13^05'27.18" E				
						Transition	119862.020	534277.731	2669792.676	119887.020	534284.646	2669768.679		25					
1066	534289.771	2669756.022	37	16	39.80"	Arc	119887.020	534284.646	2669768.679	119914.069	534298.804	2669745.782		27.05		80	Left	7.0	40
						Transition	119914.069	534298.804	2669745.782	119939.069	534317.182	2669728.873		25					
						Straight	119939.069	534317.182	2669728.873	119972.477	534342.912	2669707.564	33.408		S 50^22'06.98" E				
						Transition	119972.477	534342.912	2669707.564	119997.477	534363.628	2669693.765		25					
1067	534368.417	2669691.857	50	29	46.10"	Arc	119997.477	534363.628	2669693.765	120007.730	534373.532	2669691.225		10.25		40	Left	7.0	30
						Transition	120007.730	534373.532	2669691.225	120032.730	534398.333	2669693.352		25					
						Straight	120032.730	534398.333	2669693.352	120087.536	534452.157	2669703.682	54.806		N 79^08'06.91" E				
						Transition	120087.536	534452.157	2669703.682	120102.536	534467.032	2669704.647		15					
1068	534494.905	2669699.420	152	35	02.99"	Arc	120102.536	534467.032	2669704.647	120140.798	534480.625	2669674.919		38.26		20	Right	7.0	20
						Transition	120140.798	534480.625	2669674.919	120155.798	534470.165	2669664.299		15					
						Straight	120155.798	534470.165	2669664.299	120194.643	534439.672	2669640.234	38.845		S 51^43'09.91" W				
						Transition	120194.643	534439.672	2669640.234	120219.643	534423.068	2669621.916		25					
1069	534420.520	2669615.933	86	27	30.78"	Arc	120219.643	534423.068	2669621.916	120232.368	534421.210	2669609.467		12.73		25	Left	7.0	20
						Transition	120232.368	534421.210	2669609.467	120257.368	534431.740	2669587.098		25					
						Straight	120257.368	534431.740	2669587.098	120337.343	534477.313	2669521.378	79.975		S 34^44'20.87" E				
						Transition	120337.343	534477.313	2669521.378	120372.343	534492.742	2669490.294		35					

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: April, 2020

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 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 - IIIC

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-IIIC/HAR

REVISION MKD. - R0 | SHEET NO. - 08

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

HIP/CURVE NO.	HIP		DEFLECTION ANGLE			ELEMENT	CHAINAGE (m)	START		CHAINAGE (m)	END		LENGTH (m)	CHORD LENGTH (m)	BEARING (dd mm ss)	RADIUS (m)	HAND OF ARC	SUPERELEVATION (%)	DESIGN SPEED
	EASTING	NORTHING	DEG	MIN	SEC			EASTING	NORTHING		EASTING	NORTHING							
1070	534497.916	2669459.937	125	18	55.67"	Arc	120372.343	534492.742	2669490.294	120424.829	534469.892	2669447.172		52.49		40	Right	7.0	30
						Transition	120424.829	534469.892	2669447.172	120459.829	534435.508	2669442.483		35					
						Straight	120459.829	534435.508	2669442.483	120464.542	534430.795	2669442.530	4.713		N 89^25'25.20" W				
						Transition	120464.542	534430.795	2669442.530	120489.542	534405.887	2669441.050		25					
1071	534401.812	2669440.231	31	47	55.54"	Arc	120489.542	534405.887	2669441.050	120497.842	534397.889	2669438.858		8.3		60	Left	6.7	30
						Transition	120497.842	534397.889	2669438.858	120522.842	534375.705	2669427.436		25					
						Straight	120522.842	534375.705	2669427.436	120600.411	534309.371	2669387.226	77.570		S 58^46'39.25" W				
						Transition	120600.411	534309.371	2669387.226	120625.411	534288.982	2669372.843		25					
1072	534277.517	2669362.093	53	13	50.87"	Arc	120625.411	534288.982	2669372.843	120656.155	534272.795	2669347.102		30.74		60	Left	6.7	30
						Transition	120656.155	534272.795	2669347.102	120681.155	534268.666	2669322.494		25					
						Straight	120681.155	534268.666	2669322.494	120702.088	534266.643	2669301.658	20.934		S 5^32'48.39" W				
						Transition	120702.088	534266.643	2669301.658	120717.088	534263.366	2669287.116		15					
1073	534257.397	2669275.418	109	33	12.21"	Arc	120717.088	534263.366	2669287.116	120740.329	534244.290	2669276.246		23.24		20	Right	7.0	20
						Transition	120740.329	534244.290	2669276.246	120755.329	534230.109	2669280.839		15					
						Straight	120755.329	534230.109	2669280.839	120861.531	534133.936	2669325.890	106.201		N 64^53'59.40" W				
						Transition	120861.531	534133.936	2669325.890	120876.531	534120.250	2669332.025		15					
1074	534110.865	2669335.862	13	27	50.69"	Arc	120876.531	534120.250	2669332.025	120896.779	534101.048	2669338.401		20.25		150	Left	4.7	40
						Transition	120896.779	534101.048	2669338.401	120911.779	534086.410	2669341.671		15					
						Straight	120911.779	534086.410	2669341.671	120944.610	534054.255	2669348.292	32.830		N 78^21'50.09" W				
						Transition	120944.610	534054.255	2669348.292	120979.610	534019.609	2669350.286		35					
1075	534015.555	2669349.318	62	1	49.40"	Arc	120979.610	534019.609	2669350.286	120987.915	534011.788	2669347.536		8.31		40	Left	7.0	30
						Transition	120987.915	534011.788	2669347.536	121022.915	533986.020	2669324.291		35					
						Straight	121022.915	533986.020	2669324.291	121098.777	533937.657	2669265.843	75.862		S 39^36'20.51" W				
						Transition	121098.777	533937.657	2669265.843	121113.777	533926.798	2669255.631		15					
1076	533914.369	2669248.767	113	43	01.69"	Arc	121113.777	533926.798	2669255.631	121138.472	533903.790	2669258.238		24.7		20	Right	7.0	20
						Transition	121138.472	533903.790	2669258.238	121153.472	533895.491	2669270.621		15					
						Straight	121153.472	533895.491	2669270.621	121184.560	533881.534	2669298.399	31.088		N 26^40'37.80" W				
						Transition	121184.560	533881.534	2669298.399	121199.560	533873.235	2669310.782		15					
1077	533865.346	2669317.844	98	45	54.55"	Arc	121199.560	533873.235	2669310.782	121219.036	533855.071	2669315.291		19.48		20	Left	7.0	20
						Transition	121219.036	533855.071	2669315.291	121234.036	533841.944	2669308.226		15					
						Straight	121234.036	533841.944	2669308.226	121360.354	533739.033	2669234.976	126.319		S 54^33'27.65" W				
						Transition	121360.354	533739.033	2669234.976	121380.354	533722.369	2669223.933		20					
1078	533713.013	2669218.594	23	45	18.62"	Arc	121380.354	533722.369	2669223.933	121401.815	533702.735	2669215.370		21.46		100	Right	7.0	40
						Transition	121401.815	533702.735	2669215.370	121421.815	533683.305	2669210.670		20					
						Straight	121421.815	533683.305	2669210.670	121591.404	533517.232	2669176.317	169.589		S 78^18'46.26" W				
						Transition	121591.404	533517.232	2669176.317	121606.404	533503.124	2669171.503		15					
1079	533493.858	2669165.446	100	53	54.46"	Arc	121606.404	533503.124	2669171.503	121626.624	533494.071	2669154.379		20.22		20	Left	7.0	20
						Transition	121626.624	533494.071	2669154.379	121641.624	533498.037	2669140.010		15					
						Straight	121641.624	533498.037	2669140.010	121677.274	533511.729	2669107.094	35.650		S 22^35'08.19" E				
						Transition	121677.274	533511.729	2669107.094	121692.274	533517.719	2669093.344		15					
1080	533520.068	2669088.409	9	54	09.24"	Arc	121692.274	533517.719	2669093.344	121703.199	533522.769	2669083.659		10.93		150	Left	4.7	40
						Transition	121703.199	533522.769	2669083.659	121718.199	533530.613	2669070.875		15					
						Straight	121718.199	533530.613	2669070.875	121768.852	533557.821	2669028.149	50.654		S 32^29'17.43" E				

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: April, 2020

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 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 - IIIC

CONSULTANT :
CE TESTING COMPANY PVT. LTD.
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-IIIC/HAR

REVISION MKD. - R0 | SHEET NO. - 09

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

VERTICAL ALIGNMENT REPORT

VERTICAL CURVE REPORT

CURVE NO.	IP		TYPE OF CURVE	CURVE LENGTH	M VALUE	START		END		GRADIENT		K' VALUE
	CHAINAGE	LEVEL				CHAINAGE	LEVEL	CHAINAGE	LEVEL	IN	OUT	
369	103600.000	1265.064	Sag	60	0.097	103570.000	1263.453	103630.000	1267.064	5.369	6.668	46.189
370	103749.790	1275.052	Hog	120	-1.734	103689.790	1271.051	103809.790	1272.116	6.668	-4.894	10.379
371	103938.000	1265.841	Sag	60	0.097	103908.000	1267.309	103968.000	1264.761	-4.894	-3.599	46.332
372	104018.000	1262.962	Hog	60	-0.112	103988.000	1264.042	104048.000	1261.435	-3.599	-5.092	40.188
373	104148.000	1256.343	Sag	60	0.125	104118.000	1257.870	104178.000	1255.315	-5.092	-3.427	36.036
374	104253.000	1252.745	Hog	60	-0.009	104223.000	1253.773	104283.000	1251.679	-3.427	-3.553	476.190
375	104450.000	1245.745	Hog	60	-0.200	104420.000	1246.811	104480.000	1243.881	-3.553	-6.214	22.548
376	104602.000	1236.300	Sag	60	0.136	104572.000	1238.164	104632.000	1234.981	-6.214	-4.397	33.021
377	104718.000	1231.199	Sag	60	0.109	104688.000	1232.518	104748.000	1230.314	-4.397	-2.949	41.436
378	104828.000	1227.955	Hog	60	-0.122	104798.000	1228.840	104858.000	1226.581	-2.949	-4.580	36.787
379	105084.000	1216.230	Sag	60	0.165	105054.000	1217.604	105114.000	1215.518	-4.580	-2.374	27.199
380	105288.000	1211.388	Hog	60	-0.057	105258.000	1212.100	105318.000	1210.449	-2.374	-3.128	79.576
381	105457.000	1206.101	Hog	100	-0.358	105407.000	1207.665	105507.000	1203.107	-3.128	-5.989	34.953
382	105729.000	1189.812	Sag	150	0.899	105654.000	1194.303	105804.000	1188.916	-5.989	-1.194	31.283
383	105930.000	1187.412	Hog	100	-0.362	105880.000	1188.009	105980.000	1185.369	-1.194	-4.087	34.566
384	106622.000	1159.131	Sag	60	0.109	106592.000	1160.357	106652.000	1158.341	-4.087	-2.633	41.265
385	106776.000	1155.076	Sag	100	1.160	106726.000	1156.393	106826.000	1158.398	-2.633	6.643	10.781
386	107048.000	1173.145	Hog	100	-0.518	106998.000	1169.823	107098.000	1174.394	6.643	2.497	24.120
387	107218.000	1177.390	Hog	60	-0.061	107188.000	1176.641	107248.000	1177.893	2.497	1.677	73.171
388	107311.000	1178.950	Sag	60	0.089	107281.000	1178.447	107341.000	1179.807	1.677	2.858	50.804
389	107460.000	1183.208	Hog	60	-0.109	107430.000	1182.351	107490.000	1183.631	2.858	1.411	41.465
390	107533.000	1184.238	Sag	60	0.138	107503.000	1183.815	107563.000	1185.214	1.411	3.254	32.556
391	107684.000	1189.151	Hog	60	-0.049	107654.000	1188.175	107714.000	1189.932	3.254	2.604	92.308
392	107871.000	1194.020	Sag	80	0.246	107831.000	1192.979	107911.000	1196.046	2.604	5.065	32.507
393	108035.000	1202.326	Hog	60	-0.062	108005.000	1200.807	108065.000	1203.599	5.065	4.245	73.171
394	108145.781	1207.028	Sag	60	0.062	108115.781	1205.755	108175.781	1208.549	4.245	5.071	72.639
395	108226.785	1211.136	Hog	60	-0.095	108196.785	1209.615	108256.785	1212.277	5.071	3.804	47.356
396	108308.000	1214.225	Hog	60	-0.077	108278.000	1213.084	108338.000	1215.057	3.804	2.774	58.252
397	108403.000	1216.860	Hog	80	-0.604	108363.000	1215.751	108443.000	1215.554	2.774	-3.265	13.247
398	108504.000	1213.562	Sag	60	0.143	108474.000	1214.542	108534.000	1213.156	-3.265	-1.353	31.381
399	108629.000	1211.871	Hog	60	-0.186	108599.000	1212.277	108659.000	1210.723	-1.353	-3.827	24.252
400	108718.000	1208.465	Hog	60	-0.130	108688.000	1209.613	108748.000	1206.798	-3.827	-5.556	34.702
401	108908.000	1197.908	Sag	60	0.195	108878.000	1199.575	108938.000	1197.020	-5.556	-2.959	23.104
402	109022.000	1194.535	Hog	60	-0.112	108992.000	1195.423	109052.000	1193.200	-2.959	-4.449	40.268
403	109933.000	1154.002	Hog	60	-0.034	109903.000	1155.337	109963.000	1152.531	-4.449	-4.902	132.450
404	110020.000	1149.737	Sag	60	0.395	109990.000	1151.208	110050.000	1149.848	-4.902	0.371	11.379
405	110113.000	1150.082	Hog	60	-0.382	110083.000	1149.971	110143.000	1148.663	0.371	-4.729	11.765
406	110269.000	1142.705	Hog	60	-0.139	110239.000	1144.124	110299.000	1140.729	-4.729	-6.586	32.310
407	110645.434	1117.914	Sag	60	0.132	110615.434	1119.890	110675.434	1116.465	-6.586	-4.831	34.188
408	111804.120	1061.943	Hog	60	-0.033	111774.120	1063.392	111834.120	1060.362	-4.831	-5.270	136.674
409	112156.465	1043.374	Sag	60	0.141	112126.465	1044.955	112186.465	1042.355	-5.270	-3.394	31.983
410	112274.562	1039.365	Hog	80	-0.262	112234.562	1040.723	112314.562	1036.959	-3.394	-6.015	30.523
411	112455.826	1028.462	Sag	60	0.058	112425.826	1030.266	112485.826	1026.891	-6.015	-5.237	77.121
412	112620.960	1019.814	Sag	80	0.179	112580.960	1021.909	112660.960	1018.436	-5.237	-3.445	44.643
413	113104.042	1003.171	Hog	150	-0.614	113029.042	1005.755	113179.042	998.133	-3.445	-6.718	45.830
414	113361.019	985.909	Sag	80	0.423	113321.019	988.596	113401.019	984.912	-6.718	-2.491	18.926
415	113502.257	982.391	Hog	60	-0.099	113472.257	983.138	113532.257	981.247	-2.491	-3.812	45.420
416	113662.057	976.300	Hog	60	-0.187	113632.057	977.443	113692.057	974.410	-3.812	-6.299	24.125
417	113808.847	967.054	Sag	60	0.113	113778.847	968.943	113838.847	965.615	-6.299	-4.797	39.947

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: APRIL,2020

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 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 - IIIC

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-IIIC/VAR

REVISION MKD. - R0 | SHEET NO. - 01

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

VERTICAL CURVE REPORT												
CURVE NO.	IP		TYPE OF CURVE	CURVE LENGTH	M VALUE	START		END		GRADIENT		K' VALUE
	CHAINAGE	LEVEL				CHAINAGE	LEVEL	CHAINAGE	LEVEL	IN	OUT	
418	113953.931	960.095	Hog	60	-0.066	113923.931	961.534	113983.931	958.390	-4.797	-5.682	67.797
419	114151.168	948.887	Sag	60	0.118	114121.168	950.592	114181.168	947.655	-5.682	-4.106	38.071
420	114287.094	943.305	Hog	60	-0.133	114257.094	944.537	114317.094	941.543	-4.106	-5.875	33.917
421	114682.000	920.104	Hog	60	-0.084	114652.000	921.867	114712.000	918.006	-5.875	-6.994	53.619
422	115196.000	884.154	Sag	60	0.130	115166.000	886.252	115226.000	882.574	-6.994	-5.267	34.742
423	115549.000	865.560	Hog	60	-0.128	115519.000	867.140	115579.000	863.469	-5.267	-6.971	35.211
424	115860.000	843.881	Sag	60	0.073	115830.000	845.972	115890.000	842.080	-6.971	-6.002	61.920
425	117212.000	762.735	Hog	60	-0.074	117182.000	764.536	117242.000	760.637	-6.002	-6.993	60.545
426	117680.000	730.007	Sag	60	0.075	117650.000	732.105	117710.000	728.207	-6.993	-5.999	60.362
427	118287.000	693.591	Hog	80	-0.096	118247.000	695.991	118327.000	690.806	-5.999	-6.963	82.988
428	118669.956	666.924	Sag	100	0.637	118619.956	670.406	118719.956	665.992	-6.963	-1.864	19.612
429	119226.000	656.561	Hog	80	-0.141	119186.000	657.306	119266.000	655.252	-1.864	-3.272	56.818
430	119834.000	636.669	Hog	150	-0.511	119759.000	639.123	119909.000	632.171	-3.272	-5.997	55.046
431	120212.000	614.000	Sag	60	0.450	120182.000	615.799	120242.000	614.000	-5.997	0.000	10.005
432	120380.000	614.000	Hog	60	-0.367	120350.000	614.000	120410.000	612.532	0.000	-4.893	12.262
433	120645.000	601.033	Sag	80	0.312	120605.000	602.990	120685.000	600.323	-4.893	-1.775	25.657
434	120786.000	598.530	Hog	80	-0.276	120746.000	599.240	120826.000	596.716	-1.775	-4.535	28.986
435	120974.000	590.004	Sag	60	0.004	120944.000	591.365	121004.000	588.661	-4.535	-4.478	1052.632
436	121100.000	584.362	Sag	60	0.066	121070.000	585.705	121130.000	583.281	-4.478	-3.604	68.650
437	121334.000	575.929	Hog	60	-0.079	121304.000	577.010	121364.000	574.531	-3.604	-4.660	56.818
438	121539.000	566.375	Hog	80	-0.232	121499.000	568.239	121579.000	563.581	-4.660	-6.985	34.409
439	121752.000	551.498	Sag	30	0.089	121737.000	552.546	121767.000	550.804	-6.985	-4.624	12.706

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REVISIONS

Scale :- N.T.S

DATE: APRIL,2020

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
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VERTICAL ALIGNMENT REPORT

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

CONSULTANT : 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-IIIC/VAR

REVISION MKD. - R0 | SHEET NO. - 02

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

CURVE DETAIL REPORT

CURVE DETAILS

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							
912	103+578.594	103+584.654	103+588.858	2672850.832	539153.414	30	48^15'06.10"	15	10.265	5.9		20
913	103+630.964	103+688.630	103+684.095	2672762.369	539095.321	30	130^07'11.98"	15	53.131	5.9	Right	20
914	103+775.831	103+793.863	103+799.735	2672922.836	539047.522	50	73^13'43.40"	40	23.904	7.0		40
915	103+946.091	103+952.123	103+953.193	2672923.383	538877.104	50	53^58'31.86"	40	7.103	7.0	Right	40
916	104+087.216	104+092.623	104+097.747	2673041.301	538791.931	100	17^29'34.99"	20	10.531	7.0		40
917	104+222.285	104+267.396	104+270.178	2673145.837	538651.514	30	120^07'04.71"	15	47.894	5.9		20
918	104+341.630	104+400.590	104+395.209	2672971.460	538631.497	30	130^58'30.63"	15	53.578	5.9	Right	20
919	104+522.741	104+535.533	104+545.124	2673118.443	538496.923	40	53^32'53.24"	15	22.384	4.4		20
920	104+591.137	104+600.417	104+603.648	2673111.297	538429.215	20	78^48'45.87"	15	12.511	7.0	Right	20
921	104+726.860	104+736.447	104+739.726	2673247.013	538387.173	20	79^49'50.72"	15	12.866	7.0	Right	20
922	104+784.932	104+805.403	104+814.664	2673281.627	538454.004	30	85^25'52.95"	15	29.732	5.9		20
923	104+955.810	104+969.134	104+982.441	2673442.884	538386.177	300	5^05'10.07"	--NA--	26.631	2.4		40
924	105+038.742	105+041.343	105+042.834	2673506.716	538352.382	50	33^20'14.61"	25	4.092	7.0	Right	40
925	105+138.576	105+147.996	105+148.533	2673613.992	538362.596	30	76^18'41.89"	30	9.957	7.0		30
926	105+214.398	105+221.075	105+224.728	2673640.848	538285.159	40	50^36'20.73"	25	10.329	7.0	Right	30
927	105+284.733	105+286.987	105+289.030	2673705.516	538261.280	60	18^25'40.30"	15	4.298	6.7		30
928	105+320.928	105+333.520	105+337.009	2673741.999	538232.057	20	89^02'31.45"	15	16.082	7.0	Right	20
929	105+456.607	105+476.696	105+489.705	2673839.174	538349.301	40	68^53'45.19"	15	33.098	7.0		30
930	105+527.203	105+534.262	105+540.970	2673900.462	538328.736	80	20^36'10.08"	15	13.767	5.0	Right	30
931	105+586.182	105+592.073	105+594.406	2673958.588	538330.821	20	66^31'49.56"	15	8.224	7.0		20
932	105+687.103	105+691.054	105+692.936	2674002.770	538238.288	40	44^09'50.26"	25	5.832	7.0	Right	30
933	105+731.925	105+757.790	105+783.529	2674067.297	538214.404	300	9^51'20.31"	--NA--	51.604	2.4		40
934	105+811.250	105+836.017	105+860.672	2674135.038	538175.028	300	9^26'20.01"	--NA--	49.422	2.4		40
935	105+875.772	105+902.511	105+929.109	2674186.354	538132.565	300	10^11'11.73"	--NA--	53.337	2.4	Right	40
936	106+027.614	106+030.931	106+034.056	2674298.336	538069.414	100	15^09'00.50"	20	6.442	7.0		40
937	106+163.353	106+181.942	106+199.995	2674406.052	537963.302	150	19^43'32.34"	15	36.642	4.7		40
938	106+348.108	106+373.271	106+373.570	2674489.268	537790.422	20	115^54'47.70"	15	25.461	7.0		20
939	106+483.015	106+485.850	106+488.511	2674351.825	537790.924	100	14^36'29.13"	20	5.496	7.0	Right	40
940	106+612.885	106+649.874	106+680.616	2674192.784	537750.093	100	50^15'58.42"	20	67.731	7.0		40
941	106+772.121	106+785.263	106+797.538	2674078.006	537833.079	100	26^01'19.71"	20	25.417	7.0	Right	40
942	106+876.447	106+919.240	106+961.459	2673945.148	537856.136	300	16^14'09.69"	0	85.012	2.4	Right	40
943	106+997.353	107+008.617	107+015.633	2673855.756	537846.124	30	63^33'37.18"	15	18.280	5.9		20
944	107+092.487	107+102.577	107+109.058	2673802.513	537928.645	30	60^17'43.55"	15	16.571	5.9	Right	20
945	107+149.732	107+160.932	107+167.920	2673740.642	537925.266	30	63^23'02.28"	15	18.188	5.9		20
946	107+265.728	107+277.512	107+284.746	2673680.718	538030.146	30	64^58'10.71"	15	19.018	5.9	Right	20
947	107+309.425	107+320.676	107+331.833	2673633.165	538026.227	100	12^50'20.98"	--NA--	22.409	4.0		30
948	107+441.269	107+466.582	107+484.865	2673488.632	538046.868	75	56^13'24.26"	30	43.596	7.0	Right	40
949	107+565.170	107+569.368	107+572.558	2673415.287	537965.137	75	28^33'44.21"	30	7.388	7.0		40
950	107+647.127	107+657.920	107+664.729	2673330.881	537935.192	30	62^15'55.41"	15	17.602	5.9		20
951	107+696.279	107+707.459	107+716.920	2673291.567	537971.511	50	40^50'29.68"	15	20.641	7.0	Right	30
952	107+740.474	107+750.570	107+760.623	2673246.761	537972.990	125	9^14'07.52"	--NA--	20.149	3.2		30
953	107+786.995	107+790.842	107+793.514	2673207.204	537980.769	30	41^05'56.55"	15	6.519	7.0	Right	25
954	107+875.398	107+889.020	107+900.926	2673121.138	537931.132	60	38^42'06.94"	15	25.529	6.7		30
955	107+941.459	107+954.091	107+965.219	2673055.124	537941.268	60	37^00'44.36"	15	23.759	6.7	Right	30
956	108+008.723	108+011.399	108+012.378	2673003.334	537913.401	40	41^02'43.98"	25	3.655	7.0	Right	30
957	108+104.349	108+111.950	108+118.089	2672967.241	537817.736	40	41^09'59.64"	15	13.740	7.0		30
958	108+151.387	108+159.552	108+166.105	2672923.985	537794.578	40	42^34'05.52"	15	14.718	7.0	Right	30
959	108+205.957	108+210.954	108+215.545	2672906.490	537744.535	60	23^28'46.66"	15	9.588	6.7		30
960	108+290.541	108+310.507	108+330.119	2672838.639	537671.131	200	15^38'07.28"	15	39.578	3.6		40
961	108+457.434	108+460.823	108+462.205	2672710.331	537592.146	60	37^58'39.80"	35	4.770	7.0		40
962	108+588.071	108+598.796	108+602.101	2672571.213	537607.657	25	77^59'26.33"	20	14.030	7.0	Right	20
963	108+625.099	108+674.873	108+719.835	2672544.897	537528.416	125	43^25'25.51"	--NA--	94.736	3.2	Right	30
964	108+755.180	108+760.789	108+765.275	2672583.315	537446.225	50	34^29'08.69"	20	10.094	7.0		30
965	108+841.272	108+854.186	108+864.014	2672567.824	537352.984	50	48^58'46.75"	20	22.743	7.0		30
966	108+905.152	108+915.108	108+924.481	2672513.299	537319.457	80	24^35'12.52"	15	19.330	5.0	Right	30
967	108+963.923	108+969.873	108+974.634	2672482.488	537273.478	50	35^11'33.29"	20	10.711	7.0		30
968	109+047.871	109+054.752	109+060.255	2672402.127	537242.660	50	37^06'32.47"	20	12.384	7.0		30
969	109+149.699	109+165.446	109+179.888	2672294.466	537273.791	80	32^21'51.91"	15	30.189	5.0		30
970	109+228.383	109+248.882	109+250.990	2672238.306	537337.250	20	107^44'07.60"	15	22.607	7.0	Right	20
971	109+308.579	109+338.101	109+336.227	2672183.276	537244.776	20	122^10'39.39"	15	27.648	7.0	Right	20
972	109+394.921	109+406.422	109+415.314	2672282.962	537247.249	50	46^17'16.49"	20	20.394	7.0		30
973	109+554.529	109+562.034	109+568.023	2672395.101	537135.630	50	38^22'55.07"	20	13.495	7.0	Right	30
974	109+628.102	109+634.590	109+640.668	2672468.699	537127.264	70	22^33'47.01"	15	12.566	5.7	Right	30

