

Consultancy Services for Carrying out Feasibility Study, Preparation of Detailed Project Report and providing pre-construction services in respect of 2 laning of *Maram-Peren-Dimapur section on NH 129A* (Manipur & Nagaland) on Engineering, Procurement and Construction mode in the state of Manipur & Nagaland. (Package No. NHIDCL/DPR/SN-DMP-PC/Manipur/2016)

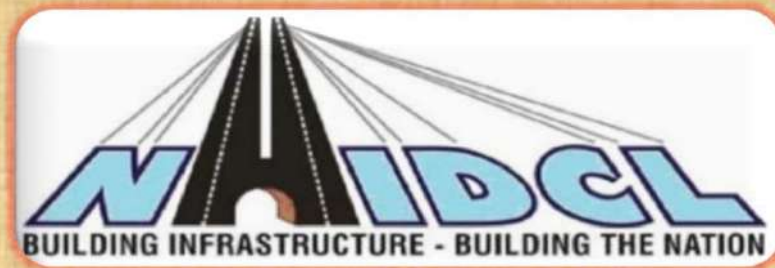
PEREN to DIMAPUR

PEREN TOWN

Design Ch. Km-120.320 to Km-123.200

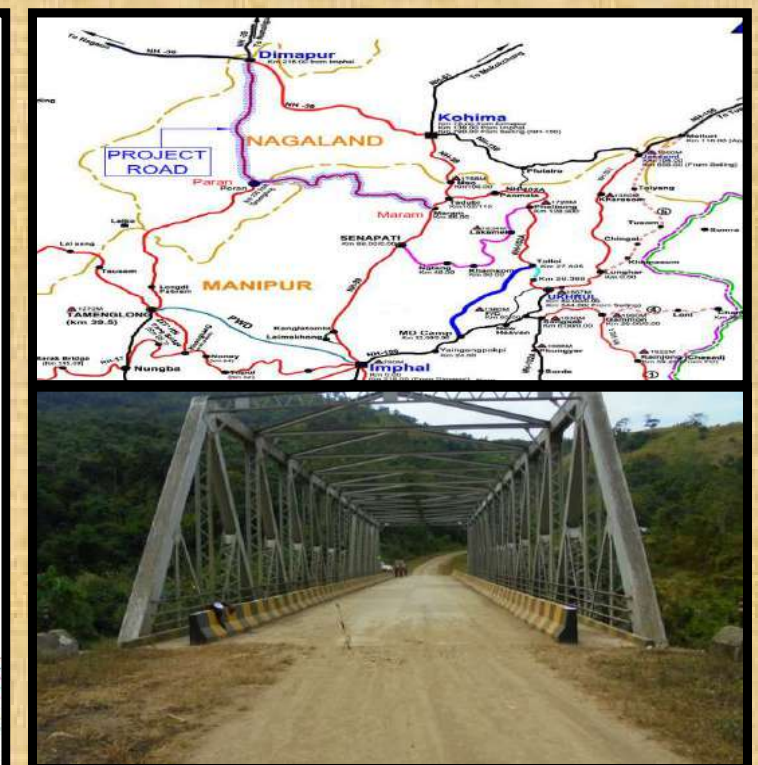
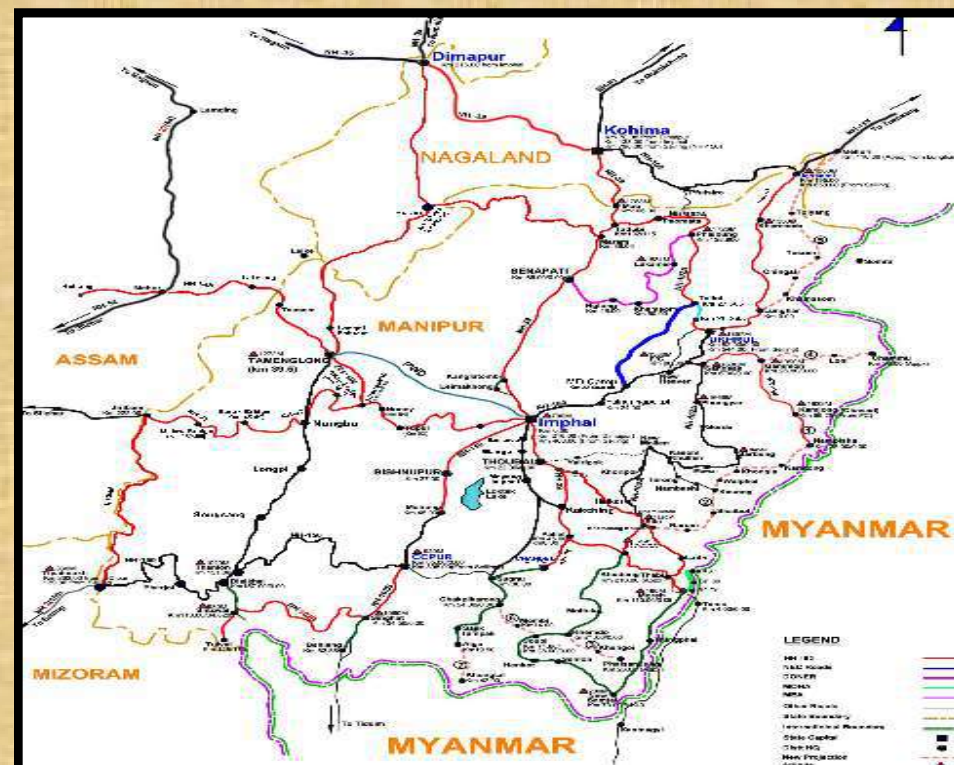
Final Detailed Project Report