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DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IIIC/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												
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							
975	109+703.990	109+722.778	109+741.517	2672553.831	537151.801	300	7^10'02.01"	--NA--	37.527	2.4	Right	40
976	109+798.263	109+811.415	109+824.549	2672635.318	537186.802	300	5^01'12.66"	--NA--	26.286	2.4	Right	40
977	109+876.757	109+913.710	109+931.838	2672725.431	537235.253	50	86^02'12.89"	20	55.081	7.0	Right	30
978	110+014.043	110+061.121	110+047.532	2672657.016	537386.758	20	138^54'45.61"	15	33.490	7.0		20
979	110+110.327	110+175.195	110+219.339	2672815.884	537313.988	80	78^04'25.54"	--NA--	109.012	2.2	Right	20
980	110+249.069	110+253.466	110+255.182	2672874.819	537393.528	20	60^29'07.20"	15	6.113	7.0		20
981	110+308.692	110+317.993	110+325.332	2672941.523	537385.312	50	41^59'10.16"	20	16.640	7.0	Right	30
982	110+396.723	110+403.398	110+409.721	2673013.121	537435.379	100	18^54'22.96"	20	12.998	7.0		40
983	110+452.627	110+457.872	110+462.840	2673065.807	537450.544	100	17^18'40.35"	20	10.214	7.0	Right	40
984	110+568.674	110+668.323	110+608.959	2673241.795	537566.451	20	158^22'45.88"	15	40.285	7.0		20
985	110+650.580	110+651.437	110+652.202	2673160.254	537450.042	75	12^41'54.33"	15	1.622	5.3		30
986	110+754.954	110+761.044	110+766.363	2673079.106	537376.226	80	26^04'34.38"	25	11.409	7.0	Right	40
987	110+913.118	110+930.347	110+944.852	2673016.407	537218.130	80	40^37'55.72"	25	31.733	7.0		40
988	111+101.698	111+104.936	111+106.201	2672859.467	537135.610	60	37^43'19.40"	35	4.502	7.0	Right	40
989	111+225.658	111+237.616	111+248.825	2672803.536	537013.124	100	24^43'57.13"	20	23.166	7.0		40
990	111+314.690	111+325.817	111+329.263	2672736.125	536955.090	20	84^43'10.84"	15	14.573	7.0	Right	20
991	111+380.006	111+395.932	111+405.664	2672781.240	536891.711	40	65^24'01.73"	20	25.658	4.4		20
992	111+472.428	111+474.510	111+475.577	2672738.910	536818.264	50	32^15'22.40"	25	3.149	7.0	Right	30
993	111+559.252	111+580.724	111+602.122	2672743.214	536711.120	300	8^11'15.12"	--NA--	42.870	2.4	Right	40
994	111+802.543	111+844.023	111+877.496	2672791.155	536452.148	100	54^24'14.01"	20	74.953	7.0	Right	40
995	111+931.714	111+953.651	111+955.266	2672897.673	536402.232	20	110^26'41.19"	15	23.552	7.0		20
996	112+056.548	112+062.215	112+066.115	2672805.662	536311.980	50	39^36'40.92"	25	9.567	7.0	Right	30
997	112+161.915	112+189.504	112+199.233	2672792.302	536183.617	40	89^15'47.32"	25	37.317	7.0	Right	30
998	112+312.739	112+349.581	112+343.286	2672969.032	536162.923	20	130^28'54.25"	15	30.547	7.0		20
999	112+425.160	112+431.970	112+438.684	2672876.989	536077.571	150	10^53'44.35"	15	13.525	4.7	Right	40
1000	112+548.613	112+564.040	112+579.098	2672798.810	535971.006	150	17^22'27.00"	15	30.485	4.7		40
1001	112+710.982	112+773.470	112+771.925	2672629.860	535846.622	40	123^06'15.81"	25	60.943	7.0		30
1002	112+826.086	112+940.783	112+969.562	2672616.716	536077.595	80	113^29'59.81"	15	143.476	5.0	Right	30
1003	113+112.053	113+122.621	113+125.655	2672377.630	535957.050	30	73^43'26.97"	25	13.602	7.0		30
1004	113+178.966	113+180.482	113+180.601	2672333.003	536004.852	40	38^09'08.45"	25	1.635	7.0	Right	30
1005	113+236.320	113+246.815	113+250.208	2672266.073	536015.231	20	82^45'25.76"	15	13.888	7.0	Right	20
1006	113+301.776	113+315.835	113+319.264	2672245.017	535942.080	20	93^04'13.78"	15	17.488	7.0		20
1007	113+376.087	113+388.842	113+399.846	2672165.998	535969.486	80	34^55'16.54"	25	23.759	7.0	Right	40
1008	113+497.141	113+501.487	113+505.633	2672055.919	535938.352	80	16^49'31.77"	15	8.493	7.0	Right	40
1009	113+562.184	113+570.660	113+579.132	2671997.487	535900.957	300	3^14'12.68"	--NA--	16.948	2.4		40
1010	113+643.528	113+660.096	113+676.630	2671919.551	535857.076	300	6^19'19.55"	--NA--	33.102	2.4	Right	40
1011	113+758.131	113+894.050	113+800.294	2671729.542	535720.522	20	163^45'39.58"	15	42.163	7.0	Right	20
1012	113+867.384	113+879.767	113+892.135	2671932.624	535792.296	300	4^43'37.43"	--NA--	24.751	2.4		40
1013	113+959.530	113+973.136	113+986.722	2672022.935	535816.052	300	5^11'36.02"	--NA--	27.192	2.4	Right	40
1014	114+047.766	114+072.850	114+097.817	2672116.694	535850.049	300	9^33'32.68"	--NA--	50.051	2.4		40
1015	114+138.692	114+155.604	114+172.073	2672198.211	535864.969	150	18^28'48.71"	15	33.381	4.7		40
1016	114+262.469	114+269.770	114+276.965	2672311.674	535848.804	150	11^15'58.88"	15	14.495	4.7	Right	40
1017	114+344.201	114+348.073	114+350.587	2672389.965	535853.123	50	35^57'55.98"	25	6.386	7.0		40
1018	114+433.849	114+441.641	114+447.921	2672469.749	535801.691	40	41^38'33.12"	15	14.072	4.4	Right	20
1019	114+487.095	114+496.707	114+502.954	2672525.655	535810.380	30	58^56'10.65"	15	15.859	5.9		20
1020	114+678.274	116+869.668	114+725.734	2674049.905	533987.309	20	178^56'00.52"	15	47.460	7.0		20
1021	114+837.966	114+849.203	114+857.847	2672532.281	535735.282	40	49^57'50.23"	15	19.881	4.4	Right	20
1022	115+047.771	115+073.716	115+085.948	2672305.205	535731.599	40	83^19'54.44"	20	38.177	7.0	Right	30
1023	115+169.866	115+181.512	115+189.234	2672293.054	535610.699	40	56^23'27.94"	20	19.368	7.0		30
1024	115+334.977	115+357.841	115+380.674	2672133.708	535526.437	500	5^14'11.48"	--NA--	45.697	1.4		40
1025	115+458.205	115+476.457	115+492.309	2672024.198	535480.778	90	37^37'36.67"	25	34.104	7.0	Right	40
1026	115+553.469	115+608.265	115+655.148	2671957.622	535364.247	135	49^31'13.22"	15	101.680	5.3		40
1027	115+806.344	115+814.774	115+822.147	2671746.956	535324.289	80	29^13'23.29"	25	15.803	7.0		40
1028	115+897.892	115+898.952	115+898.509	2671666.117	535351.311	60	34^00'40.20"	35	0.616	7.0	Right	40
1029	115+987.443	115+996.057	116+001.172	2671571.108	535324.913	60	46^31'56.86"	35	13.729	7.0	Right	40
1030	116+061.322	116+091.046	116+114.212	2671524.962	535237.905	75	55^41'02.73"	20	52.890	7.0		40
1031	116+172.109	116+186.040	116+198.322	2671424.038	535226.627	75	35^18'14.54"	20	26.213	7.0	Right	40
1032	116+248.574	116+256.386	116+263.221	2671370.267	535178.753	80	28^23'43.34"	25	14.647	7.0		40
1033	116+382.071	116+416.268	116+423.429	2671213.713	535141.789	50	93^13'44.90"	40	41.358	7.0	Right	40
1034	116+519.935	116+536.507	116+552.470	2671255.576	535000.589	125	21^47'17.85"	15	32.535	5.7		40
1035	116+757.312	116+777.397	116+793.989	2671233.376	534760.113	80	44^10'22.38"	25	36.677	7.0		40
1036	116+892.544	116+899.677	116+906.663	2671137.813	534678.342	125	13^20'48.65"	15	14.118	5.7		40
1037	117+036.849	117+047.361	117+056.509	2671006.337	534610.755	80	31^59'08.50"	25	19.660	7.0		40
1038	117+115.543	117+136.817	117+149.508	2670915.833	534618.323	50	67^34'10.30"	25	33.966	7.0	Right	40

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: APRIL, 2020

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 PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

CURVE DETAILS REPORT

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

CONSULTANT : CE TESTING COMPANY PVT. LTD.
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-IIIC/CDR

REVISION MKD. - R0 | SHEET NO. - 02

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

CURVE DETAILS												
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							
1039	117+269.182	117+289.555	117+307.047	2670842.068	534474.854	90	40^01'16.41"	25	37.865	7.0	Right	40
1040	117+358.898	117+428.142	117+460.972	2670873.437	534336.907	80	91^00'36.96"	25	102.074	7.0		40
1041	117+526.991	117+528.428	117+528.956	2670739.627	534308.951	50	30^53'58.76"	25	1.965	7.0	Right	30
1042	117+626.473	117+645.040	117+647.706	2670653.259	534229.252	20	103^48'02.28"	15	21.233	7.0		20
1043	117+699.601	117+799.574	117+739.908	2670570.892	534378.462	20	158^26'35.40"	15	40.307	7.0	Right	20
1044	117+798.545	117+801.853	117+804.767	2670591.586	534217.872	50	24^19'07.84"	15	6.222	7.0	Right	30
1045	117+860.708	118+028.702	117+903.897	2670710.867	534024.451	20	166^41'56.05"	15	43.189	7.0		20
1046	117+951.131	117+955.629	117+959.762	2670555.598	534179.922	60	22^33'58.38"	15	8.631	6.7		30
1047	118+023.268	118+151.119	118+065.099	2670480.973	534361.003	20	162^48'26.24"	15	41.830	7.0	Right	20
1048	118+142.869	118+160.303	118+163.236	2670501.205	534138.868	20	101^19'01.63"	15	20.366	7.0		20
1049	118+255.230	118+279.895	118+296.420	2670367.875	534153.147	60	63^12'23.55"	25	41.190	6.7	Right	30
1050	118+456.857	118+735.092	118+501.829	2670116.157	533764.149	20	171^48'25.62"	15	44.972	7.0	Right	20
1051	118+609.349	118+609.880	118+609.641	2670370.089	534055.243	50	28^58'55.98"	25	0.292	7.0		30
1052	118+661.109	118+766.917	118+701.795	2670518.456	534109.004	20	159^31'43.44"	15	40.686	7.0		20
1053	118+835.476	118+853.852	118+871.480	2670322.052	533941.913	125	23^22'42.55"	15	36.004	5.7		40
1054	118+941.712	118+956.382	118+968.318	2670223.292	533911.698	50	47^40'38.75"	15	26.606	7.0	Right	30
1055	119+022.745	119+031.577	119+037.662	2670189.974	533841.250	40	50^00'53.50"	20	14.917	7.0		30
1056	119+084.037	119+113.030	119+111.440	2670108.521	533819.921	20	121^28'33.33"	15	27.403	7.0		20
1057	119+176.450	119+179.245	119+181.123	2670136.502	533912.586	30	37^34'24.76"	15	4.673	5.9	Right	20
1058	119+217.761	119+220.695	119+222.680	2670121.477	533952.200	30	38^02'29.77"	15	4.919	5.9		20
1059	119+285.767	119+298.437	119+301.900	2670144.839	534027.343	30	78^33'30.92"	25	16.133	5.9	Right	20
1060	119+383.373	119+405.110	119+422.667	2670043.207	534083.012	60	51^50'49.11"	15	39.294	6.7	Right	30
1061	119+521.097	119+546.923	119+546.918	2669908.954	534025.651	20	116^56'39.71"	15	25.821	7.0		20
1062	119+596.889	119+607.095	119+613.632	2669914.668	534111.465	30	60^37'28.67"	15	16.743	5.9	Right	20
1063	119+669.582	119+684.077	119+687.469	2669847.170	534155.609	20	94^12'51.75"	15	17.887	7.0		20
1064	119+725.583	119+734.598	119+740.539	2669884.597	534204.564	30	57^12'37.07"	15	14.955	5.9	Right	20
1065	119+782.632	119+791.608	119+797.528	2669864.234	534261.091	30	57^05'51.72"	15	14.896	5.9	Right	20
1066	119+887.020	119+901.603	119+914.069	2669754.121	534286.697	80	37^16'39.80"	25	27.050	7.0		40
1067	119+997.477	120+004.106	120+007.730	2669687.390	534367.271	40	50^29'46.10"	25	10.253	7.0		30
1068	120+102.536	120+178.907	120+140.798	2669720.905	534541.890	20	152^35'02.99"	15	38.262	7.0	Right	20
1069	120+219.643	120+231.511	120+232.368	2669617.394	534410.732	25	86^27'30.78"	25	12.725	7.0		20
1070	120+372.343	120+434.541	120+424.829	2669441.505	534532.701	40	125^18'55.67"	35	52.487	7.0	Right	30
1071	120+489.542	120+494.238	120+497.842	2669442.829	534401.100	60	31^47'55.54"	25	8.300	6.7		30
1072	120+625.411	120+643.176	120+656.155	2669365.059	534272.800	60	53^13'50.87"	25	30.743	6.7		30
1073	120+717.088	120+738.541	120+740.329	2669265.376	534263.119	20	109^33'12.21"	15	23.241	7.0	Right	20
1074	120+876.531	120+886.743	120+896.779	2669336.585	534111.105	150	13^27'50.69"	15	20.249	4.7		40
1075	120+979.610	120+986.809	120+987.915	2669356.804	534012.922	40	62^01'49.40"	35	8.305	7.0		30
1076	121+113.777	121+137.588	121+138.472	2669235.941	533912.916	20	113^43'01.69"	15	24.695	7.0	Right	20
1077	121+199.560	121+215.889	121+219.036	2669326.393	533867.468	20	98^45'54.55"	15	19.476	7.0		20
1078	121+380.354	121+391.419	121+401.815	2669216.963	533713.725	100	23^45'18.62"	20	21.461	7.0	Right	40
1079	121+606.404	121+623.652	121+626.624	2669169.784	533485.652	20	100^53'54.46"	15	20.220	7.0		20
1080	121+692.274	121+697.774	121+703.199	2669088.166	533519.602	150	9^54'09.24"	15	10.925	4.7		40

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: APRIL, 2020

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 PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

CURVE DETAILS REPORT

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

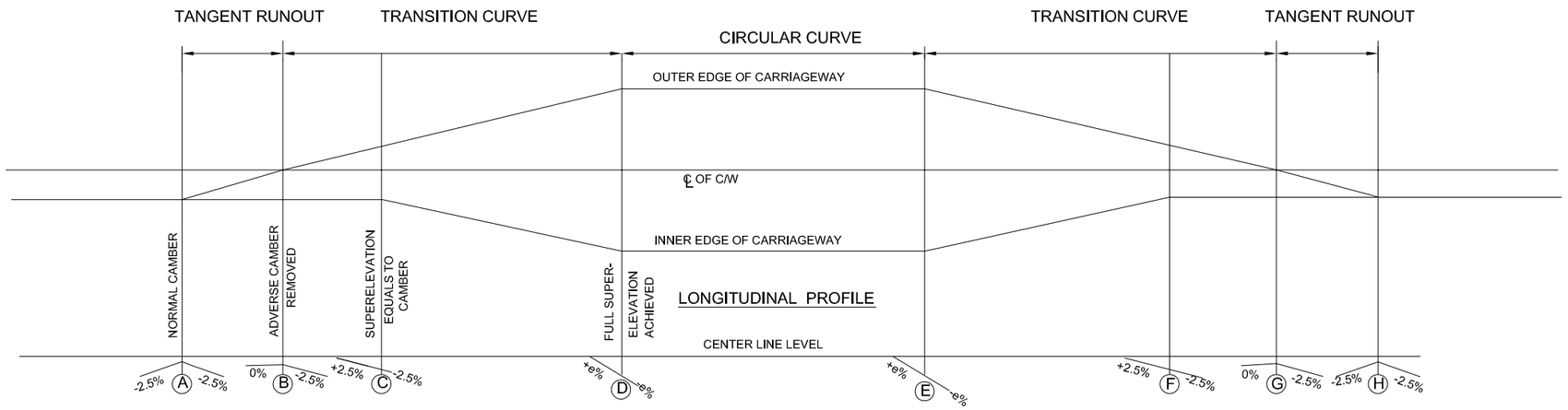
CONSULTANT :
CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road
Kolkata - 700092.

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

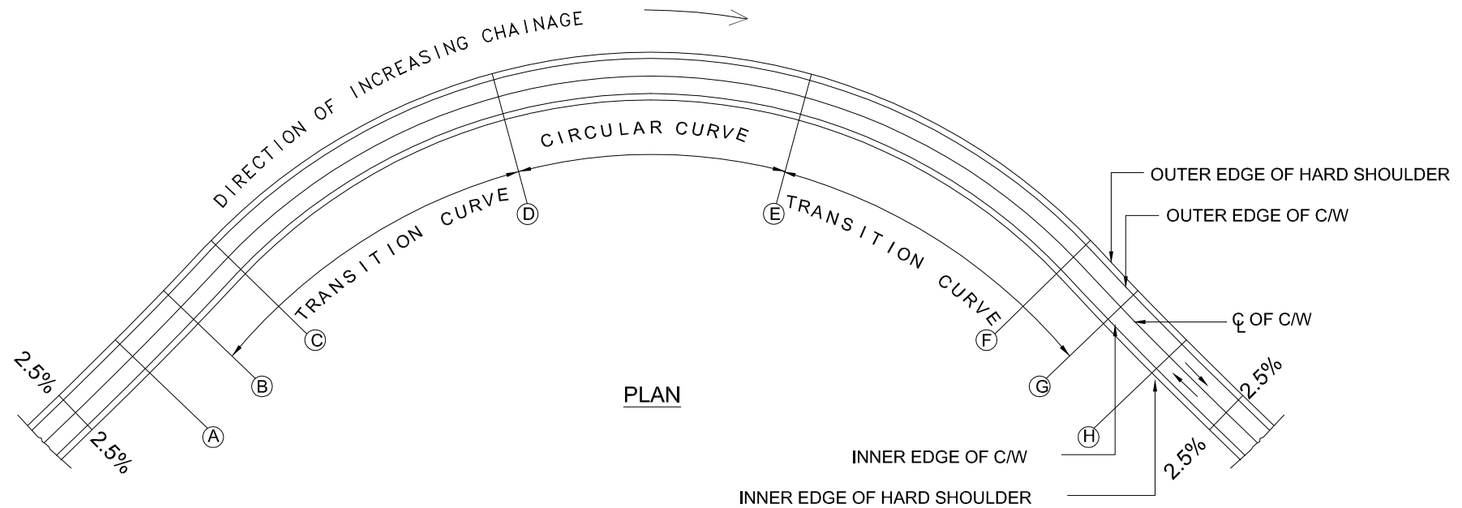
REVISION MKD. - R0 | SHEET NO. - 03

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)

					Scale :- N.T.S	CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building,3rd Floor, 4 Parliament Street, New Delhi - 110001	DETAILS OF CURVE COMPONENT
					DATE: APRIL, 2020	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 PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)	SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT / PACKAGE - IIIC
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.			
REVISIONS							

CONSULTANT : CE TESTING COMPANY PVT. LTD.
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-IIIC/MISC-1

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

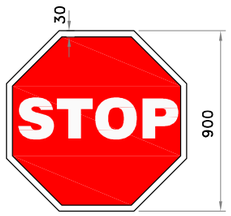


Fig. 14.01
STOP SIGNAL

Fig. 14.02
GIVE WAY SIGN

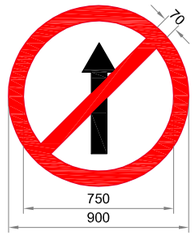


Fig. 14.19
NO ENTRY

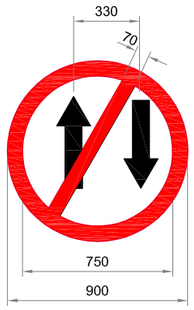


Fig. 14.20
ONE WAY SIGNS

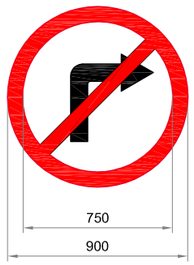


Fig. 14.22
RIGHT TURN PROHIBITED

Fig. 14.21
LEFT TURN PROHIBITED

Fig. 14.24
U - TURN PROHIBITED

Fig. 14.23
OVERTAKING PROHIBITED

Fig. 14.18
HORN PROHIBITED

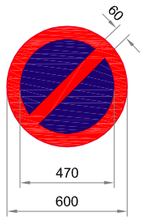


Fig. 14.29
NO PARKING

Fig. 14.28
NO STOPPING AND
NO STANDING

Fig. 14.37
SPEED LIMIT

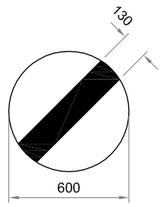


Fig. 14.40
RESTRICTION END

Fig. 14.48
COMPULSORY
KEEP LEFT

Fig. 14.46
COMPULSORY TURN
RIGHT AHEAD

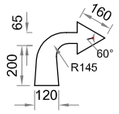


Fig. 14.47
COMPULSORY TURN
LEFT AHEAD

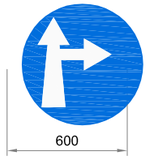


Fig. 14.42
COMPULSORY AHEAD
OR TURN RIGHT

Fig. 14.5
PASS EITHER
SIDE

Fig. 14.43
COMPULSORY AHEAD
OR TURN LEFT

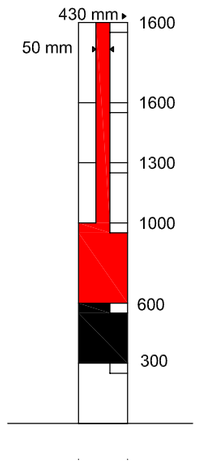


Fig. 18.10
FLOOD GAUGE

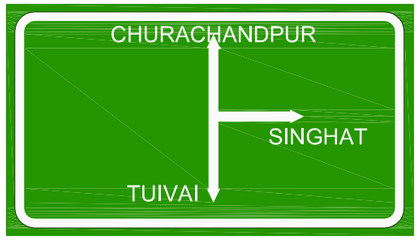


Fig. 16.03
ADVANCE DIRECTION SIGN

Fig. 16.05
REASSURANCE SIGN

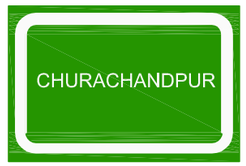


Fig. 16.06
PLACE IDENTIFICATION SIGN

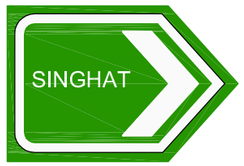


Fig. 16.04
PLACE IDENTIFICATION SIGN

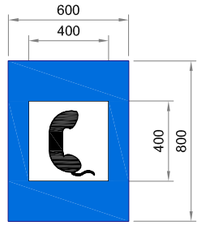


Fig. 17.08
PUBLIC TELEPHONE

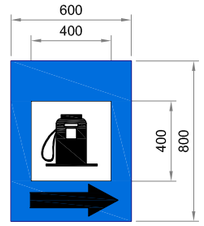


Fig. 17.06
FILLING STATION

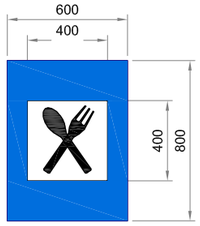


Fig. 17.01
EATING PLACE

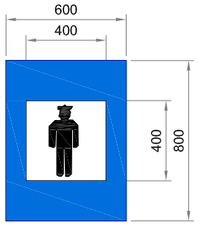


Fig. 17.13
POLICE STATION

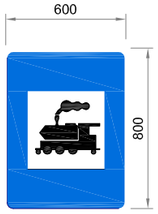


Fig. 17.16
RAILWAY STATION

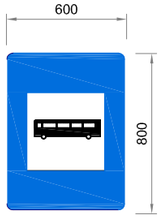


Fig. 17.35
BUS STOP

Fig. 20.02
NATIONAL HIGHWAY
ROUTE MARKER SIGN

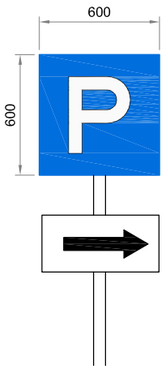


Fig. 18.01
PARKING THIS SIDE

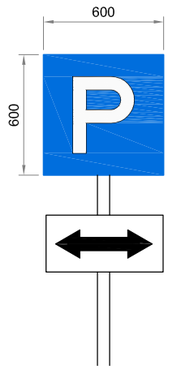


Fig. 14.01
PARKING BOTH SIDE

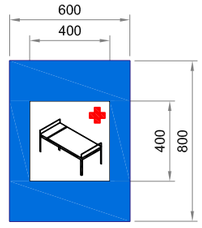


Fig. 17.07
HOSPITAL

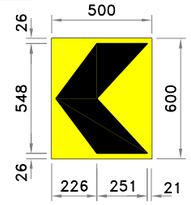


Fig. 15.72
SINGLE CEVRON (NORMAL)

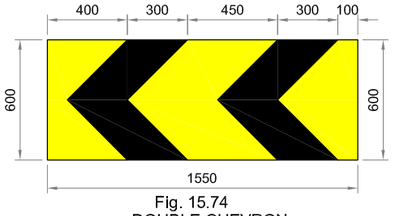


Fig. 15.74
DOUBLE CHEVRON

NOTE:

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

					Scale :- N.T.S	CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building,3rd Floor, 4 Parliament Street, New Delhi - 110001	TYPICAL DETAILS OF ROAD SIGNS
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.	DATE: APRIL, 2020	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 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 - IIIC

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-IIIC/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

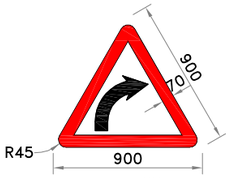


Fig. 15.02
RIGHT HAND CURVE

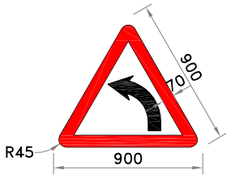


Fig. 15.01
LEFT HAND CURVE

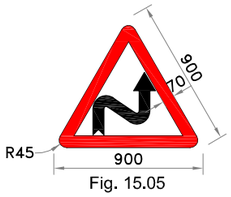


Fig. 15.05
RIGHT REVERSE BEND

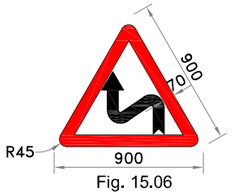


Fig. 15.06
LEFT REVERSE BEND

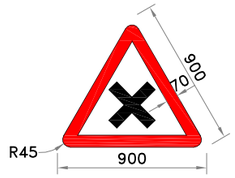


Fig. 15.14
CROSS ROAD

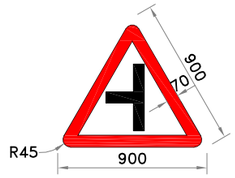


Fig. 15.10
SIDE ROAD LEFT

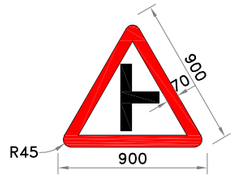


Fig. 15.09
SIDE ROAD RIGHT

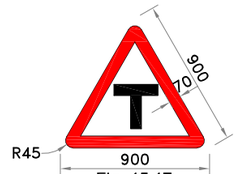


Fig. 15.17
T-INTERSECTION

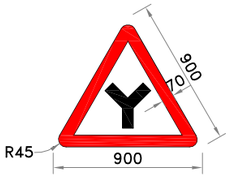


Fig. 15.13
Y-INTERSECTION

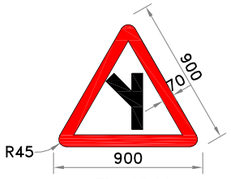


Fig. 15.11
Y-INTERSECTION

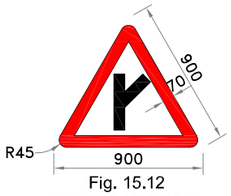


Fig. 15.12
Y-INTERSECTION

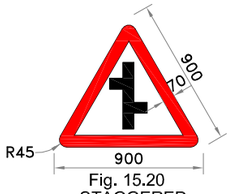


Fig. 15.20
STAGGERED
INTERSECTION

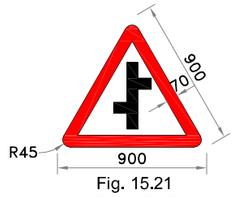


Fig. 15.21
STAGGERED
INTERSECTION

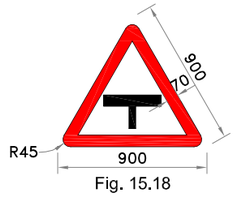


Fig. 15.18
T- INTERSECTION
MAJOR ROAD AHEAD

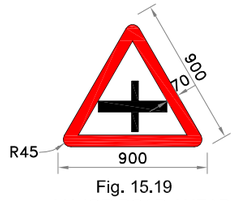


Fig. 15.19
MAJOR ROAD AHEAD

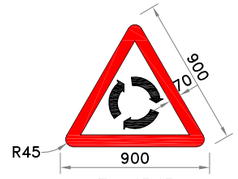


Fig. 15.15
ROUND ABOUT

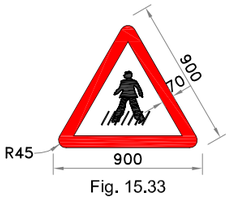


Fig. 15.33
PEDESTRIAN CROSSING

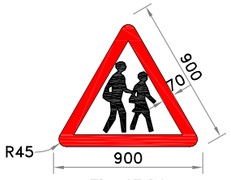


Fig. 15.34
SCHOOL

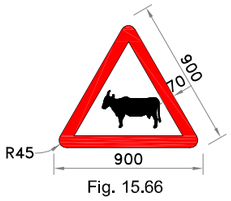


Fig. 15.66
CATTLE

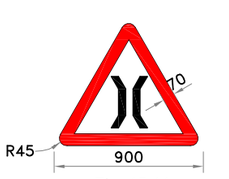


Fig. 15.11
NARROW BRIDGE

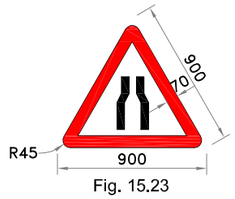


Fig. 15.23
NARROW ROADS

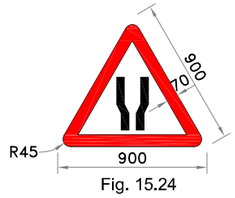


Fig. 15.24
ROAD WIDENS AHEAD

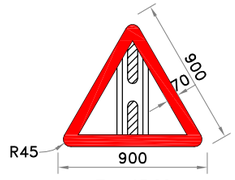


Fig. 15.32
GAP IN MEDIAN

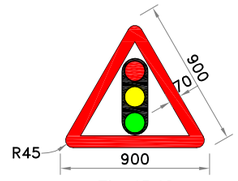


Fig. 15.16
TRAFFICE SIGNAL

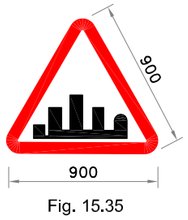


Fig. 15.35
BUILT-UP AREA

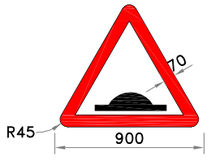


Fig. 15.49
SPEED BREAKER

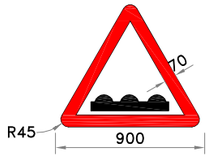


Fig. 15.49
RUMBLE STRIP

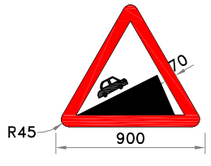


Fig. 15.26
STEEP ASCENT

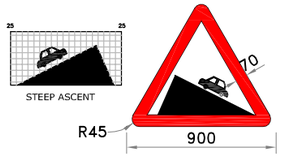


Fig. 15.27
STEEP DESCENT

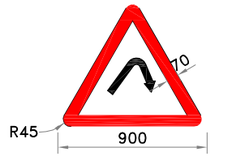


Fig. 15.03
RIGHT HAIRPIN BEND

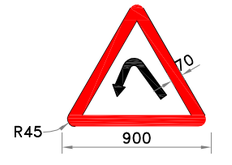


Fig. 15.04
LEFT HAIRPIN BEND

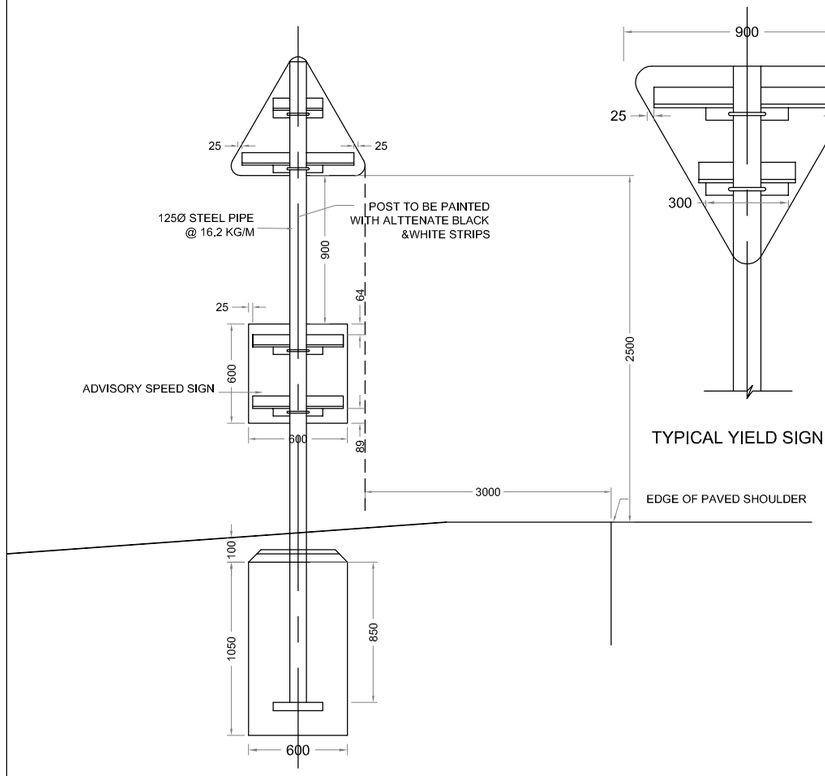
NOTE:

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

					Scale :- N.T.S	CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building,3rd Floor, 4 Parliament Street, New Delhi - 110001	TYPICAL DETAILS OF ROAD SIGNS
					DATE: APRIL, 2020	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 PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)	SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.			PACKAGE - IIIC
REVISIONS							

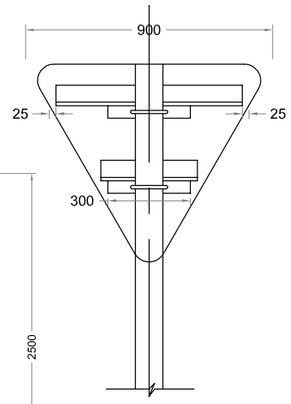
CONSULTANT :
CE TESTING COMPANY PVT. LTD.
124-A, N.S.C. Bose Road,
Kolkata - 700092

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

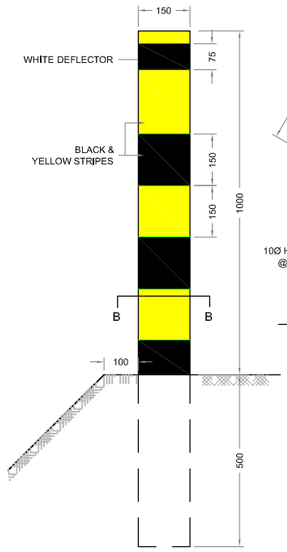


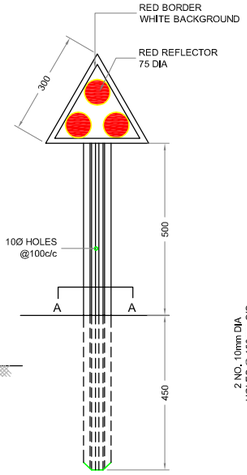
TYPICAL WARNING SIGN

SCALE 1:20

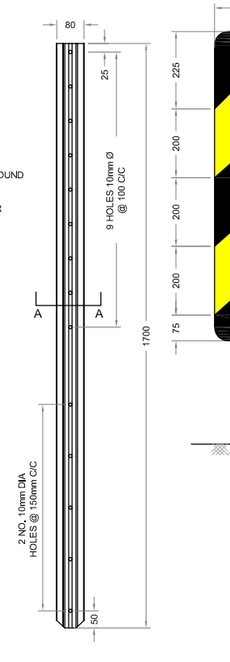


TYPICAL YIELD SIGN





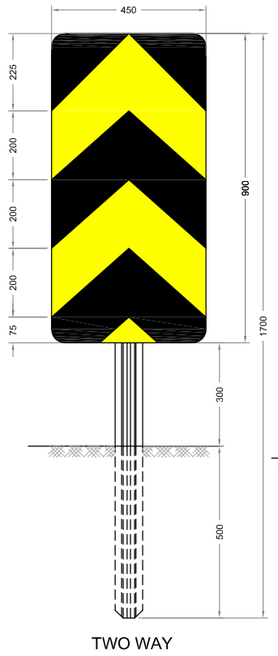
OBJECT MARKER



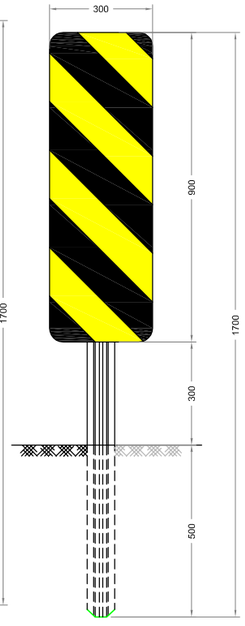
GALVANISED STEEL POST
(1700 FOR HAZARD MARKER
& 1200 FOR OBJECT MARKER)

SCALE 1:10

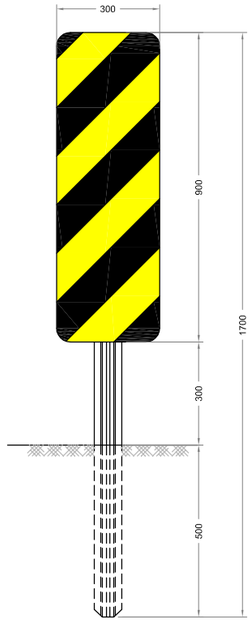
ROADWAY INDICATORS
(TO BE INSTALLED AT 50MC/C
ON BOTH EDGES OF ROAD WAY
ON EMBANKMENT HEIGHT LESS THAN
3M AND AT CARRIAGE WAY TRANSITIONS)
SCALE 1:10



TWO WAY

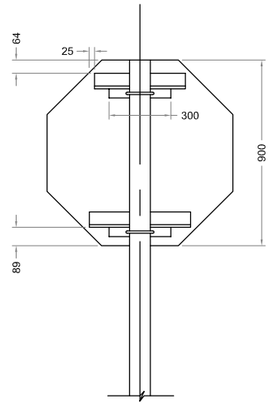


LEFT

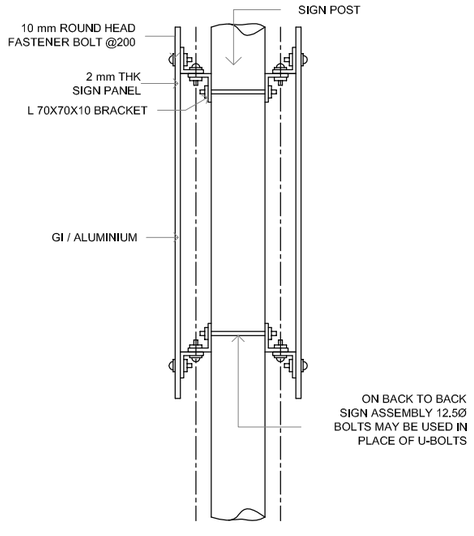


RIGHT

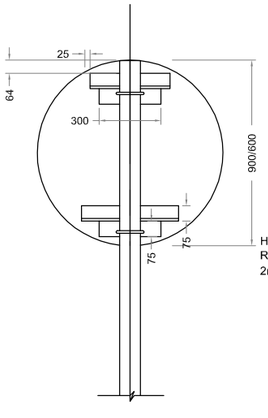
HAZZARD MARKERS
SCALE 1:10



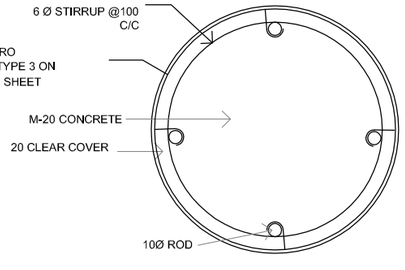
TYPICAL STOP SIGN



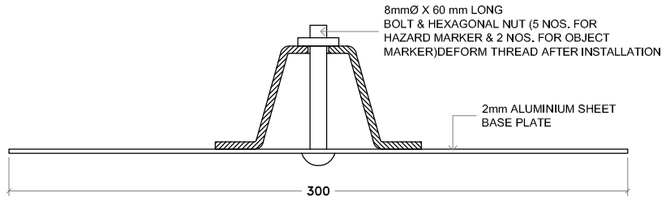
BACK TO BACK SIGN ASSEMBLY



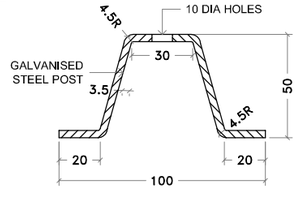
TYPICAL NO ENTRY SIGN



SECTION B-B
SCALE 1:2.5



MOUNTING DETAILS OF BACK PLATE
SCALE 1:2



SECTION A-A'
SCALE 1:2

NOTES:-

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

					Scale :- N.T.S	CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building,3rd Floor, 4 Parliament Street, New Delhi - 110001
					DATE: APRIL, 2020	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 PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.		
REVISIONS						

TYPICAL DETAILS OF ROAD SIGNS

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

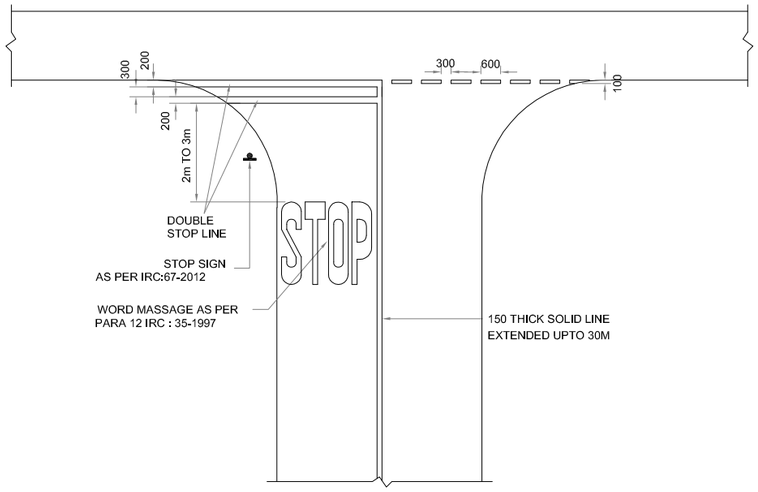
PACKAGE - IIIC

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

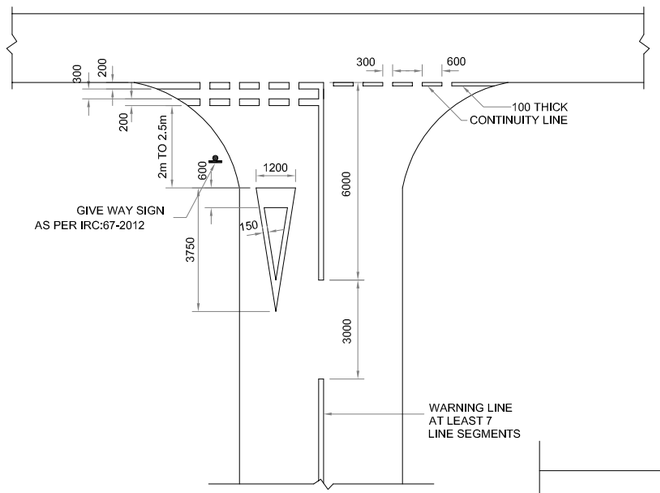
DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IIIC/MISC-2

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

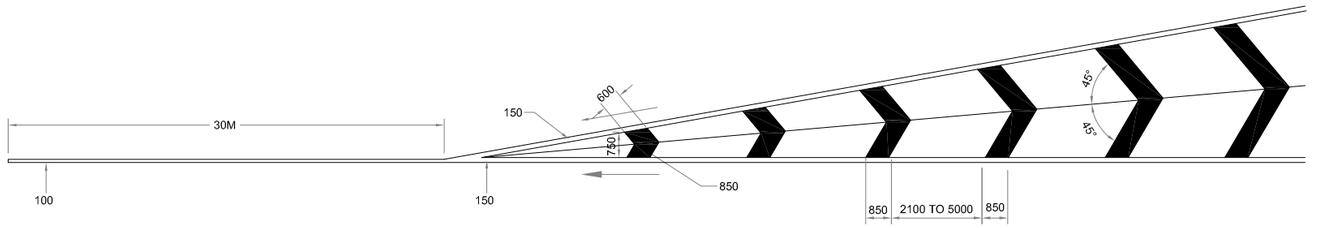
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS

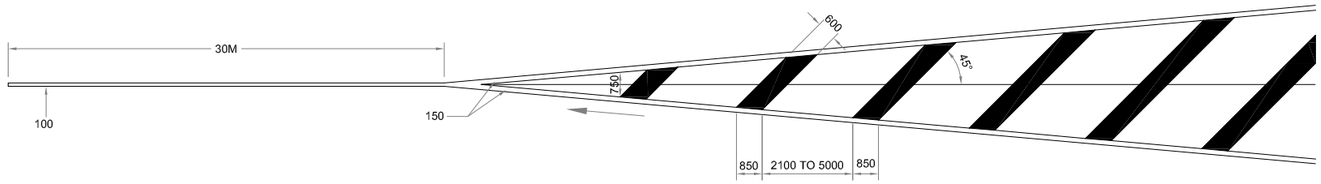


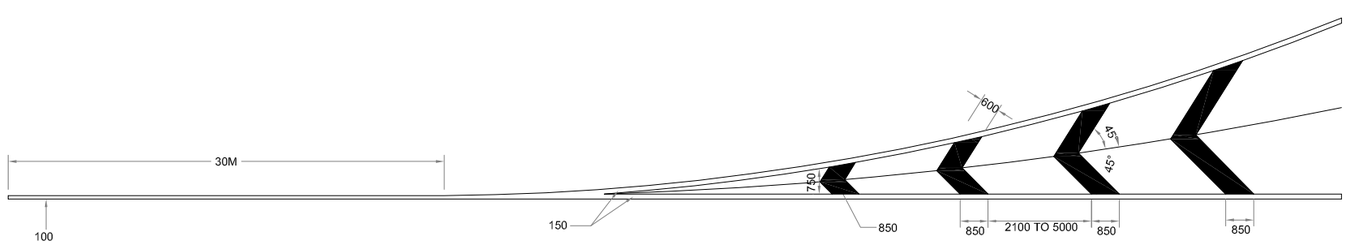
STOP LINES



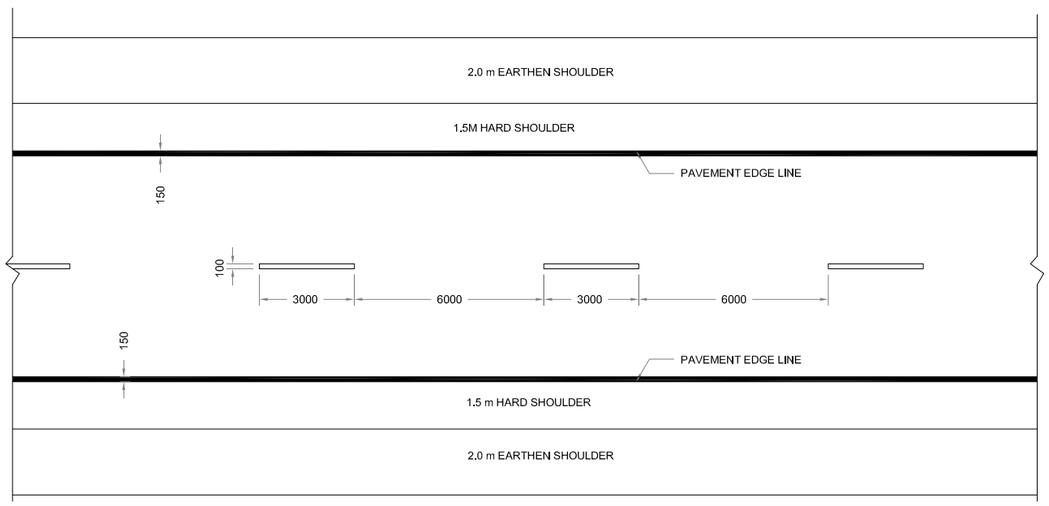
GIVEWAY LINES







DETAILS OF DIAGONAL AND CHEVRON MARKINGS



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: APRIL, 2020

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 PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

PAVEMENT MARKING

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

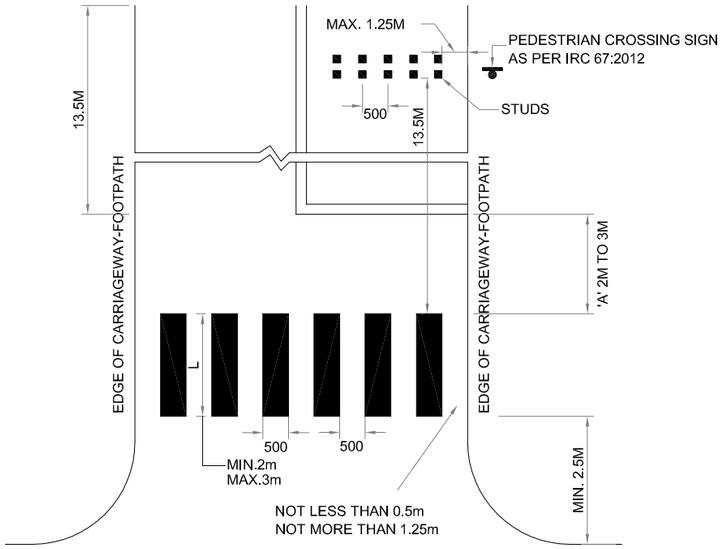
PACKAGE - IIIC

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-IIIC/MISC-3

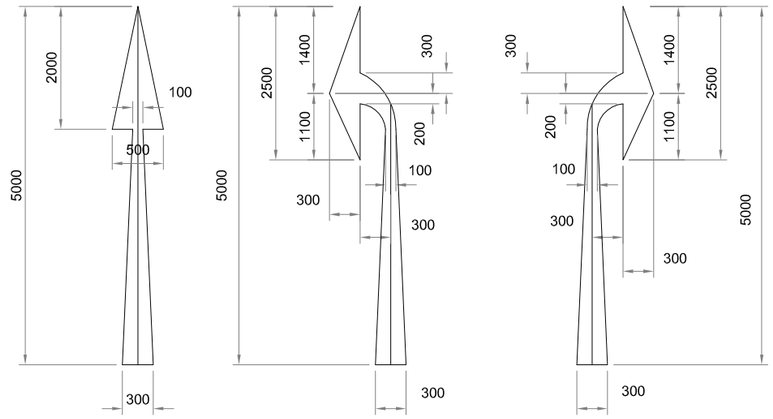
REVISION MKD. - R0 | SHEET NO. - 01 OF 02

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



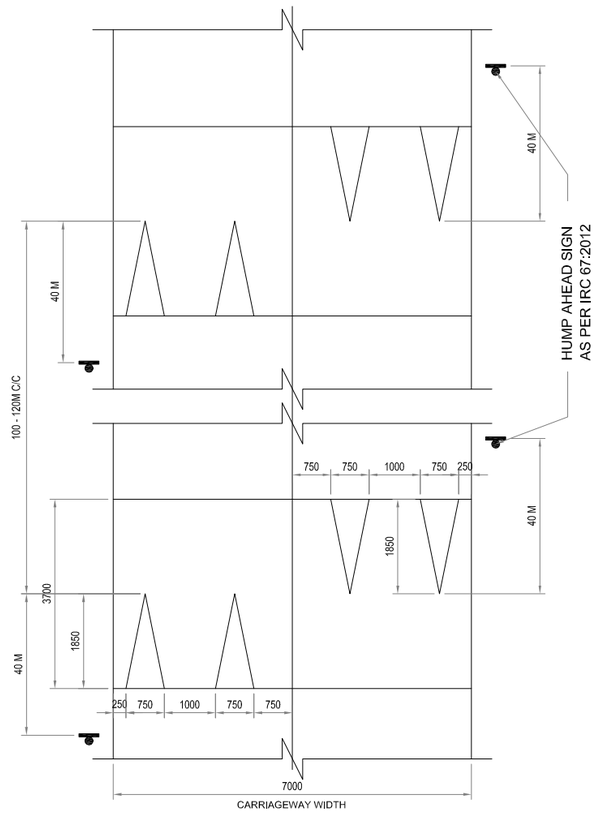
DETAILS OF PEDESTRIAN CROSSING MARKING

SCALE=1:80



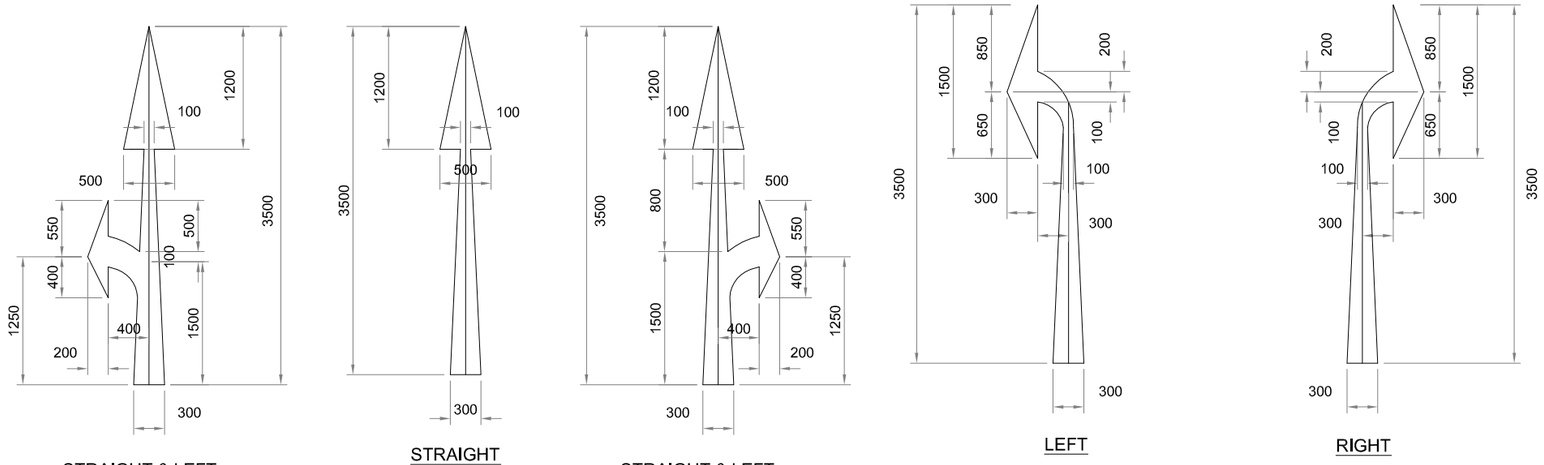
ARROW MARKINGS FOR ROUTE DIRECTION FOR DESIGN SPEED MORE THAN 50 Km/Hr

SCALE=1:60



DETAILS OF SPEED BREAKERS MARKING

SCALE=1:80



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: APRIL, 2020

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
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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 PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

PAVEMENT MARKING

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

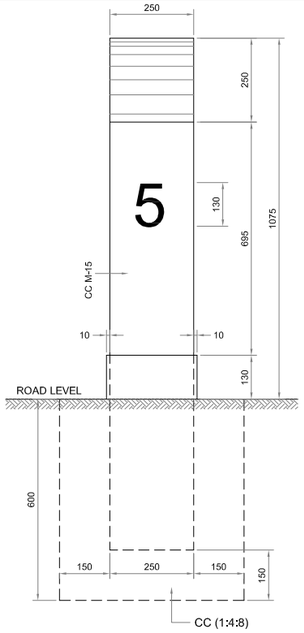
CONSULTANT : CETEST Engineering Consultants
An ISO 9001, 14001 & OHSAS 18001 Certified Company

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

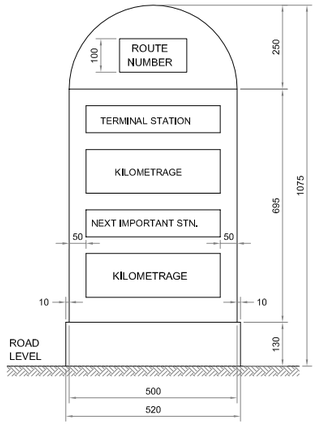
DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IIIC/MISC-3