PART-A HIGHWAY DRAWINGS
PART-B STRUCTURAL DRAWINGS



**National Highways &
Infrastructure
Development Corporation
Ltd.**

**PTI Building, 3rd Floor, 4,
Parliament Street,
New Delhi-110001**

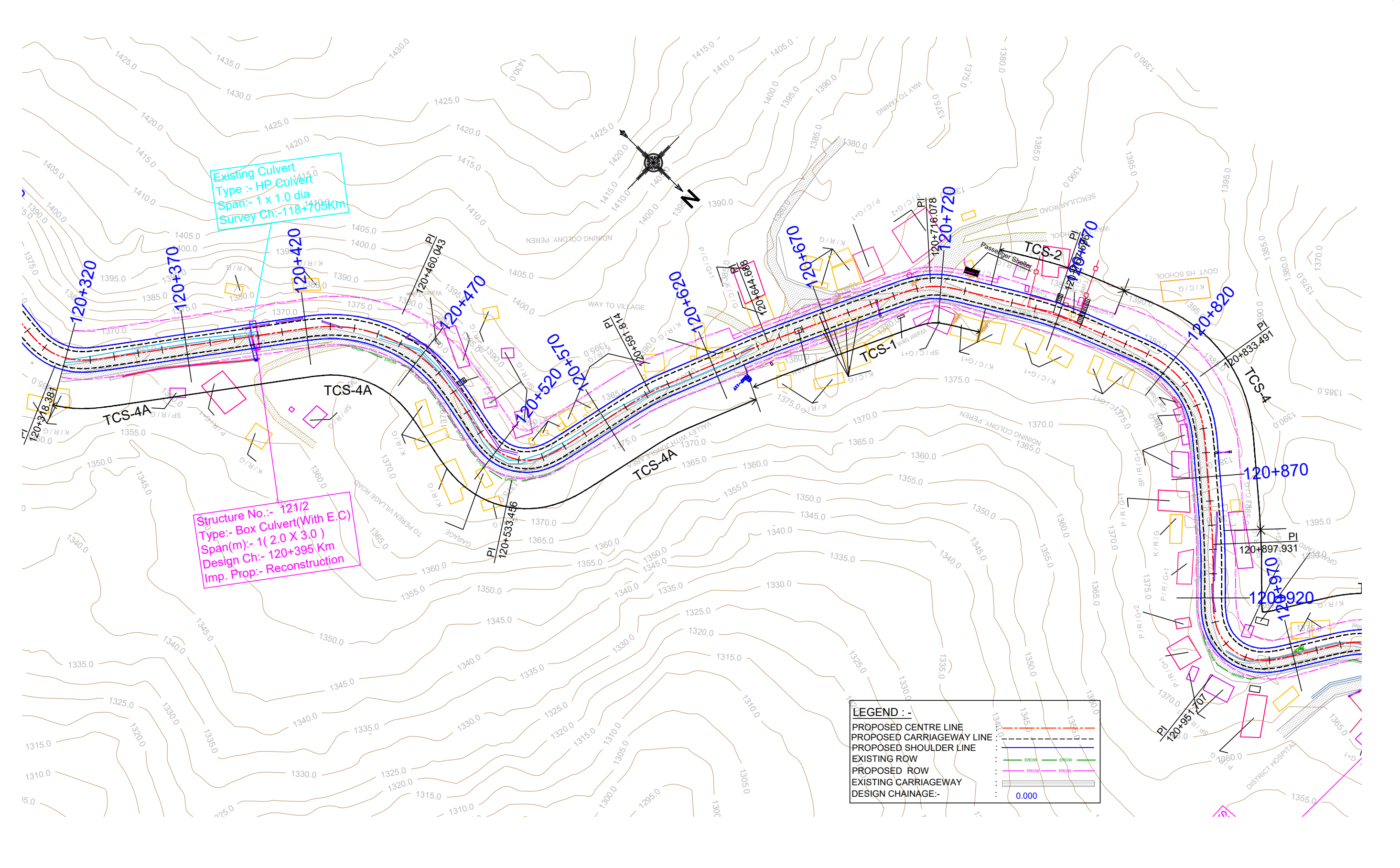