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

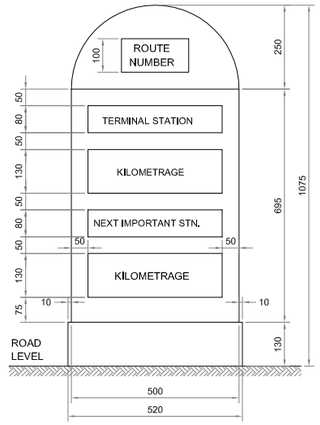
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS



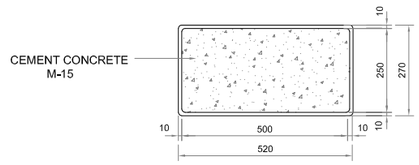
SIDE ELEVATION



FACE - 1

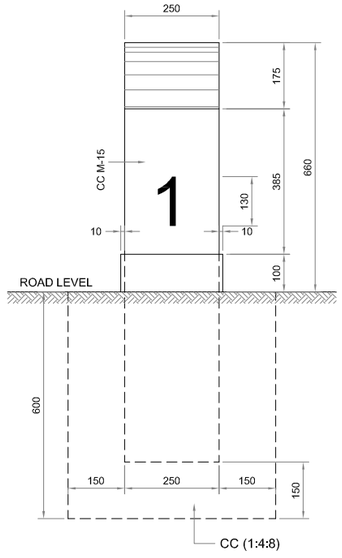


FACE - 2

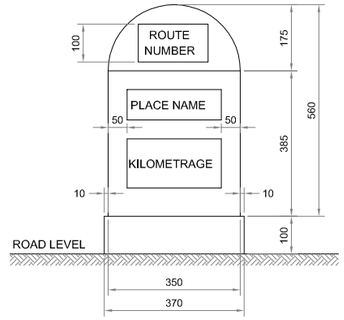


SECTIONAL PLAN

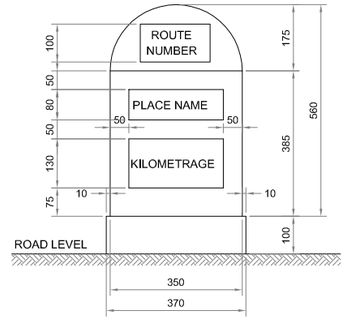
TYPE DESIGN FOR THE 5TH KILOMETRE STONE



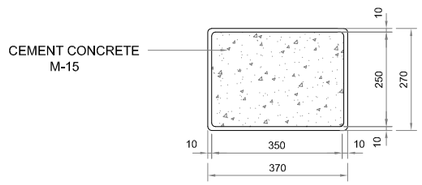
SIDE ELEVATION



FACE - 1

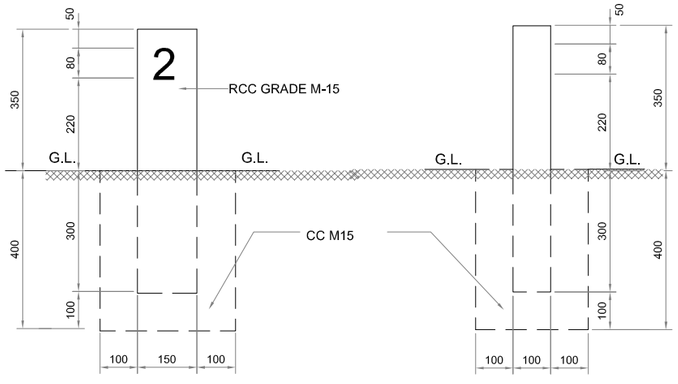


FACE - 2



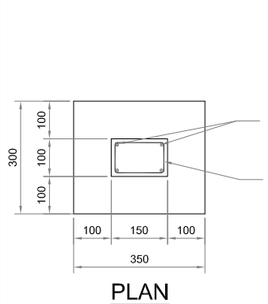
SECTIONAL PLAN

TYPE DESIGN FOR THE ORDINARY KILOMETRE STONE

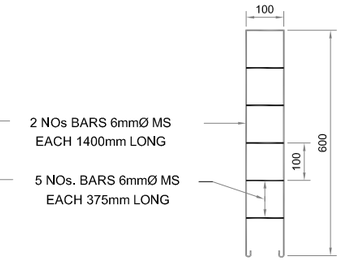


FRONT ELEVATION

SIDE ELEVATION

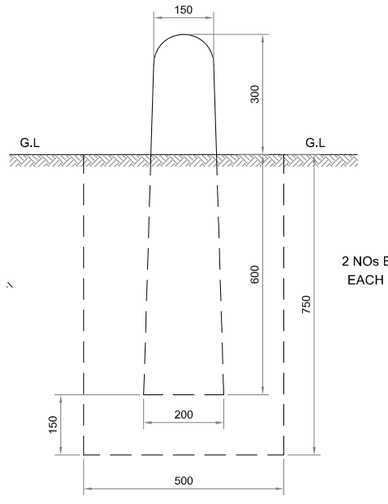


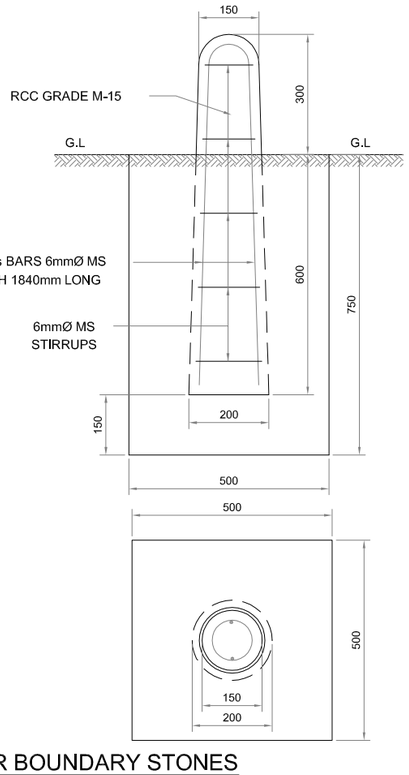
PLAN



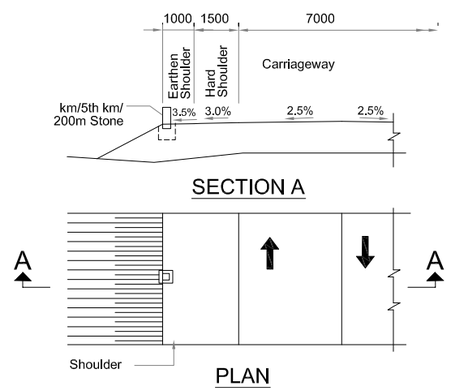
SCHEDULE OF REINFORCEMENT

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: APRIL, 2020

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 PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

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

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

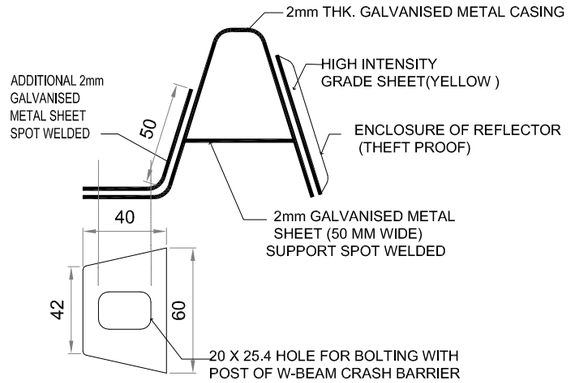
PACKAGE - IIIC

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-IIIC/MISC-4

REVISION MKD. - R0 | SHEET NO. - 01

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



GUARD RAIL REFLECTOR

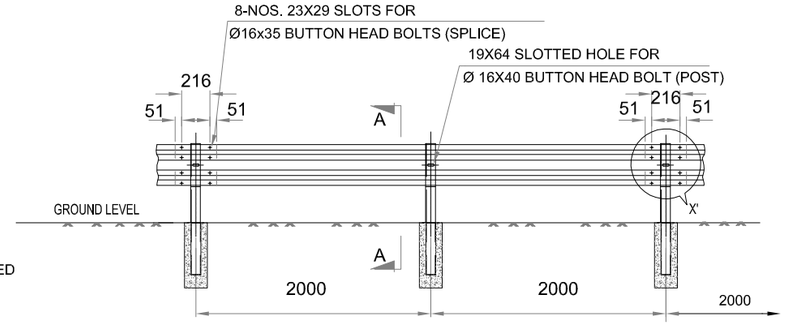
SHAPE : Equilateral Trapezium

DIMENSIONS :

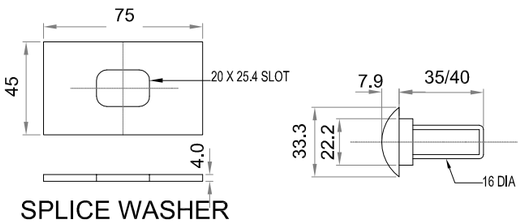
FRONT CASING
- Top: 95 mm
- Bottom: 70 mm
- Height: 80 mm

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

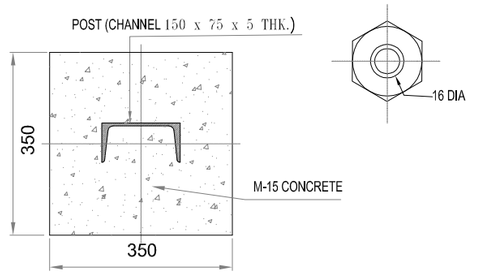
GUARD RAIL REFLECTOR WILL BE BOLTED REPLACING SPLICE WASHER EVERY 10 POSTS INTERVAL



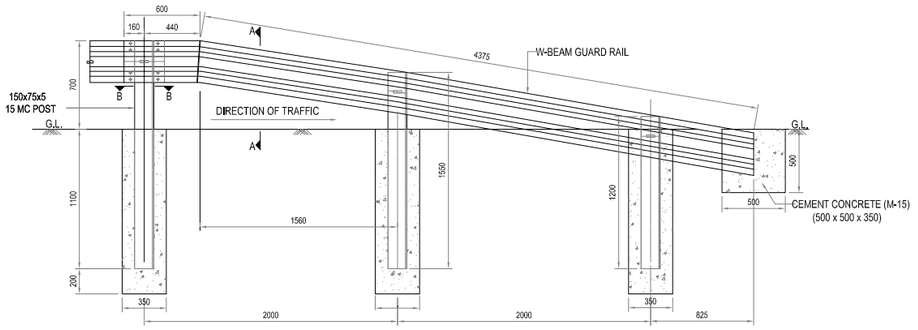
ELEVATION OF SINGLE SIDED GUARD RAIL



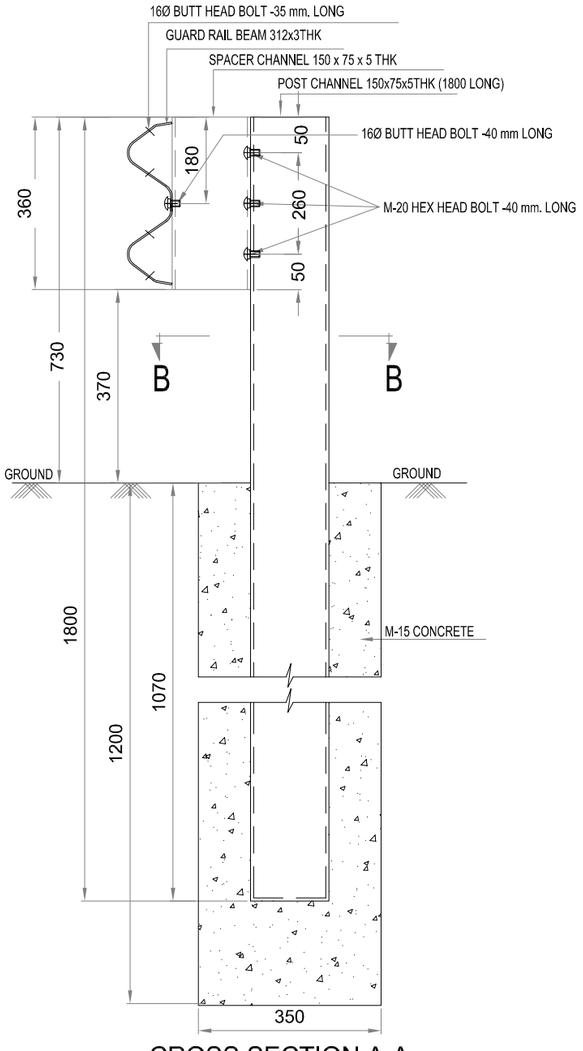
SPLICE WASHER



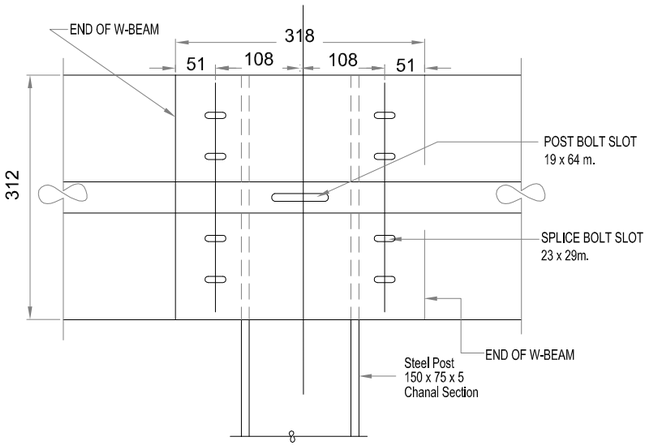
SECTION `B-B'



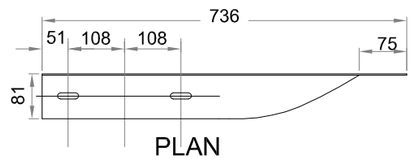
ELEVATION SHOWING SINGLE SIDED GAURD RAIL SYSTEM - END SIDE ARRANGEMENT



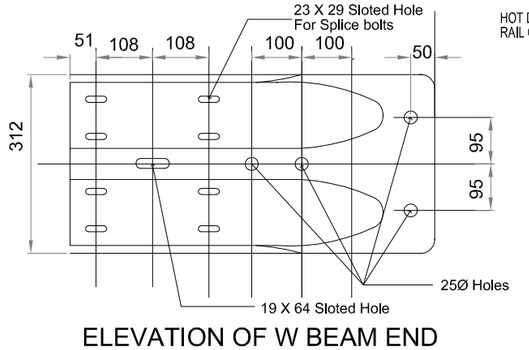
CROSS SECTION A-A



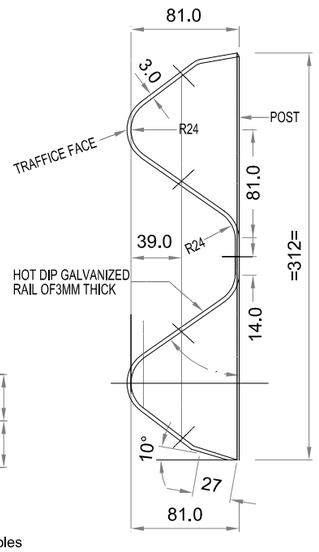
DETAILS OF 'X'



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: APRIL, 2020

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 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

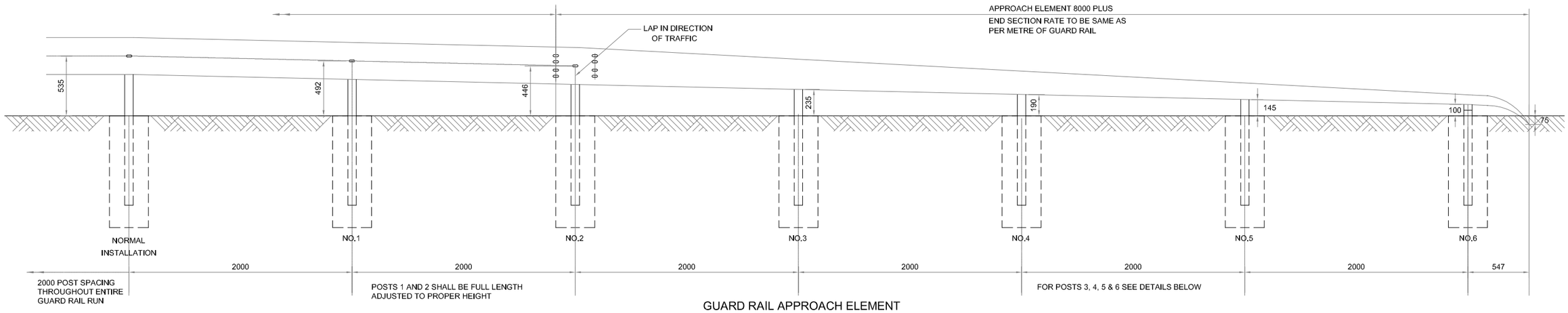
PACKAGE - IIIC

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-IIIC/MISC-5

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

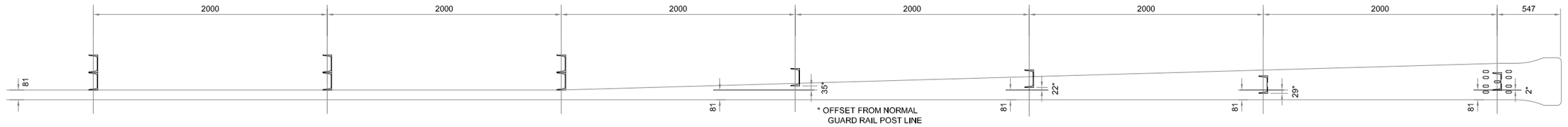
DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
S.MANDAL	B.DAS	S.SADHU	A.K.DAS



GUARD RAIL APPROACH ELEMENT

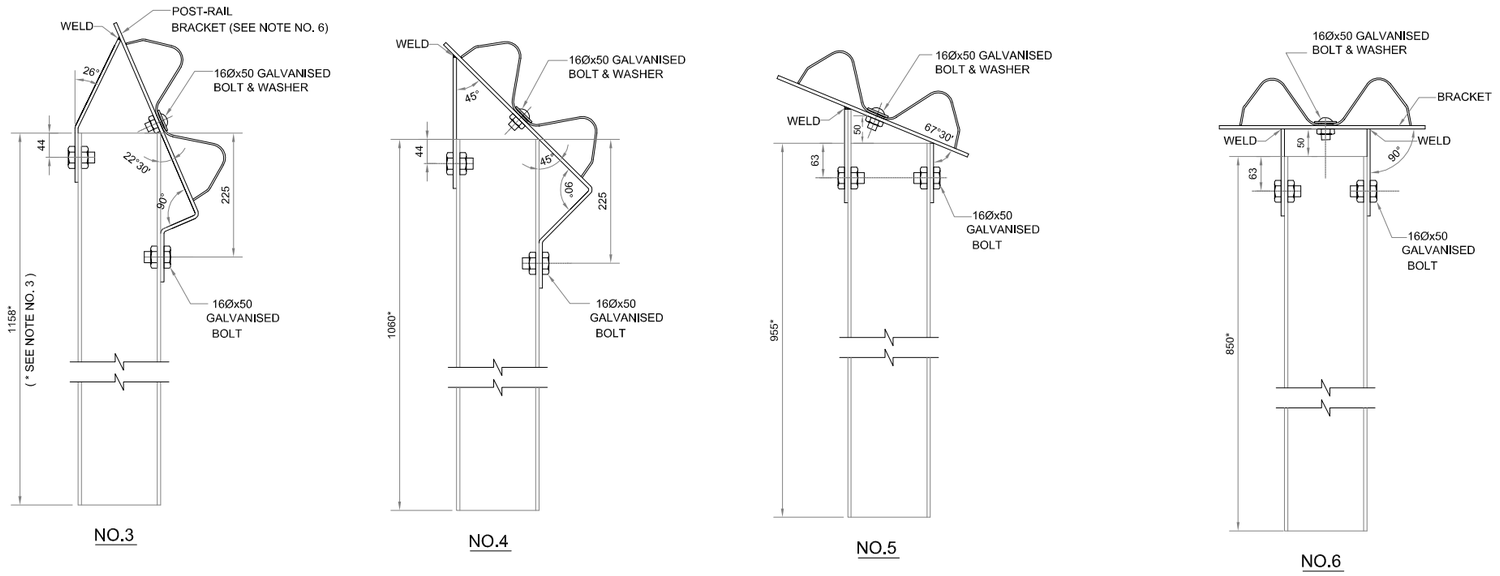
ELEVATION

(SCALE 1:25)



PLAN

(SCALE 1:25)



(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: APRIL, 2020

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 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 - IIIC

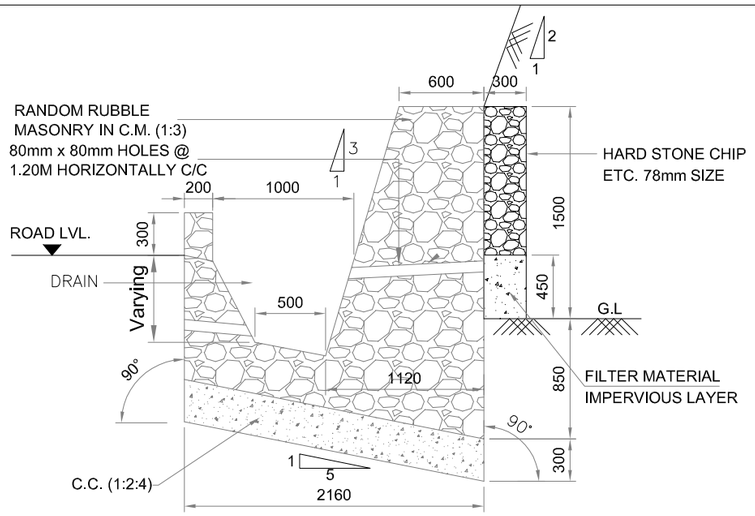
CONSULTANT : CETEST Engineering Consultants (An ISO 9001, 14001 & OHSAS 18001 Certified Company)

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-IIIC/MISC-5

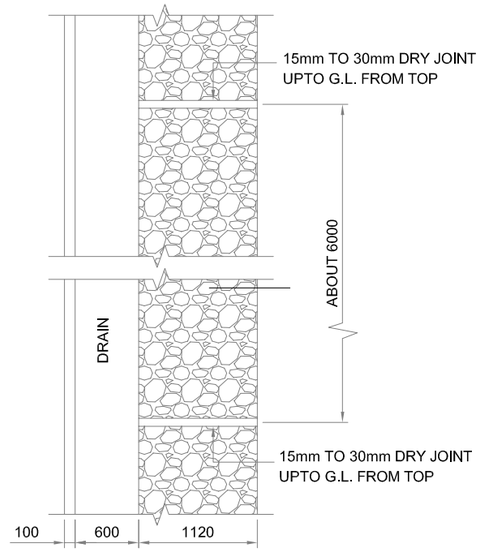
REVISION MKD. - R0 | SHEET NO. - 02 OF 02

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)



PLAN OF BREAST WALL

(AT GROUND LEVEL)

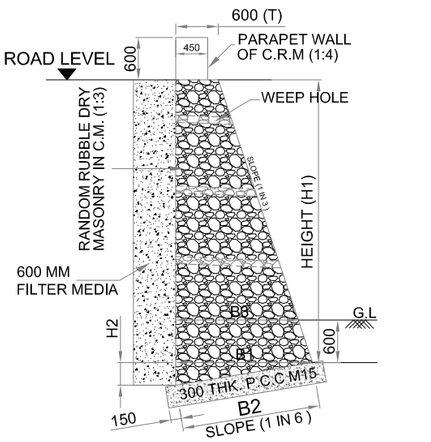
(SCALE 1:30)

LOCATION OF BREAST WALL

Chainage		Side	Net Length (m)
From (m)	To (m)		
103800	103850	Both	100
104320	104370	Both	95
104730	104780	Single	50
112740	112875	Single	135
Total Length =			380 m

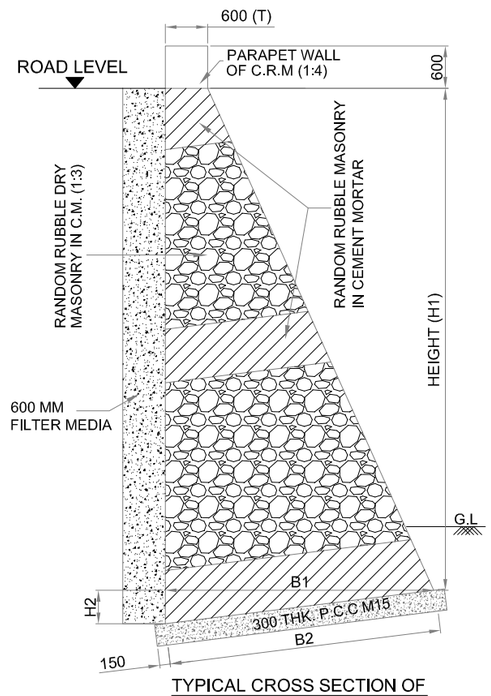
LOCATION OF RETAINING WALL

Chainage		Side	Net Length (m)	Average Height (m)
From	To			
104000	104100	single	100	4
104100	104140	both	80	4
104730	104780	single	50	4
105125	105200	single	75	3
105200	105250	single	47	8
105250	105350	single	100	6
105450	105525	single	75	6
105640	105725	single	82	6
105725	105850	single	125	2
105850	105900	single	47	4
105950	106150	single	200	6
106225	106300	single	75	3
106430	106500	single	70	2
106565	106725	single	157	4
107250	107290	single	37	2
109590	109625	single	32	4
109720	109850	single	127	2
110750	110800	single	47	2
111050	111100	single	43	2
111440	111580	single	137	2
111670	111720	single	50	2
111740	111900	single	157	2
112025	112110	single	82	2
112150	112425	single	272	2
112575	112630	single	52	2
112690	112740	single	47	4
112875	112975	single	96	2
113050	113090	single	37	6
113090	113185	single	95	2
113340	113370	single	30	2
113420	113440	single	20	2
113575	113650	single	75	2
113775	114175	single	392	3
114260	114435	single	170	4
114700	114765	single	65	3
115015	115230	single	205	2
115600	115680	single	77	4
118020	118080	single	60	8
118080	118175	single	95	6
118175	118275	single	100	4
118670	118700	single	27	3
118700	118725	both	50	3
118725	119275	single	545	2
119360	119475	single	115	2
119540	119750	single	207	2
119825	119875	single	50	2
120225	120450	single	145	6
120600	120725	single	121	4
120820	120870	single	50	2
121100	121160	single	56	2
121250	121300	single	50	2
121370	121475	single	102	2
121620	121769	single	149	3
Total Length =			5557	



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)

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: APRIL, 2020

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

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DETAILS OF RETAINING WALL, TOE WALL & BREAST WALL

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

PACKAGE - IIIB

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

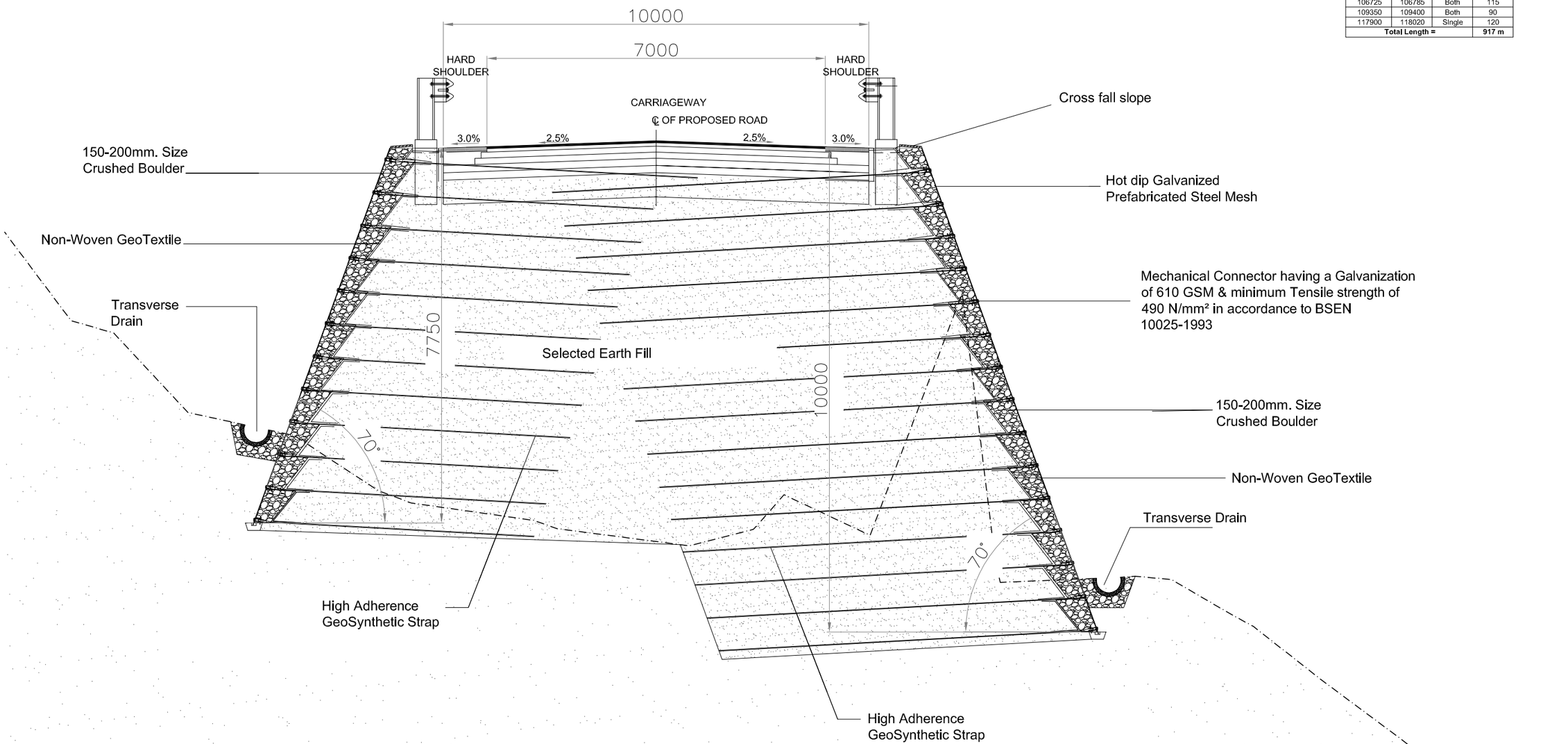
DWG NO :- CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IIIB/MISC- 06

REVISION MKD. - R0 | SHEET NO. - 01

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

COMPOSITE RE WALL

Chainage		Side	Net Length (m)
From (m)	To (m)		
104780	105125	Single	340
105350	105450	Single	97
105525	105600	Single	75
105600	105640	Both	80
106725	106785	Both	115
109350	109400	Both	90
117900	118020	Single	120
Total Length =			917 m



COMPOSITE RE WALL ON THE BOTH SIDE

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: APRIL, 2020

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DETAILS OF COMPOSITE RE WALL

SUBMISSION TYPE :
FINAL DETAILED PROJECT REPORT

PACKAGE - IIIB

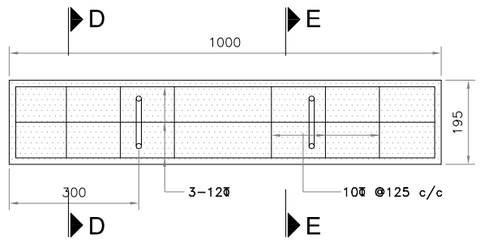
CONSULTANT :
CETEST Engineering Consultants
An ISO 9001, 14001 & OHSAS 18001 Certified Company

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-IIIB/MISC- 06

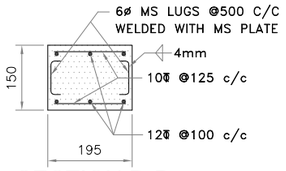
REVISION MKD. - R0 | SHEET NO. - 02

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



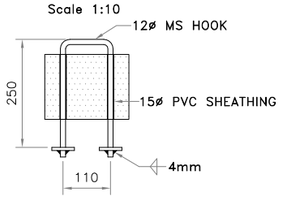
SECTIONAL PLAN OF PRECAST SLAB

Scale 1:10



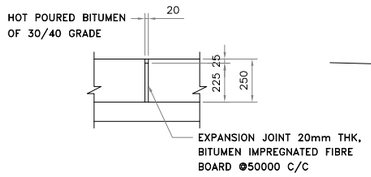
SECTION D-D

Scale 1:10



SECTION E-E

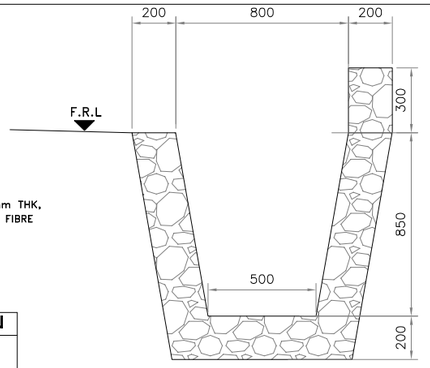
Scale 1:10



DETAIL OF EXP. JOINT

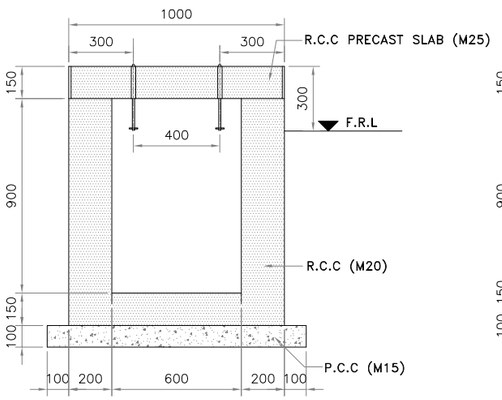
Scale 1:25

LOCATION OF RCC COVER DRAIN			
Chainage		Length (m)	Side
From (m)	To (m)		
108200	109350	1131	Both
Total = 2262 m			

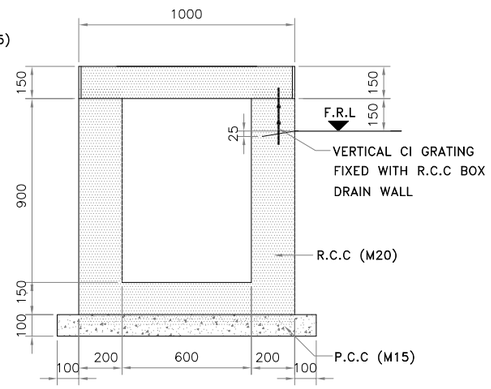


TYPICAL DETAILS OF RR
MASONRY TRAPEZOIDAL DRAIN

Scale 1:20

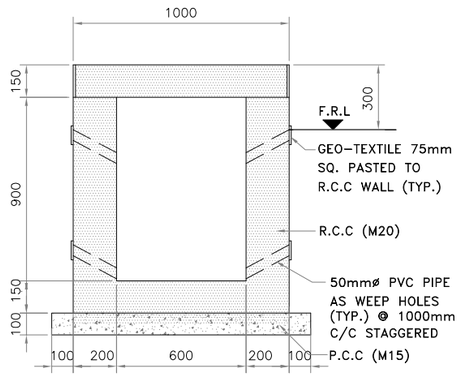


SECTION A-A



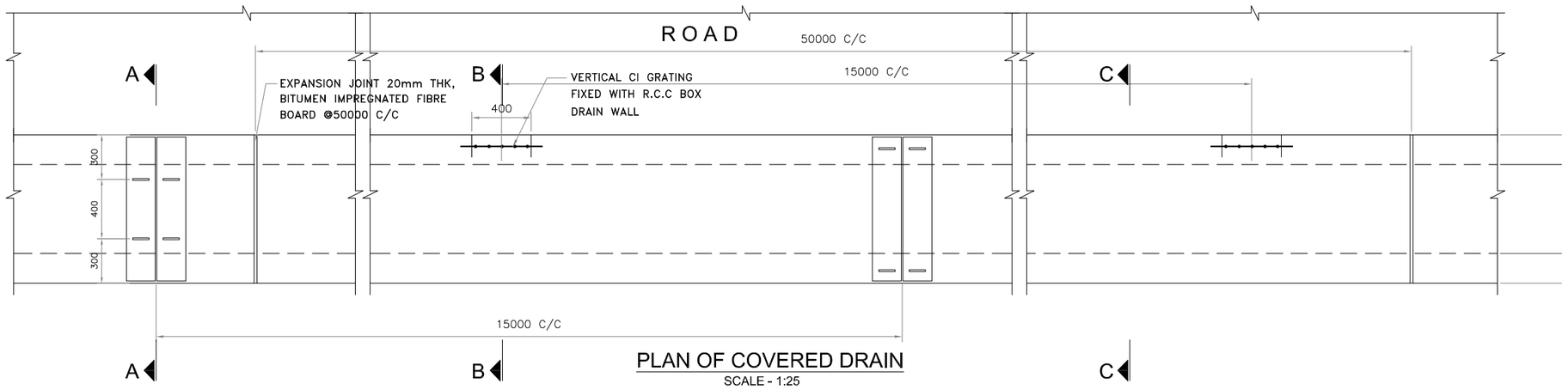
SECTION B-B

Scale 1:20



SECTION C-C

Scale 1:20



PLAN OF COVERED DRAIN

SCALE - 1:25

LOCATION OF TRAPEZOIDAL DRAIN

Chainage		Side	Net Length (m)
From (m)	To (m)		
103525	103800	Both	531
103850	104000	Both	295
104000	104100	Single	100
104140	104320	Both	355
104370	104475	Both	210
104475	104630	Single	155
104630	104730	Both	195
104780	105125	Single	340
105125	105200	Single	75
105200	105250	Single	47
105250	105350	Single	100
105350	105450	Single	97
105450	105525	Single	75
105525	105600	Single	75
105640	105725	Single	82
105725	105850	Single	125
105850	105900	Single	47
105900	105950	Single	50
105950	106150	Single	200
106150	106225	Both	145
106225	106300	Single	75
106300	106430	Single	127
106430	106500	Single	70
106500	106565	Single	65
106565	106725	Single	157
106785	106850	Both	130
106850	107250	Single	395
107250	107290	Single	37
107290	107340	Single	50
107340	107420	Both	155
107420	108200	Single	767
109400	109590	Both	380
109590	109625	Single	32
109625	109720	Single	95
109720	109850	Single	127
109850	110250	Single	393
110250	110630	Both	744
110630	110750	Single	120
110750	110800	Single	47

LOCATION OF TRAPEZOIDAL DRAIN

Chainage		Side	Net Length (m)
From (m)	To (m)		
110800	111050	Single	250
111050	111100	Single	43
111100	111440	Single	334
111440	111580	Single	137
111580	111670	Single	87
111670	111720	Single	50
111720	111740	Single	20
111740	111900	Single	157
111900	112025	Single	125
112025	112110	Single	82
112110	112150	Single	37
112150	112425	Single	272
112425	112575	Single	147
112575	112630	Single	52
112630	112690	Single	60
112690	112740	Single	47
112875	112975	Single	96
112975	113050	Single	72
113050	113090	Single	37
113090	113185	Single	95
113185	113340	Single	150
113340	113370	Single	30
113370	113420	Single	50
113420	113440	Single	20
113440	113575	Single	132
113575	113650	Single	75
113650	113775	Both	245
113775	114175	Single	392
114175	114260	Single	85
114260	114435	Single	170
114435	114700	Both	520
114700	114765	Single	65
114765	115015	Both	495
115015	115230	Single	205
115230	115600	Both	730
115600	115680	Single	77
115680	116025	Single	340
116025	116150	Both	245
116150	116475	Single	322
116475	117500	Both	2020
117500	117900	Both	789
117900	118020	Single	120
118020	118080	Single	60
118080	118175	Single	95
118175	118275	Single	100
118275	118670	Both	790
118670	118700	Single	27
118725	119275	Single	545
119275	119360	Single	85
119360	119475	Single	115
119475	119540	Both	130
119540	119750	Single	207
119750	119825	Single	75
119825	119875	Single	50
119875	119920	Single	45
119920	120225	Both	605
120225	120450	Single	145
120450	120600	Both	300

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.
5. Temporary opening on outer wall of catch pit have been proposed till land is developed in plot areas
6. These openings to be closed after land is developed by Vendors.

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: APRIL, 2020

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 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

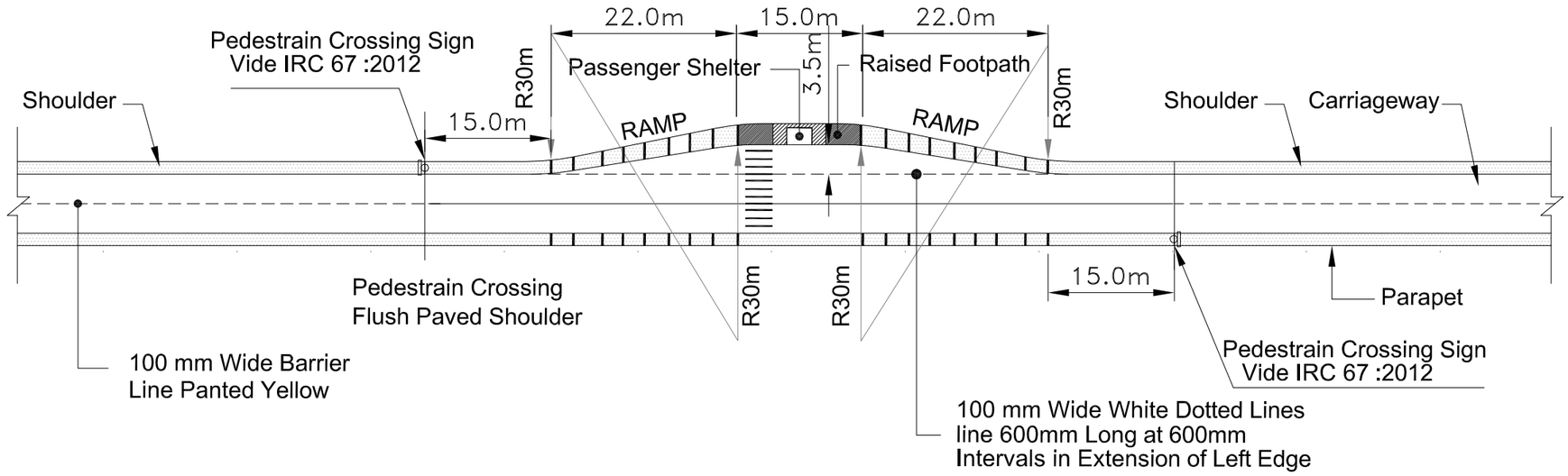
PACKAGE - IIIC

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-IIIC/MISC-7

REVISION MKD. - R0 | SHEET NO. - 01

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



TYPICAL LAYOUT OF PICK-UP BUS STOP ON HILLY AREA

List Of Proposed Pick Up Bus Stop			
Sl No	Design chainage(km)	Name of the habitation	Side
1	109+480	Songtal Village	both

Notes:

1. All dimension are in mm. unless otherwise mentioned.
2. Besides the above, Standards and Specifications mentioned in IRC : SP : 84-2014 shall be followed strictly whenever applicable.

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

REVISIONS

Scale :- N.T.S

DATE: APRIL, 2020

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
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TYPICAL LAYOUT OF PICK-UP BUS STOP

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

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-IIIC/MISC-8

REVISION MKD. - R0 | SHEET NO. - 01

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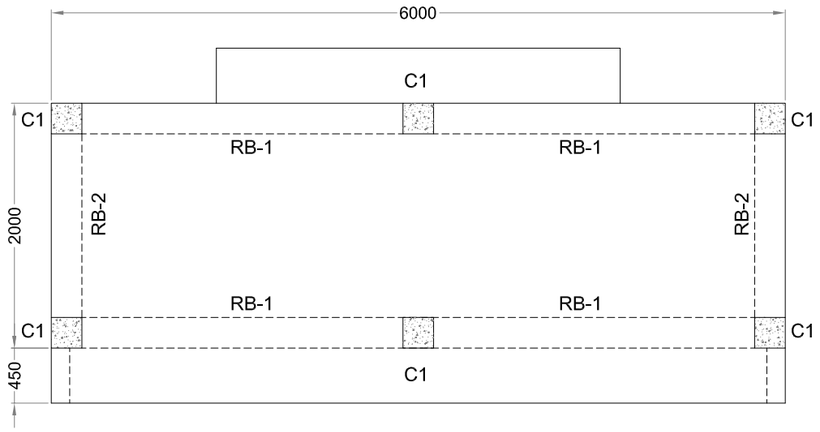
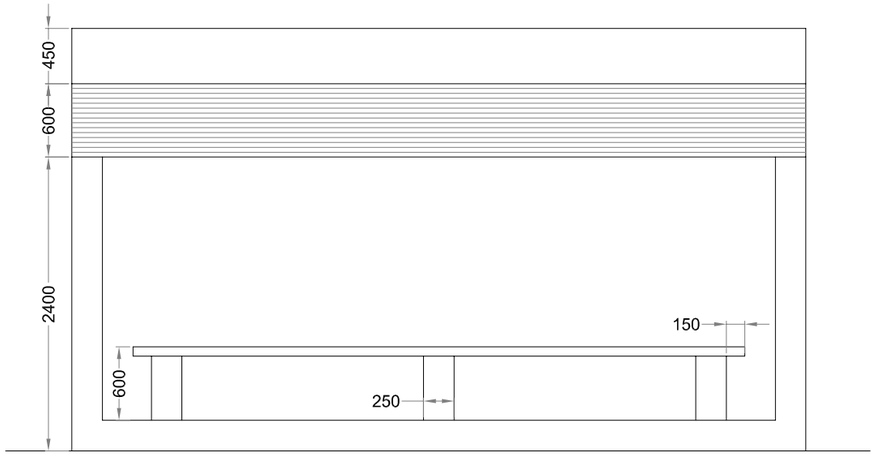
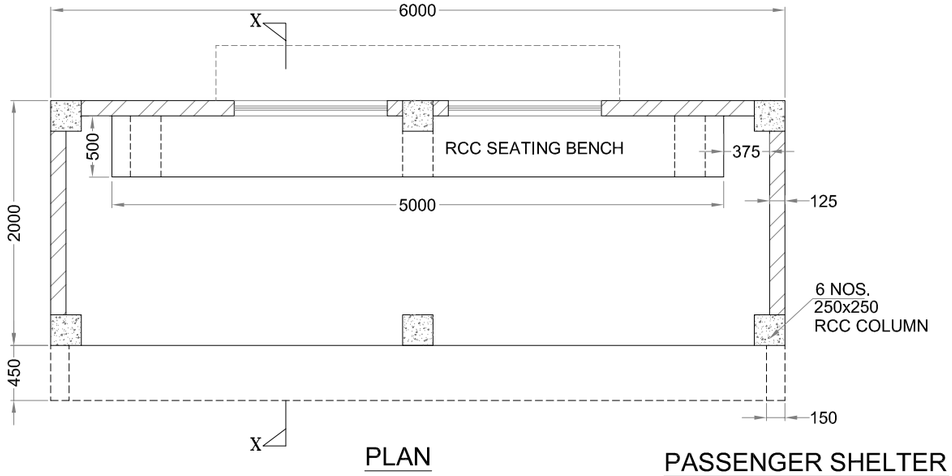
S.MANDAL	B.DAS	S.SADHU	A.K.DAS



STRUCTURAL ARRANGEMENT PLAN

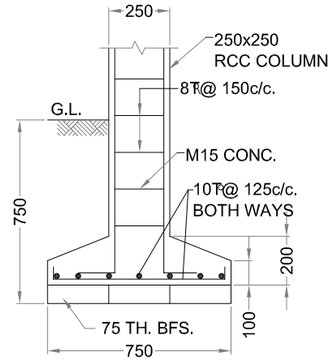


FRONT ELEVATION

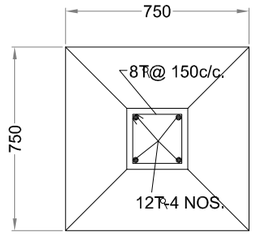


PLAN

PASSENGER SHELTER

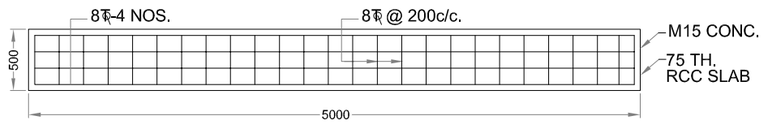


SECTION

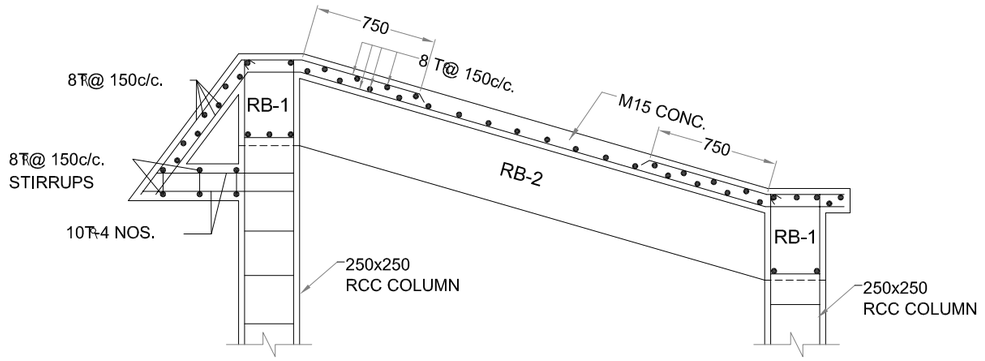


PLAN

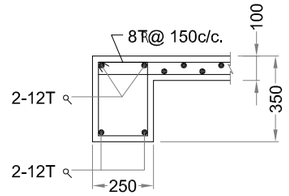
COLUMN FOUNDATION DETAILS



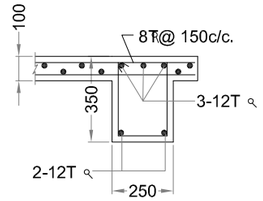
SEATING BENCH REINFORCEMENT DETAIL



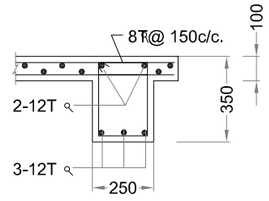
ROOF SLAB REINFORCEMENT DETAIL



2.0M BEAM SECTION
BEAM MKD. RB-2

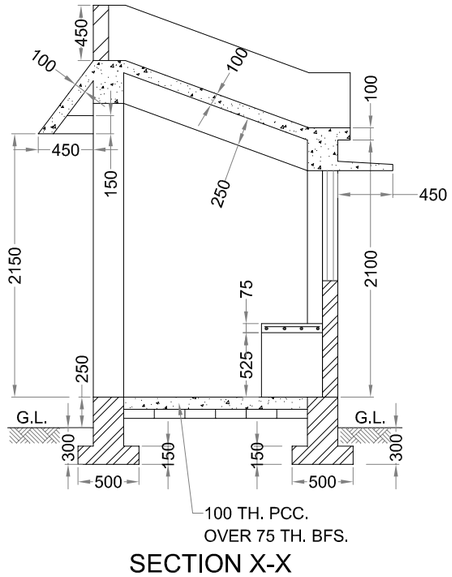


END SECTION



MID SPAN SECTION

3.0M BEAM SECTIONS
BEAM MKD. RB-1



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: APRIL, 2020

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

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DETAILS OF TYPICAL PASSENGER SHELTER

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

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

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

REVISION MKD. - R0 | SHEET NO. - 01

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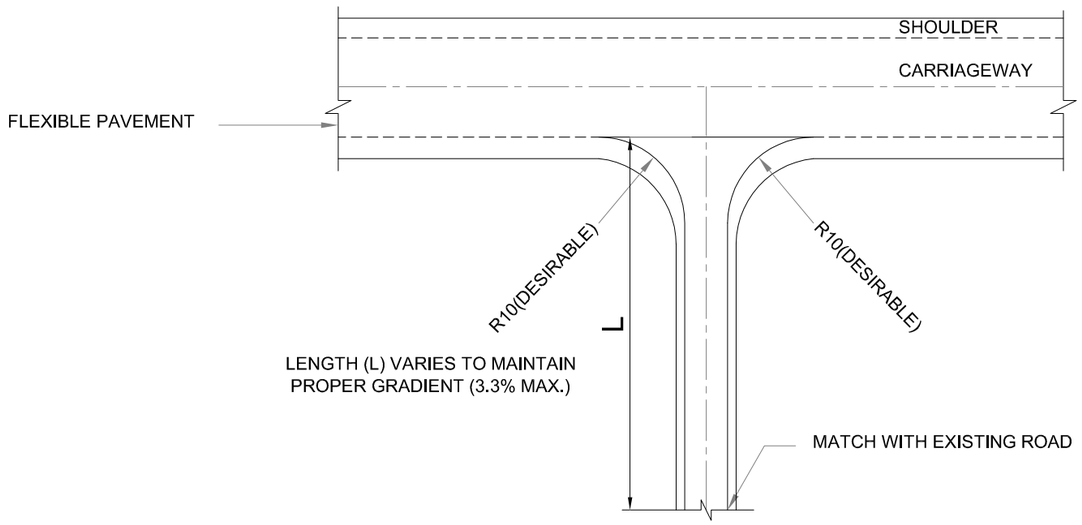
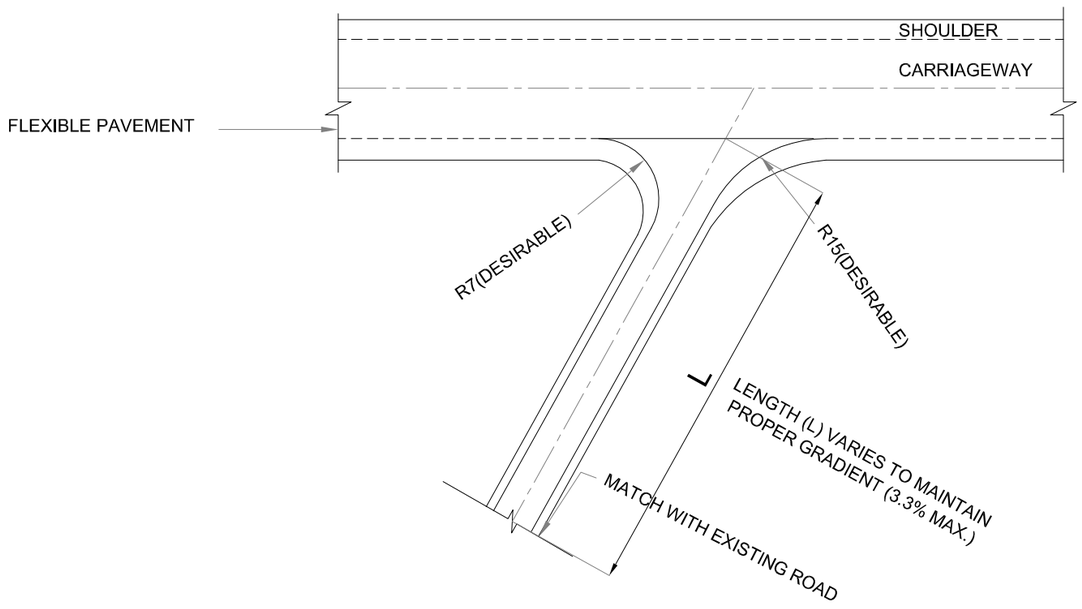
S.MANDAL	B.DAS	S.SADHU	A.K.DAS



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: APRIL, 2020

CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
PTI Building,3rd Floor, 4 Parliament Street,
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TYPICAL DETAILS OF MINOR INTERSECTION

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

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-IIIC/MISC-10

REVISION MKD. - R0 | SHEET NO. - 01

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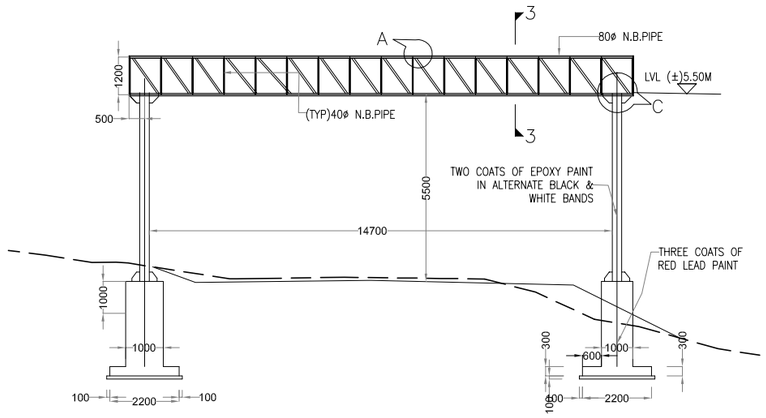
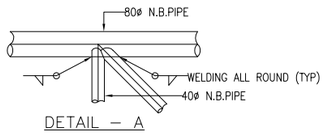
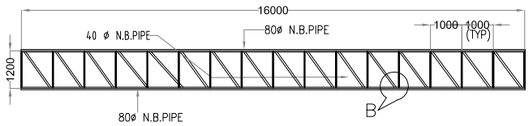
S.MANDAL	B.DAS	S.SADHU	A.K.DAS





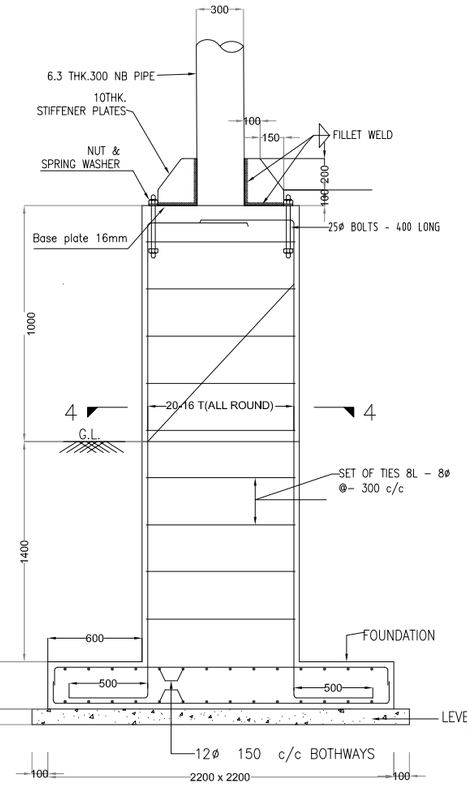
DETAIL – A

SCALE:– 1 : 12.5



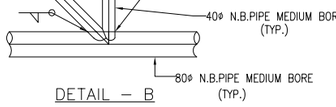
TOP AND BOTTOM PLAN

SCALE:– 1 : 125



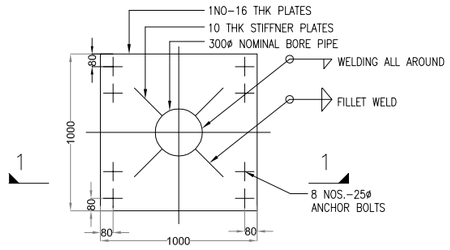
SECTION 1–1

SCALE:– 1 : 25



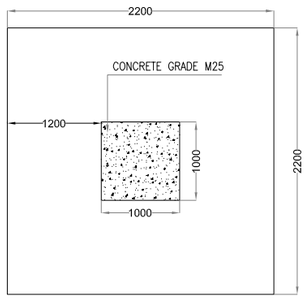
DETAIL – B

SCALE:– 1 : 12.5



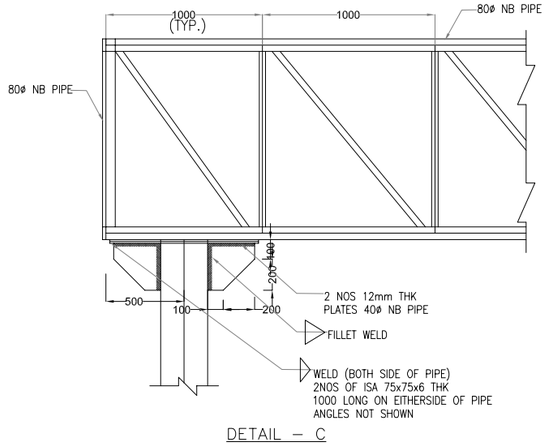
DETAILS OF COLUMN BASE P–1

SCALE:– 1 : 25



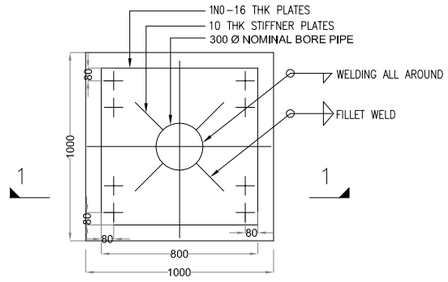
GA PLAN FOR COLUMN

SCALE:– 1 : 25



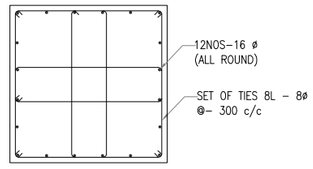
DETAIL – C

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: APRIL, 2020

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 PROCUREMENT AND CONSTRUCTION MODE IN THE STATES OF MANIPUR (PKG:-NHIDCL/DPR/CT-IJ-TP/Manipur/2017)

TYPICAL DETAILS OF GANTRY GIRDER FOR OVERHEAD SIGNS

SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT

PACKAGE - IIIC

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-IIIC/MISC-11

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

STRUCTURAL DRAWING

PROPOSED BRIDGE

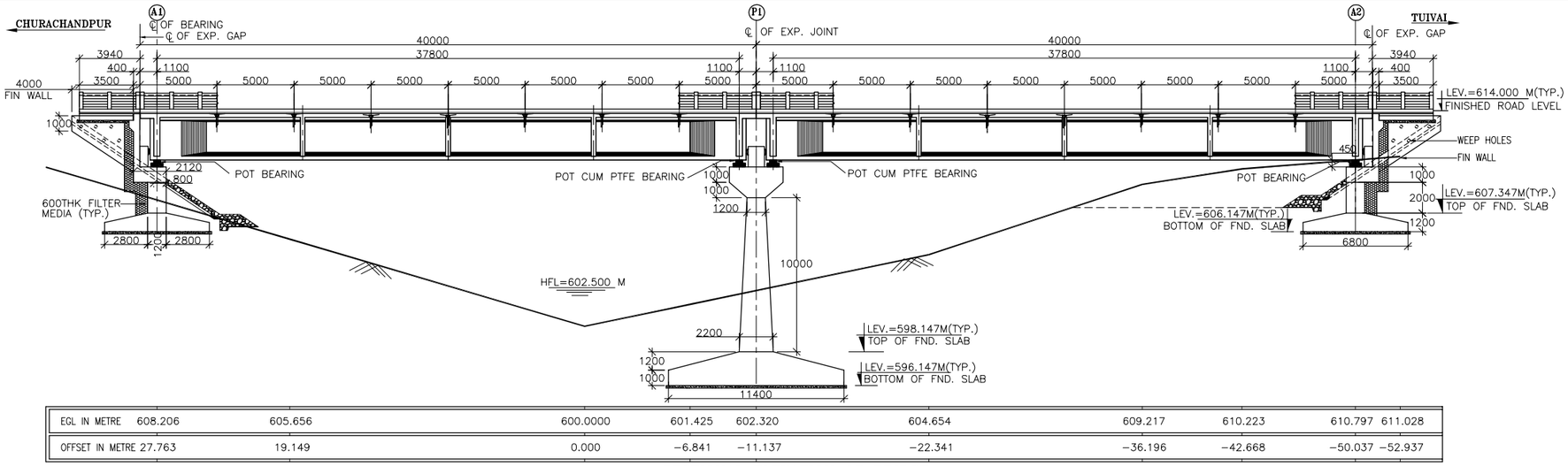
CONTENT

(PROPOSED BRIDGES)

(ROAD NAME: CHURACHANDPUR-TUIVAI)

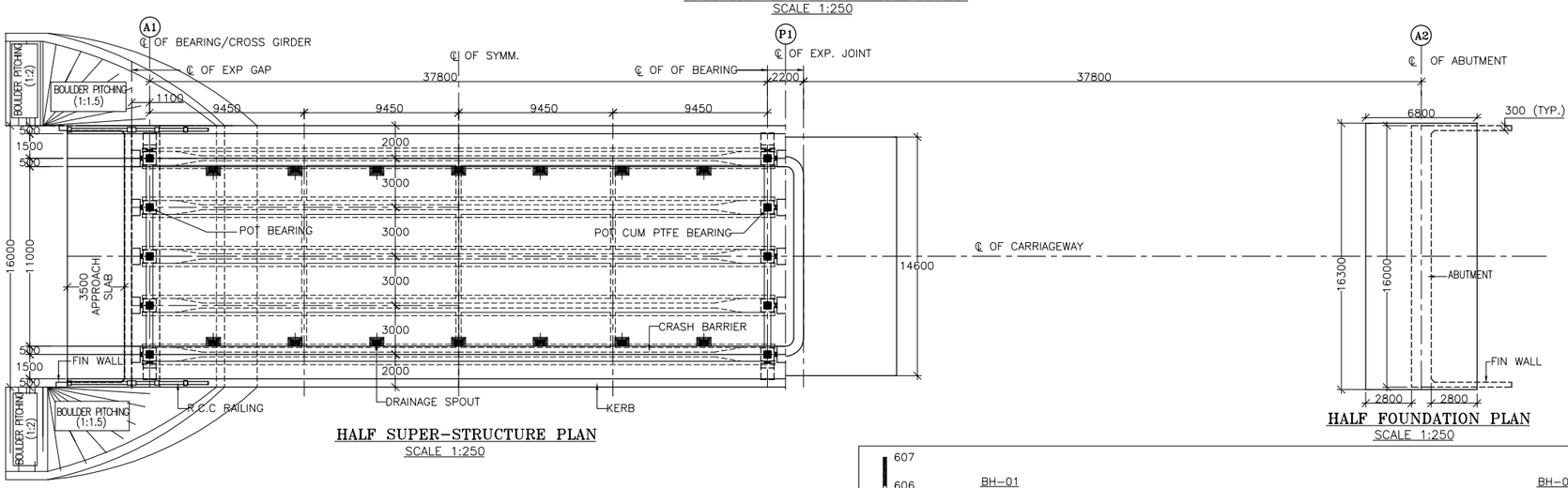
PACKAGE-IIIC

SL. NO.	DESIGN CHAINAGE	STR. NO.	DESCRIPTION	DRAWING NO.	NO. OF SHEETS
01.	120.306 KM	121/1	(2X 40.0M) PSC T-GIRDER :-		
			GENERAL ARRANGEMENT DRAWING	CET/BDG/2017/4047/NH-102B/CCPUR-TUIVAI/FDPR/PKG-IIIC/MJ/(STR-121/1)/GA	04
			MISCELLANEOUS DRAWING	CET/BDG/2017/4047/NH-102B/CCPUR-TUIVAI/FDPR/PKG-IIIC/MJ/(STR-121/1)/MISC	01



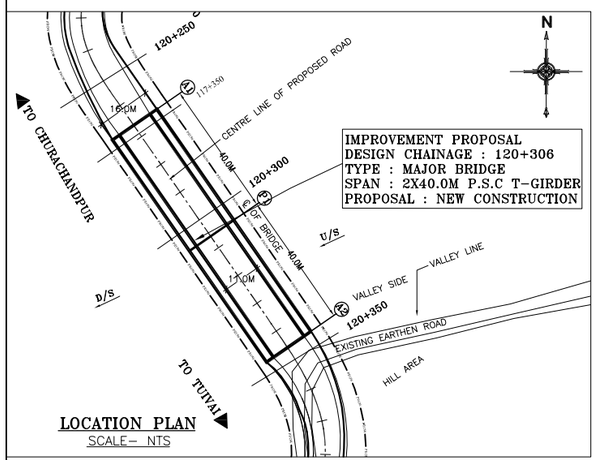
EGL IN METRE	608.206	605.656	600.0000	601.425	602.320	604.654	609.217	610.223	610.797 611.028
OFFSET IN METRE	27.763	19.149	0.000	−6.841	−11.137	−22.341	−36.196	−42.668	−50.037 −52.937

SECTIONAL ELEVATION OF BRIDGE
SCALE 1:250

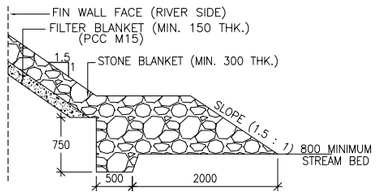


HALF SUPER−STRUCTURE PLAN
SCALE 1:250

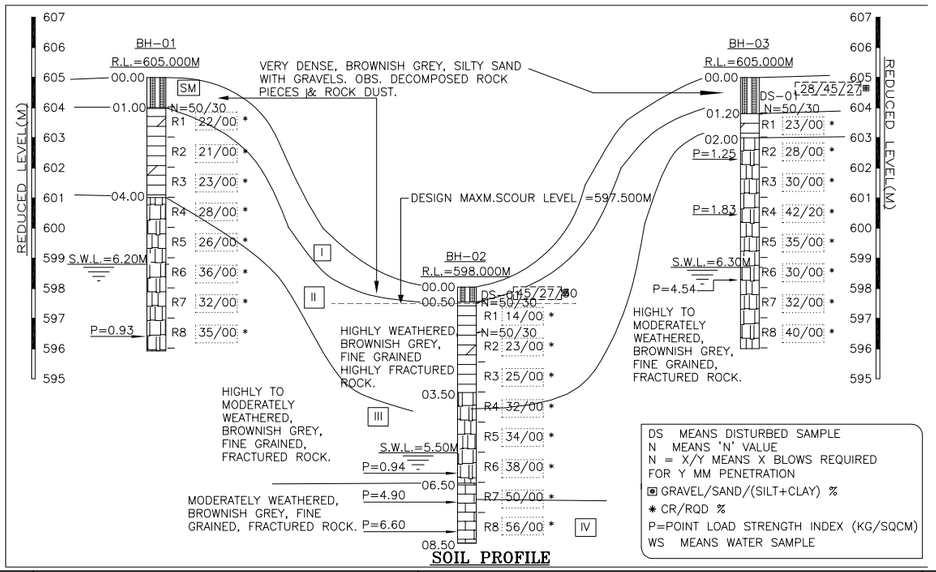
HALF FOUNDATION PLAN
SCALE 1:250



LOCATION PLAN
SCALE− NTS



DETAILS OF FLOOR PROTECTION
SCALE 1:50



SOIL PROFILE

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) DECK SLAB = M40,
   b) GIRDER = M45,
   c) SUB STRUCTURE & FOUNDATION SLAB = M30,
   d) FIN WALL = M30,
   e) DIRT WALL = M30,
   f) APPROACH SLAB = M30,
   g) P.C.C. BELOW APPROACH SLAB = M15,
   h) R.C.C. RAILING & KERB = M30,
   i) CRASH BARRIER = M40,
   j) PEDESTAL = M35,
2. CONCRETE SHALL BE OF DESIGN MIX AND SHALL HAVE TO ACHIEVE MINIMUM 28 DAYS CHARACTERISTICS STRENGTH ON 150MM CUBES FOR MODERATE EXPOSURE.
3. 43/53 GRADE ORDINARY PORTLAND CEMENT CONFORMING TO IS : 8112 OR 33 GRADE ORDINARY PORTLAND CEMENT CONFORMING TO IS : 269 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) BEARING SHALL BE OF POT CUM PTFE TYPE. THE SIZE & DIMENSIONS OF THE BEARINGS SHALL BE FINALIZED AS PER THE DETAILS PROVIDED BY THE APPROVED VENDOR.

(VI) 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.

(VII) PROPERTIES OF BACKFILL SOIL γ=1.8t/m³ , ø=30°.

C. WORKMANSHIP/DETAILING :

1. MINIMUM CLEAR COVER :
   a) SUPERSTRUCTURE = 40MM
   b) ABUTMENT, ABUTMENT CAP & FIN WALL = 75MM
   C) FOUNDATION SLAB = 75MM
2. DESIGN LOAD :
   a) CLASS A THREE LANES OR CLASS A ONE LANE + CLASS 70R TRACKED/WHEELED OR IRC CLASS SV LOADING WHICHEVER PRODUCES 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. FOR ENSURING PROPER COVER OF CONCRETE TO REINFORCEMENT SPECIALLY MADE POLYMER COVER BLOCKS SHALL ONLY BE USED.
4. BENDING OF REINFORCEMENT BARS SHALL BE AS PER IS:2502.
5. 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.
6. 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.
7. SHUTTERING PLATES SHALL SUITABLY BE STIFFENED TO ENABLE THE COMPACTION BY FORM VIBRATORS.
8. SHARP EDGES OF CONCRETE SHALL BE CHAMFERED.
9. THE WEEP HOLES SHALL BE WITH 100MM DIA AC PIPE IN 1:20 SLOPE @ 1M C/C STAGGERED HORIZONTALLY & VERTICALLY AT ABUTMENT & FIN WALLS.
10. CONSTRUCTION JOINT SHOULD BE PROVIDED WHERE MOMENT EQUAL TO ZERO.
11. THE LOCATION OF JACKS FOR LIFTING UP THE SUPERSTRUCTURE TO REPLACE BEARINGS ETC. IS SHOWN THUS ⇑ . THIS SHALL BE DISTINCTLY ETCHED ON END CROSS GIRDERS AND ABUTMENT CAPS.
12. FOUNDATIONS ARE TENTATIVE & WILL BE FINALISED ON THE BASIS OF SOIL INVESTIGATION REPORT LATER.
13. MAXIMUM BASE PRESSURE OF SOIL :−
    AT ABUTMENT = 40.5 TON/SQM
    AT PIER = 49 TON/SQM
14. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DWG. NO.:
    CET/BDG/2017/4047/NH−102B/CCPUR−TUIVAI/FDPR/PKG−IIIC/MJ/(STR−121/1)/GA (SHEET NO. 02 TO 04)
    CET/BDG/2017/4047/NH−102B/CCPUR−TUIVAI/FDPR/PKG−IIIC/MJ/(STR−121/1)/MISC (SHEET NO. 01)

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.
R0				

REVISIONS

SCALE: AS SHOWN

DATE: APRIL, 2020

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
2 X 40.0M PSC T-GIRDER
(AT CHAINAGE - 120.306 KM)
PACKAGE :- NHIDCL/DPR/CT-IJ-TP/MANIPUR/2017

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

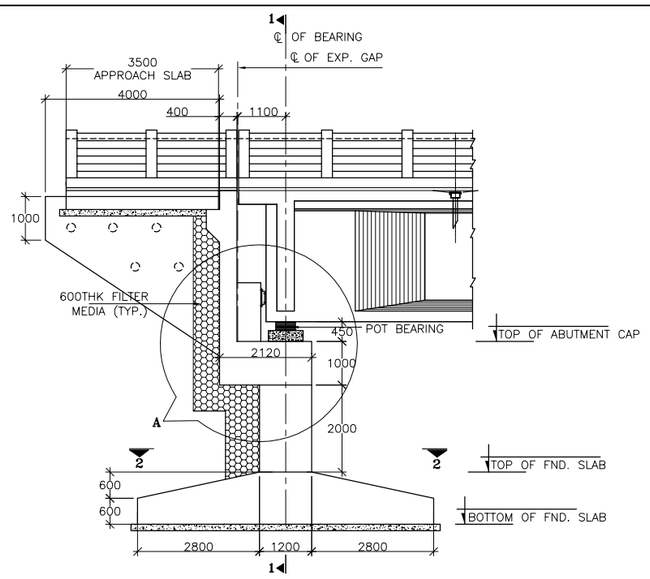
CONSULTANT :
CETEST Engineering Consultants
An ISO 9001, 14001 & OHSAS 18001 Certified Company

C.E. TESTING CO. PVT. LTD. KOLKATA 700 092 ISO 9001, 14001 & OHSAS 18001

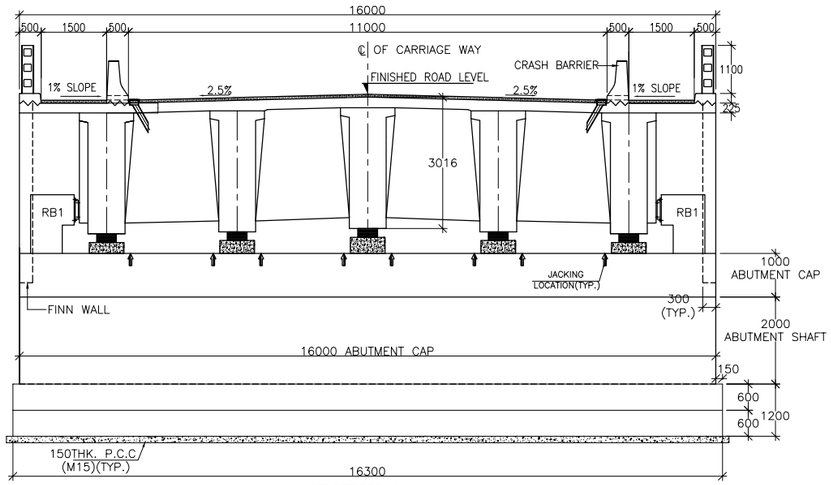
C.E. TESTING COMPANY PVT. LTD.
124-A, N.S.C. BOSE ROAD
KOLKATA - 700092.

DRG. NO. : CET/BDG/2017/4047/NH -102B/C-T/FDPR/ PKG-IIIC/MJ/(STR-121/1)/GA

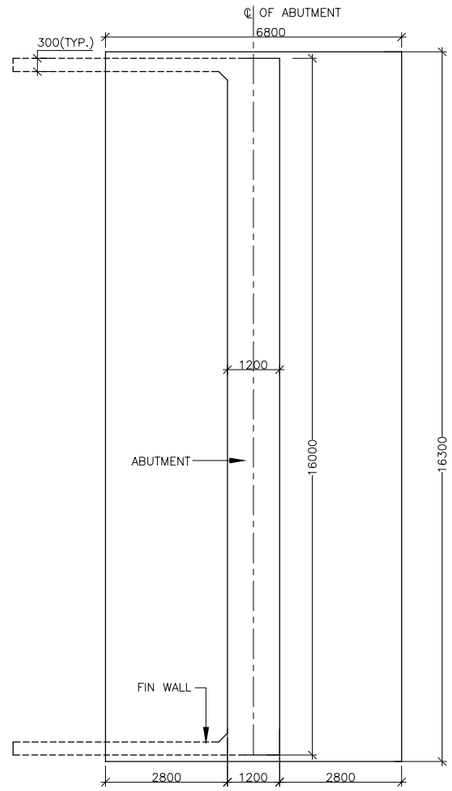
REVISION MKD. - R0	SHEET NO. - 1 OF 4		
DRAWN BY	DESIGN BY	CHECKED BY	ISSUED BY
S.CHATTERJEE	S.ALI	A. DEY	A.K.DAS (TEAM LEADER)



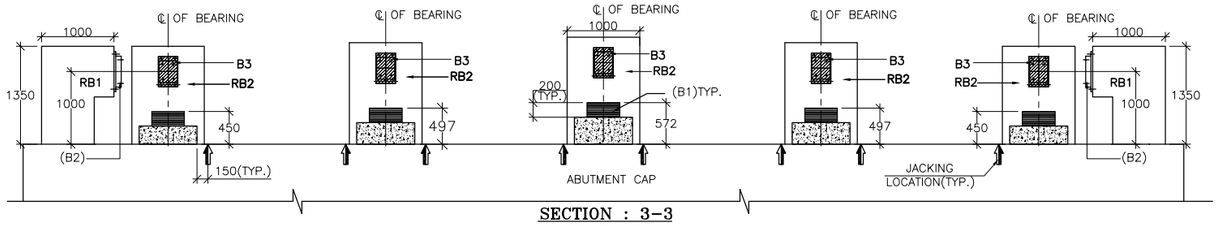
SECTIONAL ELEVATION OF ABUTMENT
SCALE 1:100



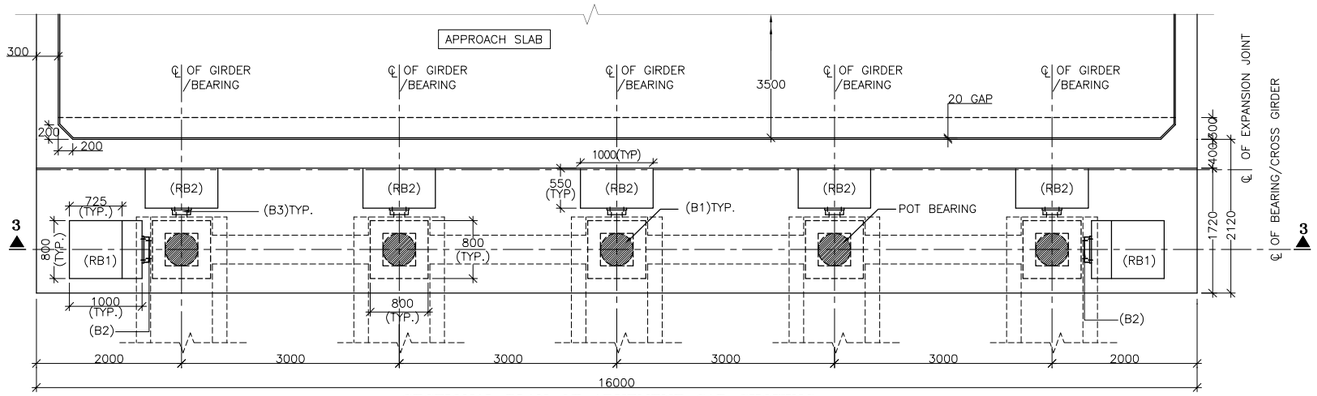
SECTION 1-1
SCALE 1:100



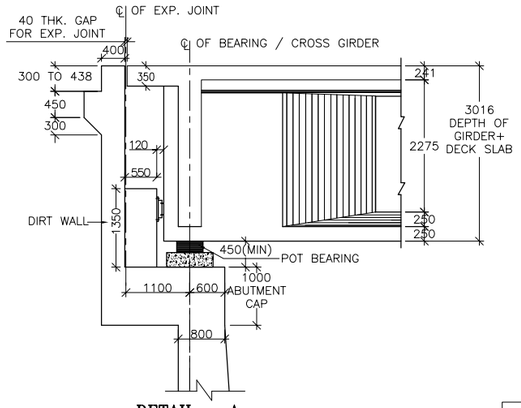
SECTION 2-2
SCALE 1:100



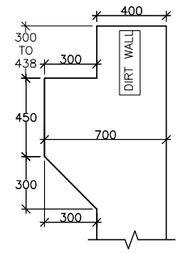
SECTION : 3-3
SCALE 1:60



SECTIONAL PLAN OF ABUTMENT CAP SHOWING
ARRANGEMENT OF PADESTAL & POT BEARING
SCALE 1:60



DETAIL - A
SCALE 1:75



DETAIL OF BRACKET
SCALE 1:25

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/CCPUR-TUIVAI/FDPR/PKG-IIIC/MJ/(STR-121/1)/GA
   (SHEET NO. 01,03 & 04)
   CET/BDG/2017/4047/NH-102B/CCPUR-TUIVAI/FDPR/PKG-IIIC/MJ/(STR-121/1)/MISC
   (SHEET NO. 01)

					SCALE: AS SHOWN
R0					DATE: APRIL, 2020
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- IIIC)

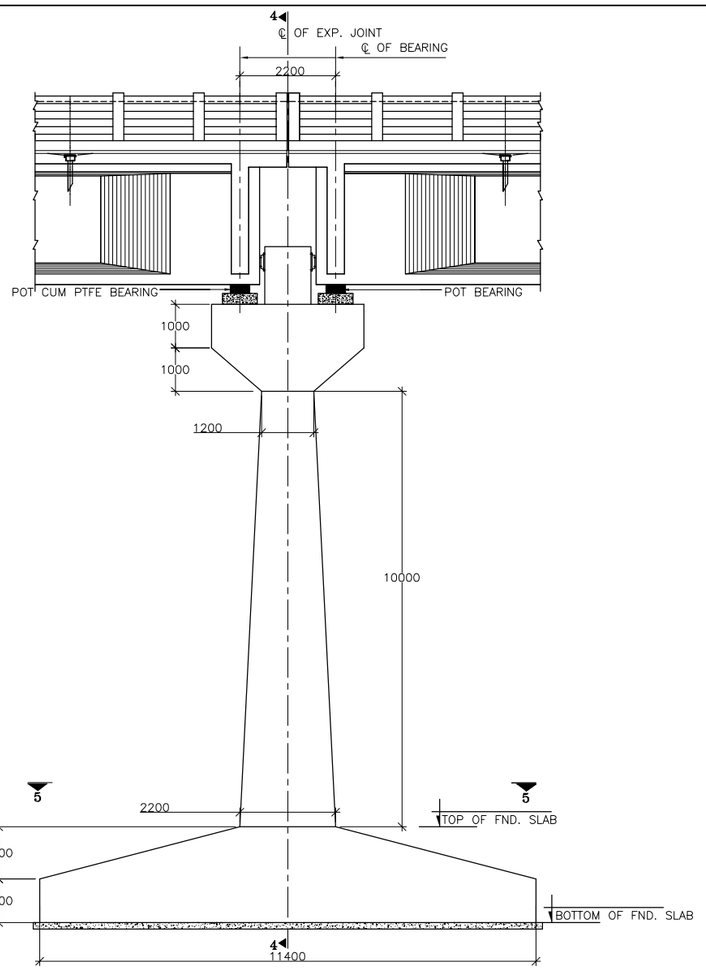
CONSULTANT :
CETEST Engineering Consultants
An ISO 9001, 14001 & OHSAS 18001 Certified Company

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

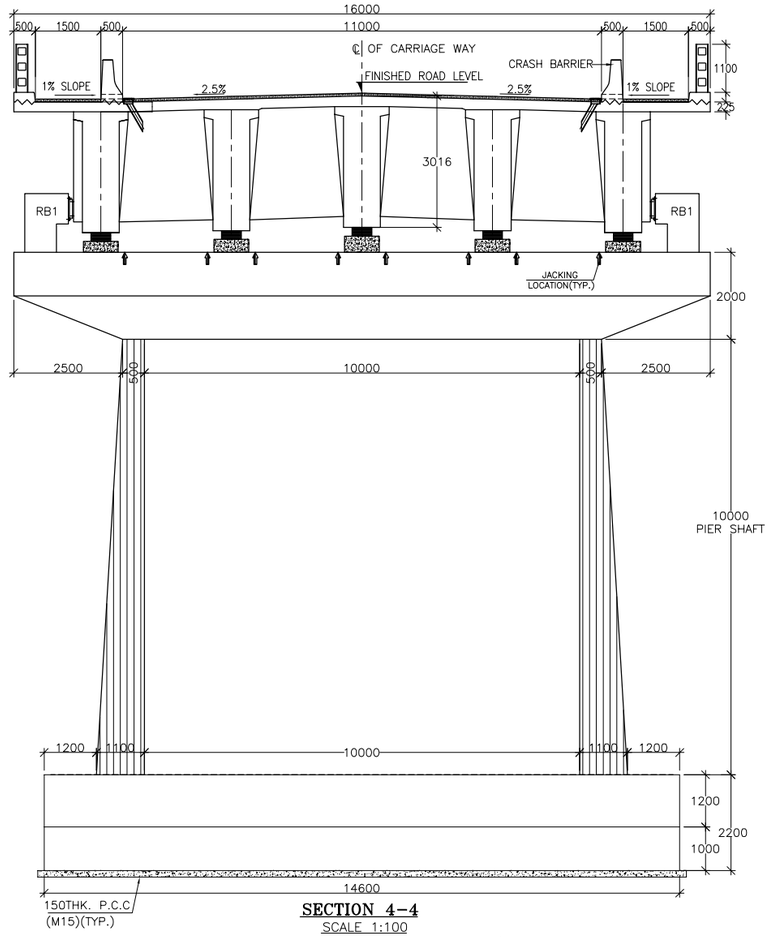
DRG. NO. : CET/BDG/2017/4047/NH -102B/C-T/FDPR/ PKG-IIIC/MJ/(STR-121/1)/GA

REVISION MKD. - R0 | SHEET NO. - 2 OF 4

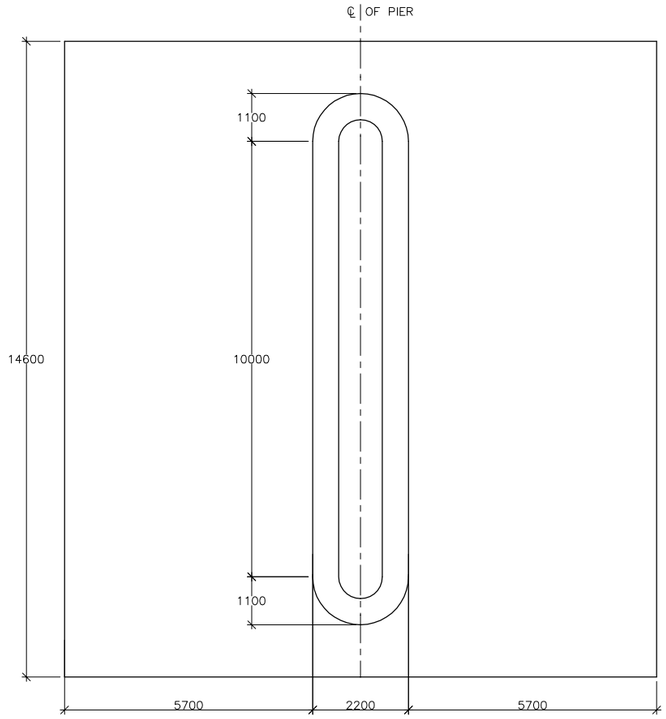
DRAWN BY	DESIGN BY	CHECKED BY	ISSUED BY
S.CHATTERJEE	S.ALI	A. DEY	A.K.DAS (TEAM LEADER)



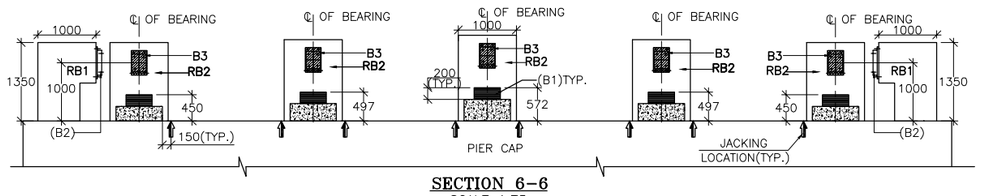
SECTIONAL ELEVATION OF PIER
SCALE 1:100



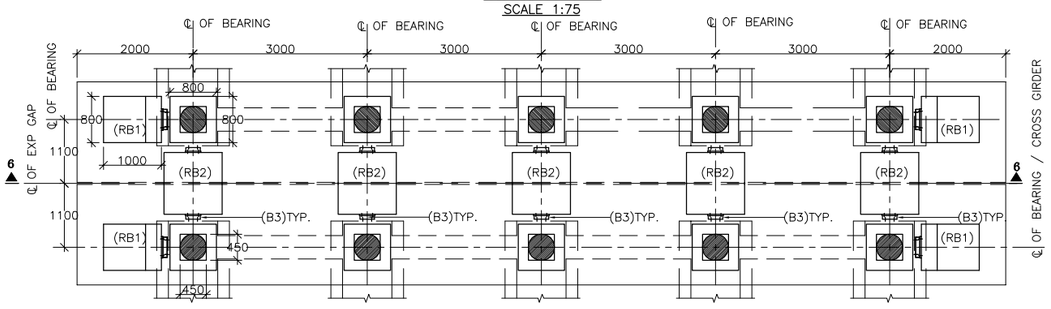
SECTION 4–4
SCALE 1:100



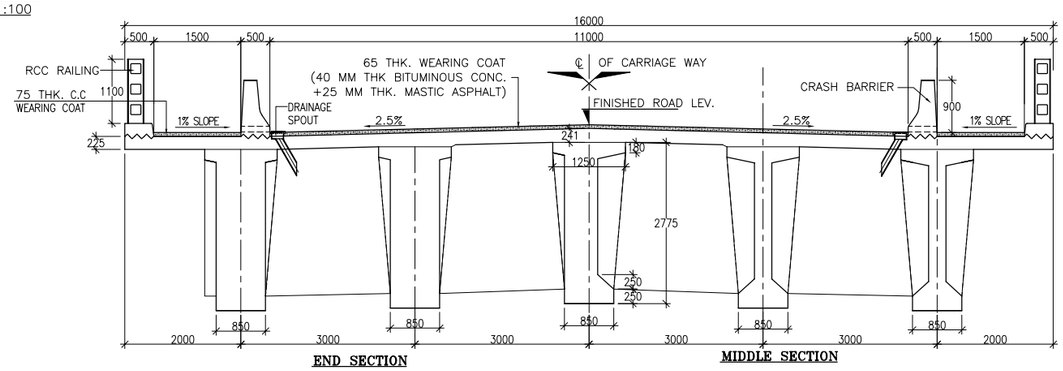
SECTION 5–5
SCALE 1:100



SECTION 6–6
SCALE 1:75



SECTIONAL PLAN OF PIER CAP SHOWING
ARRANGEMENT OF PADESTAL & POT BEARING
SCALE 1:75



END SECTION
MIDDLE SECTION

CROSS SECTION OF SUPER STRUCTURE
SCALE–1:75

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/CCPUR–TUIVAI/FDPR/PKG–IIIC/MJ/(STR–121/1)/GA
   (SHEET NO. 01,02 & 04)
   CET/BDG/2017/4047/NH–102B/CCPUR–TUIVAI/FDPR/PKG–IIIC/MJ/(STR–121/1)/MISC
   (SHEET NO. 01)

					SCALE: AS SHOWN
R0					DATE: APRIL, 2020
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.	
REVISIONS					

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

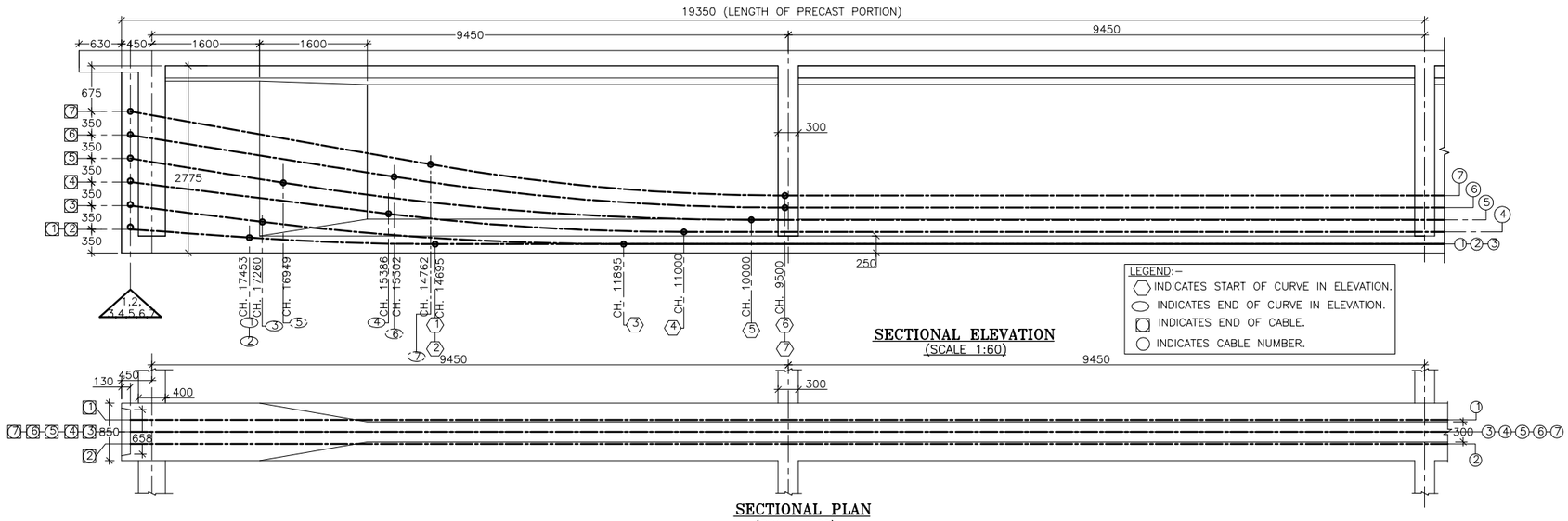
CONSULTANT :
CETEST Engineering Consultants
An ISO 9001, 14001 & OHSAS 18001 Certified Company

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

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

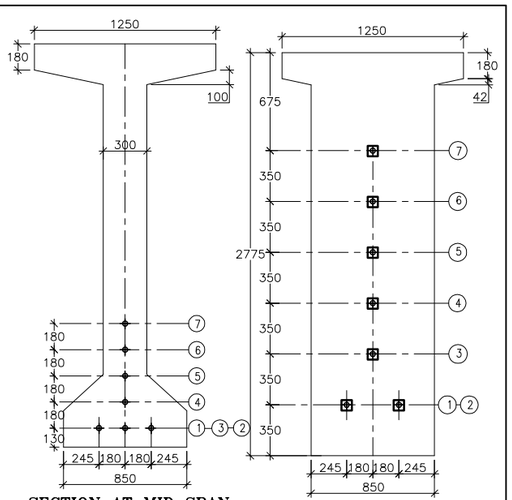
DRG. NO. : CET/BDG/2017/4047/NH -102B/C-T/FDPR/ PKG-IIIC/MJ/(STR-121/1)/GA
REVISION MKD. - R0
SHEET NO. - 3 OF 4

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



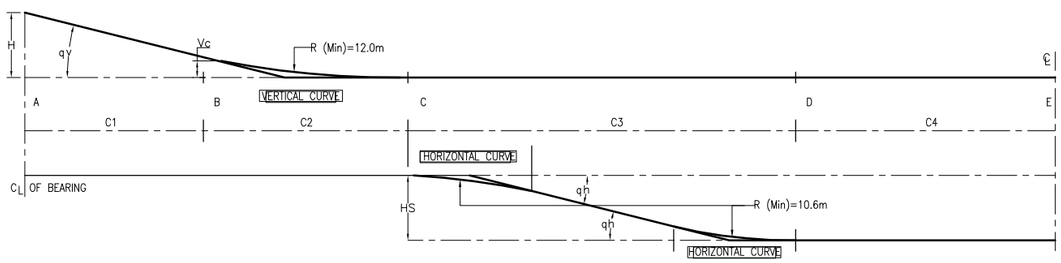
SECTIONAL ELEVATION
(SCALE 1:60)

SECTIONAL PLAN
(SCALE 1:60)

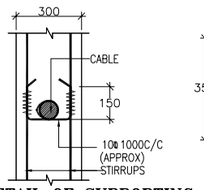


SECTION AT MID SPAN
(SCALE 1:30)

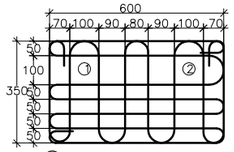
SECTION AT SUPPORT
(SCALE 1:30)



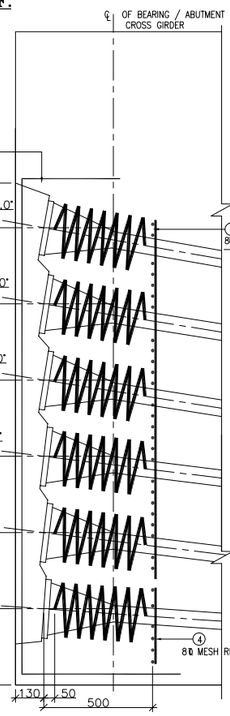
TYPICAL ARRANGEMENT OF CABLES
(SCALE 1:30)



TYPICAL DETAIL OF SUPPORTING ARRANGEMENT FOR CABLES
SCALE – 1:20



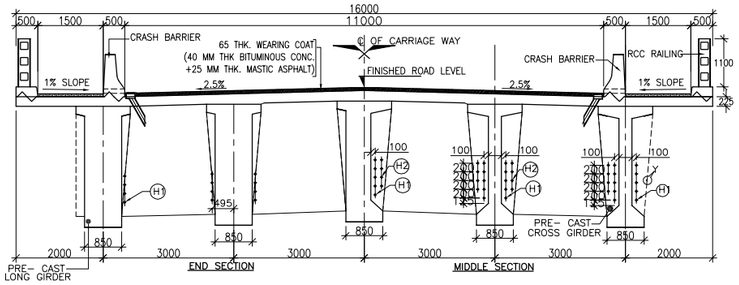
④ 8 ϕ MESH REINF.
SCALE – 1:15



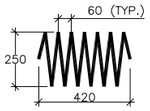
END BLOCK DETAIL
SCALE – 1:20

TABLE NO A

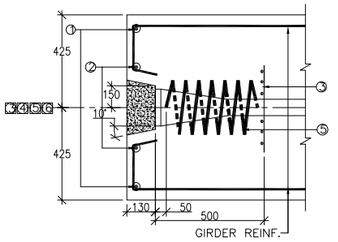
CABLE NO.	LENGTH (C1) IN (M)	LENGTH (C2) IN (M)	LENGTH (C3) IN (M)	LENGTH (C4) IN (M)	LIFT HEIGHT (H) IN (M)	HEIGHT OF VERTICAL CURVE (Vc) IN (M)	VERTICAL ANGLE (θv) IN (DEG.)	LENGTH OF VERTICAL CURVE (LVc) IN (M)	HORIZONTAL SWAY (Hs) IN (M)	HORIZONTAL ANGLE (θv) IN (DEG.)	LENGTH OF HORIZONTAL CURVE (LHc) IN (M)	LENGTH 'AB' IN (M)
1	1.767	2.758	0.000	14.695	0.220	0.096	4.000	2.764	0.000	0.000	0.000	1.771
2	1.767	2.758	0.000	14.695	0.220	0.096	4.000	2.764	0.000	0.000	0.000	1.771
3	1.960	5.365	0.000	11.895	0.570	0.329	7.000	5.399	0.000	0.000	0.000	1.975
4	3.834	4.386	0.000	11.000	0.740	0.269	7.000	4.413	0.000	0.000	0.000	3.863
5	2.271	6.949	0.000	10.000	0.910	0.550	9.000	7.021	0.000	0.000	0.000	2.299
6	3.918	5.802	0.000	9.500	1.080	0.459	9.000	5.862	0.000	0.000	0.000	3.967
7	4.458	5.262	0.000	9.500	1.250	0.464	10.000	5.330	0.000	0.000	0.000	4.527



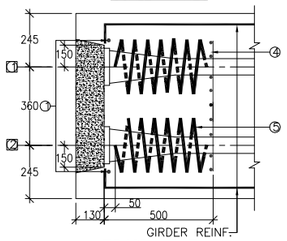
CROSS SECTION OF SUPER STRUCTURE
SCALE–1:100



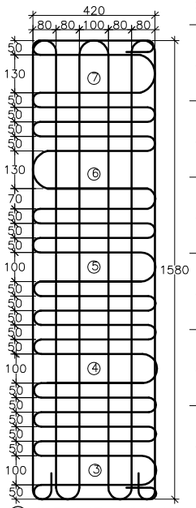
⑤ 16ϕ SPIRAL
SCALE – 1:20



PLAN AT A–A
SCALE – 1:20



PLAN AT B–B
SCALE – 1:20



③ 8 ϕ MESH REINF.
SCALE – 1:15

NOTES :

1. ALL DIMENSIONS ARE IN MM & LEVELS ARE IN METER UNLESS OTHERWISE SPECIFIED.
2. CONC. GRADE SHALL BE M40 FOR SUPER STRUCTURE.
3. ALL REINFORCING STEEL SHALL BE OF HYSD BARS (GRADE DESIGNATION FE–500) CONFORMING TO IS: 1786.
4. CLEAR COVER = 40 MM.
5. PRESTRESSING SYSTEM

a) ALL PRESTRESSING CABLES SHALL HAVE 19 NOS. 7 PLY UNCOATED STRESS RELIVED LOW RELAXATION STRANDS OF 12.7 mm DIA. CONFORMING TO CLASS II OF IS 14268–1995.

b) JACKS USED FOR TENSIONING SHALL BE FREYSSINET TYPE OR EQUIVALENT & JACK LOAD = 244.300 TON.

c) BRIGHT METAL SHALL BE USED FOR CABLE SHEATHING.

d) THE PARAMETRES ADOPTED FOR DESIGN ARE AS FOLLOWS:–
- i) ANCHORAGE TYPE ----- 19T13 (DYNAMIC OR EQUIVALENT).
- ii) SLIP AT EACH END ----- 6 mm.
- iii) MINIMUM SHEATHING DIAMETER ----- 90 mm FOR 19T13.
- iv) SHEATHING THICKNESS ----- AS PER IRC:112–2011
- v) CO–EFFICIENT OF FRICTION ----- u = 0.25/ Radian.
- vi) WOBBLE CO–EFFICIENT ----- k = 0.0046/Metre.
- vii) NOMINAL AREA OF EACH STRAND ----- 98.8 sq. mm.
- viii) ULTIMATE BREAKING LOAD OF EACH STRAND ----- 183.71 K N.
- ix) MODULUS OF ELASTICITY OF HIGH TENSILE STEEL ----- 195 x 10^5 Mpa.
- x) THOUSAND HOURS RELAXATION LOSS AS PER TABLE 6.2 IRC–112, 2011.

e) ALL THE DESIGN PARAMETERS ADOPTED SHALL BE VERIFIED AT SITE BEFORE USE.

6. PRESTRESSING OPERATION

a) ALL CABLES SHALL BE PASSING THROUGH THE GIVEN ORDINATES AND SHALL BE SUPPORTED AT A SPACING NOT EXCEEDING 1000 mm BY A 16 mm DIA. CROSS BARS TACK WELDED/ SECURELY HELD IN POSITION WITH VERTICAL WEB REINFORCEMENT.
b) CABLE LENGTH MENTIONED IN THE DRAWING IS EXCLUSIVE OF 1000 mm EXTRA LENGTH AT EACH END. THE TOTAL LENGTH OF CABLE SHALL BE VERIFIED AT SITE.

c) SEQUENCE OF CONSTRUCTION AND PRESTRESSING SHALL BE AS FOLLOWS:
- i) GIRDERS ARE CASTED AT CASTING YARD.
- ii) 1st. STAGE OF PRESTRESSING IS DONE AFTER CONCRETE ATTAINS A STRENGTH OF 40.5 MPa. (14 DAYS). AFTER 1st. STAGE PRESTRESSING PRECAST GIRDERS MAY BE LAUNCHED OVER PIER TOP.
- iii) SHUTTERING FOR DECK SLAB AND CROSS GIRDERS ARE ERECTED FROM I–GIRDERS AND CASTING IS DONE AFTER CONCRETE ATTAINS 38 MPa.(21 DAYS)
- iv) 2nd. STAGE OF PRESTRESSING IS DONE AFTER ATTAINING OF FULL STRENGTH OF DECK CONCRETE i.e 40 MPa.(28 DAYS AFTER CASTING OF DECK SLAB i.e 49 DAYS).
- v) CRASH BARRIER & KERB IS TO BE CASTED & WEARING COARSE TO BE LAID AFTER REMOVAL OF SHUTTERING OF DECK SLAB.

d) STRESSING OF CABLES SHALL BE CARRIED OUT SIMULTANEOUSLY FROM BOTH ENDS, JACKING FORCES, SHALL BE INCREASED BY APPROPRIATE PERCENTAGE TO ACCOUNT FOR ANCHORAGE AND JACK FRICTION AND EFFICIENCY AS PER THE MANUFACTURER'S INSTRUCTIONS.

e) GROUTING OF CABLES SHALL BE DONE IN SAME SEQUENCE AS STRESSING AND SHALL CONFORM TO IRC 112–2011.

f) EXTENSION ARE GIVEN FOR CABLE LENGTHS (EXCLUDING 1.0M GRIP LENGTH) INCLUSIVE OF 6mm GRIP LENGTH AT EACH END. LOSS UPTO 6 mm DUE TO SLIP OF ANCHORAGES ARE NOT TO BE COMPENSATED DURING SITE OPERATION. JACK PRESSURE AND EXTENSION OF CABLES AT EACH END GIVEN IN THE DRAWING SHALL BE VERIFIED AT SITE.

g) INITIAL SLACKNESS IN PRESTRESSING TENDONS SHALL BE REMOVED BY APPLYING SMALL INITIAL TENSION. THE INITIAL TENSION REQUIRED TO REMOVE SLACKNESS SHALL BE TAKEN AS THE STRARTING POINT FOR MEASURING ELONGATION AND CORRECTION SHALL BE APPLIED AS PER CLAUSE 12.2.1.3 OF IS : 1343–1980.

6. THE EXTENSION GIVEN IN TABLE NO. A SHALL BE MODIFIED AT SITE IN CASE ACTUAL VALUE OF AREA OF STRAND 'A' AND MODULES OF ELASTICITY 'E' VARIES FROM THE VALUES CONSIDERED IN DESIGN. REVISED EXTENSION = EXTENSION AS PER DESIGN (98.7 mm x 195 x 10 m pa) / (NEW AREA x NEW MODULES).

7. EXTENSION OF CABLE SHALL BE VERIFIED FOR A FEW CABLES AT SITE. INCASE THE VALUE OF 2μ AND k ARE FOUND TO BE MORE THAN HAVE BEEN CONSIDERED, EXTENSION SHALL BE SUITABLY MODIFIED AFTER APPROVAL OF THE ENGINEER.

9. THE GRIP LENGTH FROM ANCHORAGE FACE UP TO GRIPPING POINT IN JACK ASSUMED IN EXTENSION CALCULATION IS 600 mm AND THE ADDITIONAL LENGTH TAKEN FOR CUTTING IS 400 mm IF GRIP LENGTH VARIES FROM THE ABOVE VALUES THAN THE CORRESPONDING NEW EXTENSION = EX + EX (GRIP–600)/(LENGTH OF CABLE–800) WHERE 'EX' IS EXTENSION SHOWN IN THIS DRAWING. 5. SEQUENCE OF STRESSING: –

1st. STAGE: 1 ⟶ 2 ⟶ 3 ⟶ 6
2nd. STAGE: 4 ⟶ 5

13. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DWG. NO.:

CET/BDG/2017/4047/NH–102B/CCPUR–TUIVAI/FDPR/PKG–IIIC/MJ/(STR–121/1)/GA (SHEET NO. 01 TO 03)

CET/BDG/2017/4047/NH–102B/CCPUR–TUIVAI/FDPR/PKG–IIIC/MJ/(STR–121/1)/MISC (SHEET NO. 01)

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.
R0				

REVISIONS

SCALE: AS SHOWN

DATE: APRIL, 2020

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 PRESTRESSING CABLES ARRANGEMENT AND ANCHORAGE DETAILS OF LONGITUDINAL GIRDER
PACKAGE :- NHIDCL/DPR/CT-IJ-TP/MANIPUR/2017

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

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

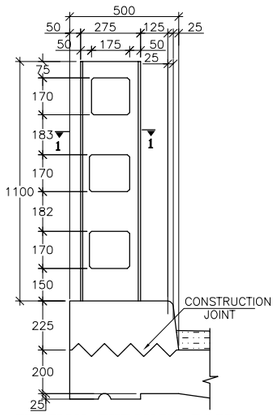
C.E. TESTING CO. PVT. LTD. KOLKATA 700 092 CIN: N.S.C. BOSE ROAD

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

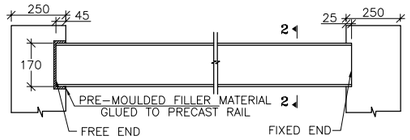
DRG. NO. : CET/BDG/2017/4047/NH -102B/C-T/FDPR/ PKG-IIIC/MJ/(STR-121/1)/GA

REVISION MKD. - R0 | SHEET NO. - 4 OF 4

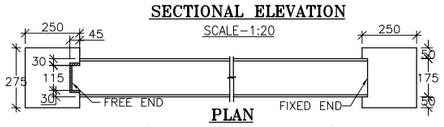
DRAWN BY	DESIGN BY	CHECKED BY	ISSUED BY
S.CHATTERJEE	S.ALI	A. DEY	A.K.DAS (TEAM LEADER)



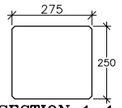
SECTION THROUGH POST
(FOR GENERAL ARRANGEMENT)
SCALE-1:20



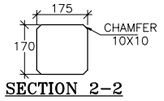
SECTIONAL ELEVATION
SCALE-1:20



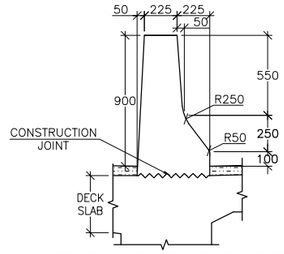
PLAN
(DETAIL OF PRECAST HANDRAIL)
SCALE-1:20



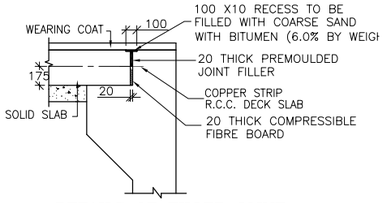
SECTION 1-1
SCALE- 1:15



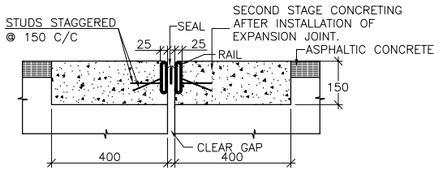
SECTION 2-2
SCALE- 1:15



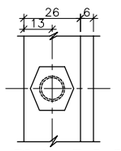
DETAILS OF CRASH BARRIER
(FOR GENERAL ARRANGEMENT)
SCALE-1:30



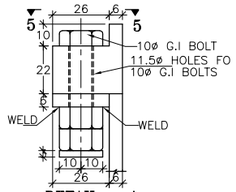
DETAILS OF FILLER JOINT
SCALE- 1:40



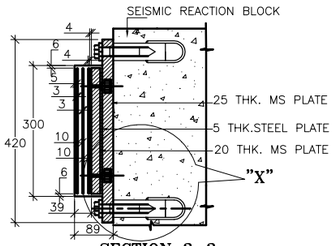
DETAIL OF STRIP TYPE EXPANSION JOINT (40MM GAP)
SCALE 1:15



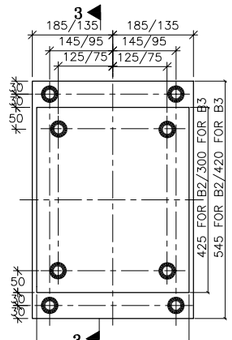
PLAN AT 5-5
SCALE- 1:2



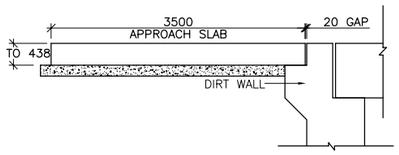
DETAIL - A
SCALE- 1:2



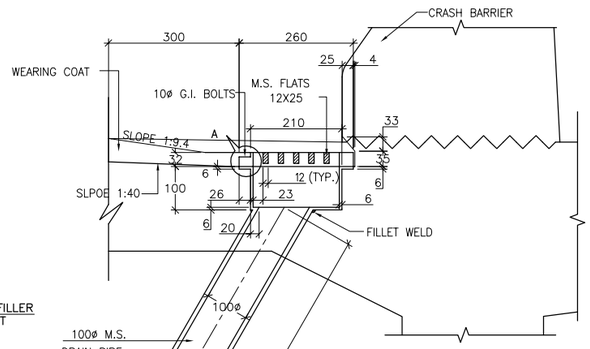
SECTION 3-3
(FOR B2)
SCALE 1:10



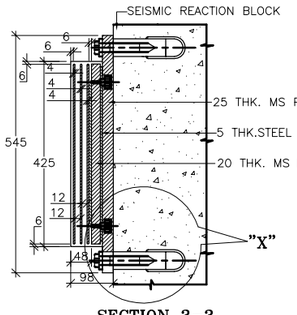
DETAIL OF SEISMIC ARRESTER
WITH FIXTURES
(TYPE B1 & TYPE B2)
SCALE 1:10



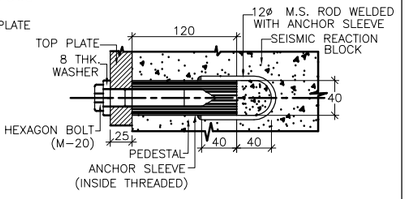
DETAILS OF APPROACH SLAB
SCALE 1:60



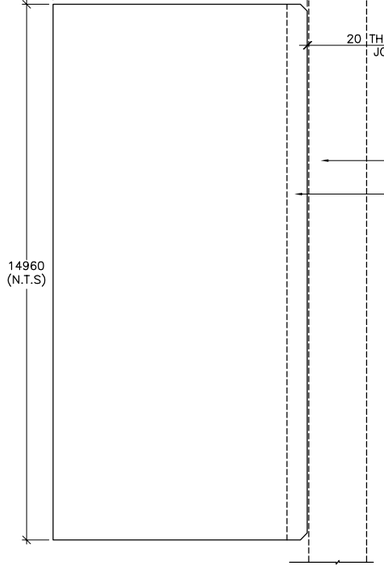
SECTION 4-4
SCALE- 1:10



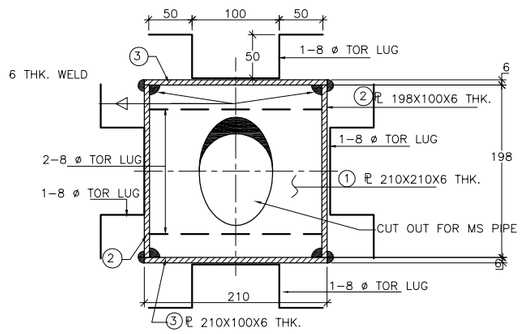
SECTION 3-3
(FOR B1)
SCALE 1:10



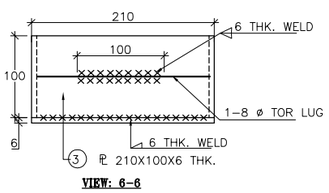
DETAIL OF "X"
SCALE 1:5



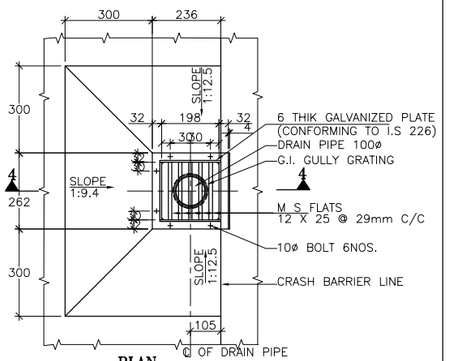
PLAN OF APPROACH SLAB
SCALE 1:60



DETAIL OF DRAINAGE BOX
SCALE 1:5



VIEW: 6-6



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

SPECIAL NOTES FOR 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.

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 :

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.

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/2018/4046/NH-102B/CCPUR-TUVAI/FDPR/PKG-IIIC/MJ/(STR-121/1)/GA
(SHEET NO 01 TO 04)

					SCALE: AS SHOWN	CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building, 3rd Floor, 4 Parliament Street, New Delhi - 110001
						TITLE: DETAILS OF RAILING,CRASH BARRIER,EXP. GAP,REACTION BLOCK,APPROACH SLAB & DRAINAGE SPOUT PACKAGE :- NHIDCL/DPR/CT-IJ-TP/MANIPUR/2017
R0						CONSULTANT: CETEST Engineering Consultants An ISO 9001, 14001 & OHSAS 18001 Certified Company
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.	DATE: APRIL, 2020	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**
REVISIONS						SUBMISSION TYPE: FINAL DETAILED PROJECT REPORT (PKG-IIIC)

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-IIIC/MJ/(STR-121/1)/MISC

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

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

PROPOSED CULVERTS

CONTENT

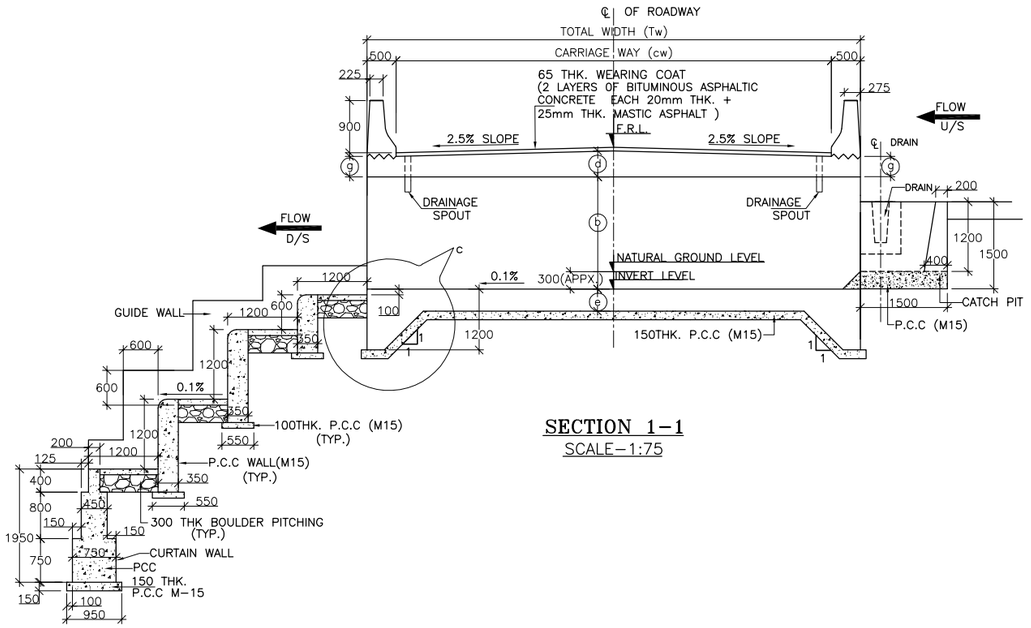
PROPOSED CULVERTS (PACKAGE-IIIC)

ROAD NAME : CHURACHADPUR-TUIVAI

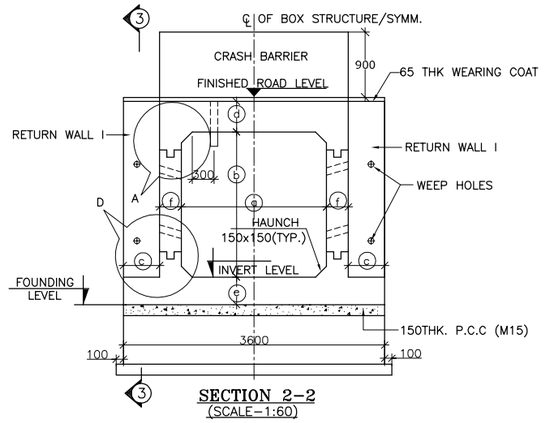
SL. NO.	DESCRIPTION	DRAWING NO.	NO. OF SHEETS
01.	LEVEL DETAILS OF PROPOSED CULVERTS		2
02.	**SINGLE CELL R.C.C. BOX CULVERT WITH CATCHPIT AND STEPPED (NORMAL CAMBER) :-**		
	GENERAL ARRANGEMENT	CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IIIC/BC/C-STP/NC/GA	01
03.	**MISCELLANEOUS DRAWING FOR SINGLE CELL R.C.C. BOX CULVERT :-**		
	GENERAL ARRANGEMENT	CET/4047/NHIDCL/NH-102B/C-T/FDPR/PKG-IIIC/BC/MISC	01

PACKAGE NO	Sl. No.	Survey Chainage (Km)	Design Chainage (km)	Existing Details		Proposal		Remarks For Proposal	FRL	EGL
				Type of Structures	Span Arrangement	Culvert Type	Size Span x Height (M X M)			
PACKAGE-IIIC	1	108.62	103.532	SLAB	1 X 5.3M	BOX CULVERT	5.0 X 5.0	Reconstruction	**1261.413**	**1261.718**
	2	108.7	103.600	SLAB	COVERED BY SOIL	BOX CULVERT	2.0 X 2.0	Reconstruction	**1265.162**	**1264.780**
	3	108.752	103.656	SLAB	1 X 4.5M	BOX CULVERT	5.0 X 5.0	Reconstruction	**1268.798**	**1268.813**
	4	-	103.925	-	-	BOX CULVERT	2.0 X 2.0	Balaning	**1266.508**	**1266.340**
	5	-	104.149	-	-	BOX CULVERT	2.0 X 2.0	Balaning	**1256.425**	**1256.265**
	6	109.49	104.366	SLAB	1 X 1.7M	BOX CULVERT	2.0 X 2.0	Reconstruction	**1248.730**	**1249.234**
	7	109.898	104.728	PIPE	1 X 1.2M	BOX CULVERT	2.0 X 2.0	Reconstruction	**1230.952**	**1230.546**
	8	-	104.899	-	-	BOX CULVERT	2.0 X 2.0	Balaning	**1224.703**	**1223.280**
	9	-	105.070	-	-	BOX CULVERT	2.0 X 3.0	Balaning	**1216.918**	**1211.474**
	10	110.423	105.240	PIPE	1 X 1.2M	BOX CULVERT	2.0 X 3.0	Reconstruction	**1212.527**	**1206.718**
	11	-	105.410	-	-	BOX CULVERT	2.0 X 3.0	Balaning	**1207.570**	**1199.193**
	12	-	105.645	-	-	BOX CULVERT	2.0 X 2.0	Balaning	**1194.842**	**1193.698**
	13	-	105.895	-	-	BOX CULVERT	2.0 X 2.0	Balaning	**1187.797**	**1187.387**
	14	111.357	106.154	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**1178.257**	**1178.502**
	15	111.57	106.350	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**1170.247**	**1168.950**
	16	111.818	106.585	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**1160.643**	**1160.512**
	17	-	106.760	-	-	BOX CULVERT	2.0 X 3.0	Balaning	**1156.034**	**1142.440**
	18	112.14	106.880	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**1161.985**	**1160.008**
	19	112.388	107.103	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**1174.518**	**1174.059**
	20	112.557	107.274	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**1178.329**	**1177.377**
	21	-	107.416	-	-	BOX CULVERT	2.0 X 3.0	Balaning	**1181.951**	**1181.751**
	22	112.795	107.512	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**1183.954**	**1183.770**
	23	112.990	107.703	Slab	1 X 2.7M	BOX CULVERT	3.0 X 3.0	Reconstruction	**1189.639**	**1189.550**
	24	113.257	107.958	Slab	1 X 2.4M	BOX CULVERT	3.0 X 3.0	Reconstruction	**1198.426**	**1197.923**
	25	113.463	108.159	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**1207.718**	**1207.134**
	26	-	108.296	-	-	BOX CULVERT	2.0 X 3.0	Balaning	**1213.741**	**1213.622**
	27	113.673	108.358	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**1215.612**	**1215.462**
	28	113.906	108.597	Slab	1 X 5.3M	BOX CULVERT	5.0 X 3.0	Reconstruction	**1212.304**	**1212.401**
	29	114.256	108.945	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**1196.813**	**1196.515**
	30	114.547	109.240	Slab	1 X 4.4M	BOX CULVERT	4.0 X 4.0	Reconstruction	**1184.836**	**1184.818**
	31	114.675		Slab	1 X 4.2M			Existing Culvert Retained as it is due to realignment		
	32	-	109.380	-	-	BOX CULVERT	4.0 X 4.0	BALANCING	**1178.607**	**1172.667**
	33	114.922	109.600	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**1168.818**	**1168.959**
	34	115.070	109.750	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**1162.144**	**1161.510**
	35	115.352	110.035	Slab	1 X 5.8M	BOX CULVERT	5.0 X 5.0	Reconstruction	**1149.892**	**1148.711**
	36	115.575	110.256	Slab	1 X 1.7M	BOX CULVERT	2.0 X 2.0	Reconstruction	**1143.275**	**1143.202**
	37	115.727	110.397	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**1134.275**	**1133.907**
	38	115.799	110.462	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**1129.995**	**1131.381**
	39	116.126	110.773	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**1111.752**	**1107.813**
	40	116.45	111.084	RCC	1 X 6.0M	BOX CULVERT	5.0 X 5.0	Reconstruction	**1096.729**	**1095.769**
	41	116.577	111.212	RCC	1 X 2.5M	BOX CULVERT	3.0 X 3.0	Reconstruction	**1090.546**	**1090.153**
	42	116.685	111.321	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**1085.281**	**1085.060**
	43	116.835	111.454	HP	1 X 1.0M	BOX CULVERT	2.0 X 3.0	Reconstruction	**1078.856**	**1072.726**
	44	117.06	111.668	HP	1 X 1.0M	BOX CULVERT	2.0 X 3.0	Reconstruction	**1068.519**	**1064.106**
	45	117.215	111.818	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**1061.202**	**1060.634**

PACKAGE NO	Sl. No.	Survey Chainage (Km)	Design Chainage (km)	Existing Details		Proposal		Remarks For Proposal	FRL	EGL
				Type of Structures	Span Arrangement	Culvert Type	Size Span x Height (M X M)			
PACKAGE-IIIC	46	117.469	112.061	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**1048.405**	**1047.658**
	47	117.557	112.149	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**1043.846**	**1043.518**
	48	-	112.342	-	-	BOX CULVERT	2.0 X 2.0	Balaning	**1035.309**	**1035.183**
	49	117.92	112.484	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**1026.986**	**1026.990**
	50	118.055	112.620	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**1020.035**	**1018.645**
	51	-	112.719	-	-	BOX CULVERT	2.0 X 2.0	Balaning	**1016.436**	**1014.553**
	52	118.38	112.948	RCC	1 X 2.8M	BOX CULVERT	3.0 X 3.0	Reconstruction	**1008.547**	**1006.840**
	53	118.447	113.008	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**1006.480**	**1005.085**
	54	-	113.075	-	-	BOX CULVERT	2.0 X 3.0	Balaning	**1003.941**	**998.145**
	55	118.647	113.187	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**997.599**	**998.324**
	56	118.699	113.230	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**994.710**	**993.314**
	57	118.977	113.502	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**982.300**	**982.182**
	58	-	113.670	-	-	BOX CULVERT	2.0 X 2.0	Balaning	**975.698**	**976.429**
	59	-	113.817	-	-	BOX CULVERT	2.0 X 3.0	Balaning	**966.723**	**963.142**
	60	-	114.008	-	-	BOX CULVERT	2.0 X 2.0	Balaning	**957.022**	**956.707**
	61	119.645	114.154	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**948.868**	**948.642**
	62	119.76	114.270	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**943.983**	**943.786**
	63	119.899	114.404	RCC	1 X 1.0M	BOX CULVERT	2.0 X 3.0	Reconstruction	**936.437**	**935.913**
	64	-	114.520	-	-	BOX CULVERT	2.0 X 2.0	Balaning	**929.622**	**929.392**
	65	-	114.688	-	-	BOX CULVERT	2.0 X 2.0	Balaning	**919.631**	**919.074**
	66	120.48	114.930	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**902.758**	**900.266**
	67	120.605	115.020	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**896.464**	**896.336**
	68	120.665	115.078	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**892.407**	**892.476**
	69	120.725	115.146	RCC	1 X 4.18M	BOX CULVERT	4.0 X 4.0	Reconstruction	**887.651**	**888.116**
	70	120.972	115.386	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**874.146**	**873.281**
	71	121.11	115.530	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**866.544**	**866.048**
	72	121.305	115.660	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**857.822**	**854.674**
	73	121.447	115.791	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**848.691**	**846.550**
	74	121.652	115.996	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**835.718**	**835.749**
	75	121.82	116.146	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**826.715**	**826.098**
	76	-	116.432	-	-	BOX CULVERT	2.0 X 2.0	Balaning	**809.550**	**808.555**
	77	-	116.720	-	-	BOX CULVERT	2.0 X 2.0	Balaning	**792.264**	**797.844**
	78	-	116.985	-	-	BOX CULVERT	2.0 X 2.0	Balaning	**776.359**	**784.937**
	79	123.005	117.281	RCC	1 X 4.12M	BOX CULVERT	4.0 X 4.0	Reconstruction	**757.910**	**764.416**
	80	123.06	117.336	RCC	1 X 3.80M	BOX CULVERT	4.0 X 4.0	Reconstruction	**754.063**	**761.393**
	81	-	117.586	-	-	BOX CULVERT	2.0 X 3.0	Balaning	**736.581**	**735.456**
	82	-	117.729	-	-	BOX CULVERT	2.0 X 3.0	Balaning	**727.067**	**728.634**
	83	-	118.690	-	-	BOX CULVERT	2.0 X 3.0	Balaning	**666.779**	**662.418**
	84	-	118.999	-	-	BOX CULVERT	2.0 X 2.0	Balaning	**660.792**	**659.411**
	85	-	119.196	-	-	BOX CULVERT	2.0 X 2.0	Balaning	**657.111**	**654.256**
	86	-	119.555	-	-	BOX CULVERT	2.0 X 2.0	Balaning	**645.797**	**644.202**
	87	-	119.931	-	-	BOX CULVERT	2.0 X 2.0	Balaning	**630.852**	**627.095**
	88	133.065	120.683	RCC	1 X 2.75M	BOX CULVERT	3.0 X 3.0	Reconstruction	**600.359**	**599.210**
	89	133.125	120.744	RCC	1 X 2.63M	BOX CULVERT	3.0 X 3.0	Reconstruction	**599.276**	**596.456**
	90	133.52	121.121	RCC	1 X 2.75M	BOX CULVERT	3.0 X 3.0	Reconstruction	**583.611**	**581.053**
	91	133.81	121.393	HP	1 X 1.0M	BOX CULVERT	2.0 X 2.0	Reconstruction	**573.179**	**572.646**



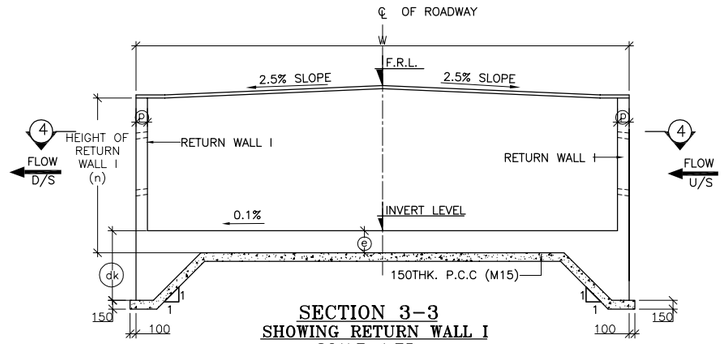
SECTION 1–1
SCALE–1:75



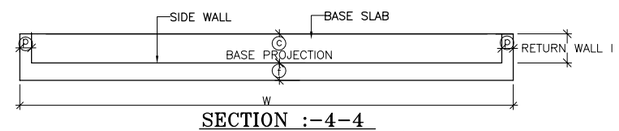
SECTION 2–2
(SCALE–1:60)

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

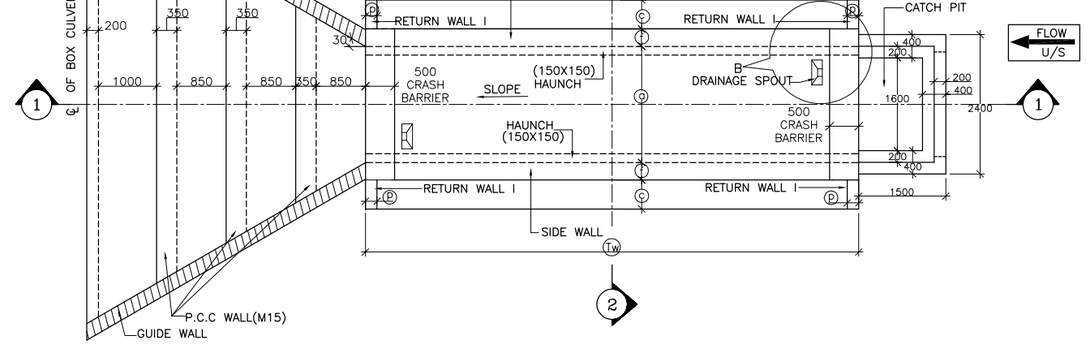
BOX CELL DESIGNATION No/ab/Ec		1/23/0
TABLE SHOWING SALIENT DIMENSIONS	a	2000
	b	3000
	c	1300
	d	508
	e	420
	f	350
	g	370
	n	3790
	p	300



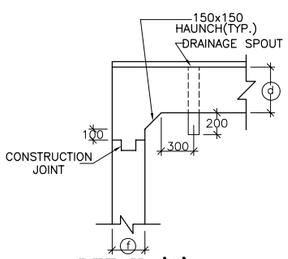
SECTION 3–3
SHOWING RETURN WALL I
SCALE–1:75



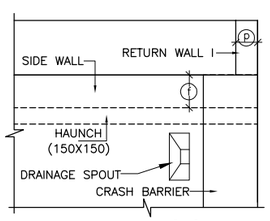
SECTION :–4–4
(SHOWING RETURN WALL I)
SCALE–1:75



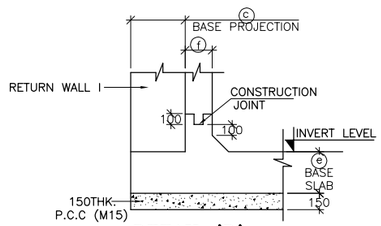
PLAN
(SCALE–1:75)



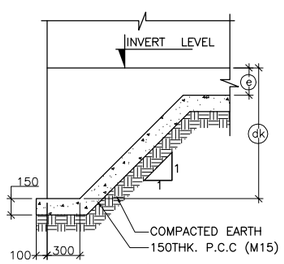
DETAIL 'A'
(SCALE–1:40)



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. γ=1.8t/m^3 , ϕ=30°.
5. PROPERTIES OF BACKFILL SOIL
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–IIIC/BC/MISC (SHEET NO.–01)

					SCALE: AS SHOWN
R0					DATE: APRIL, 2020
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

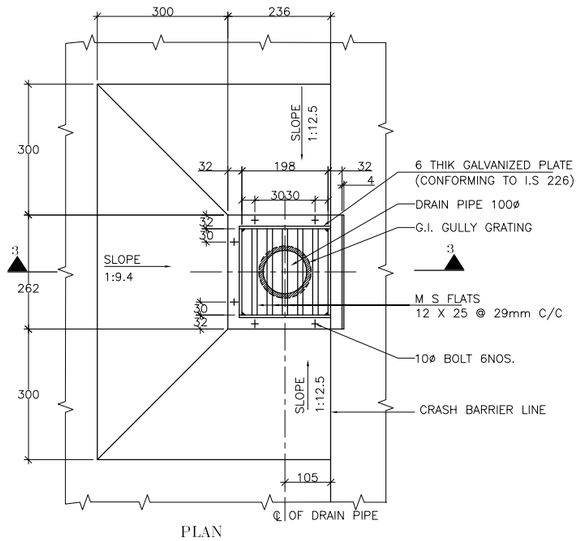
SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT (PACKAGE-IIIC)

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-IIIC/BC/C-STP/NC/GA

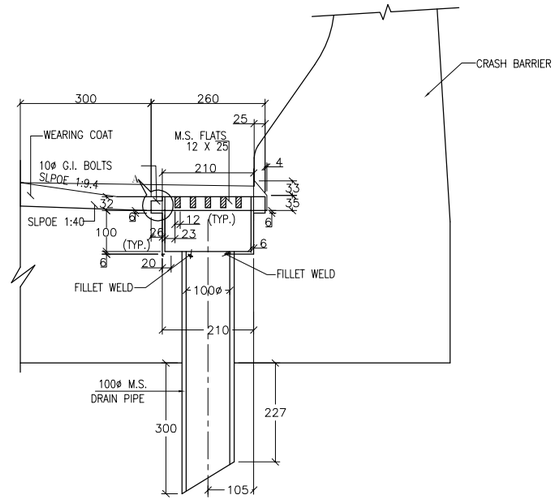
REVISION MKD. - R0 | SHEET NO. - 1 OF 1

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



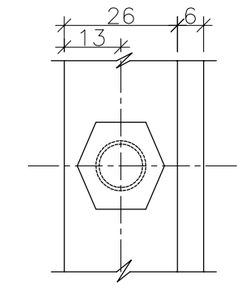
PLAN
DETAIL OF DRAINAGE
SPOUT AND COLLECTION PIT

SCALE– 1:10



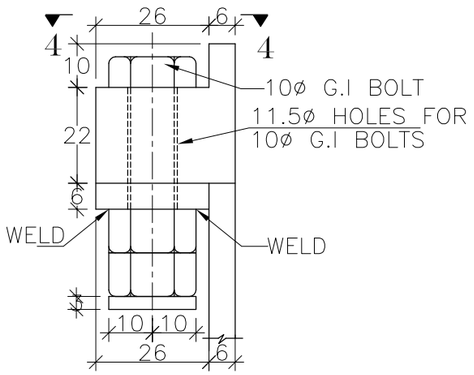
SECTION 3–3

SCALE– 1:10



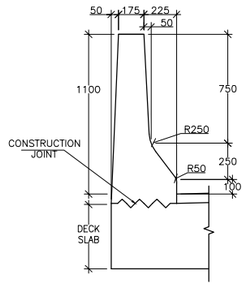
PLAN AT 4–4

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.

					SCALE: AS SHOWN
R0					DATE: APRIL, 2020
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.	
REVISIONS					

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

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-IIIC/ BC/MISC

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

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