C. E. Testing Company Pvt. Ltd.
124-A, NSC Bose Road, Kolkata -92

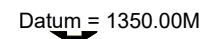
PART-A

HIGHWAY DRAWINGS

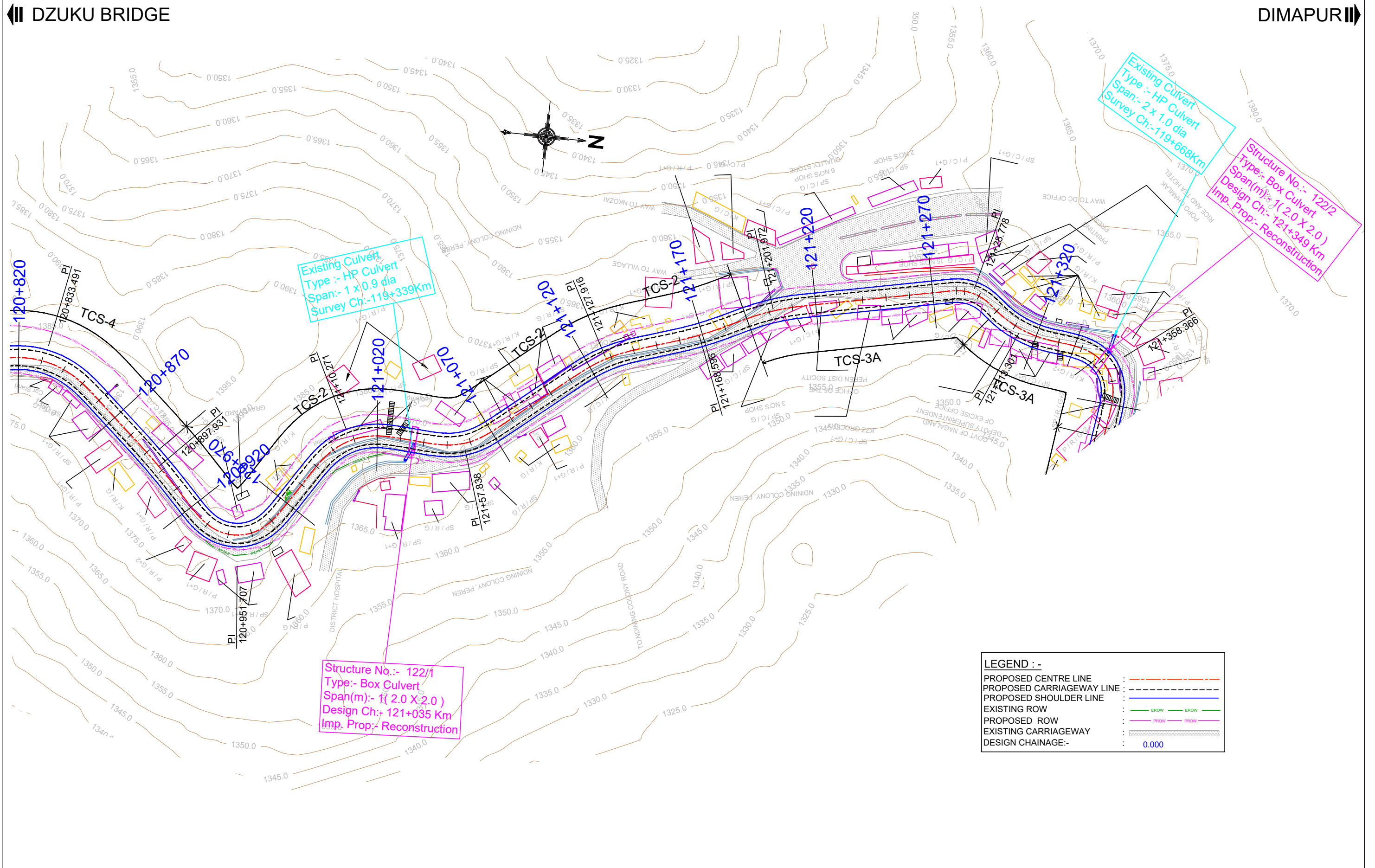
PLAN & PROFILE



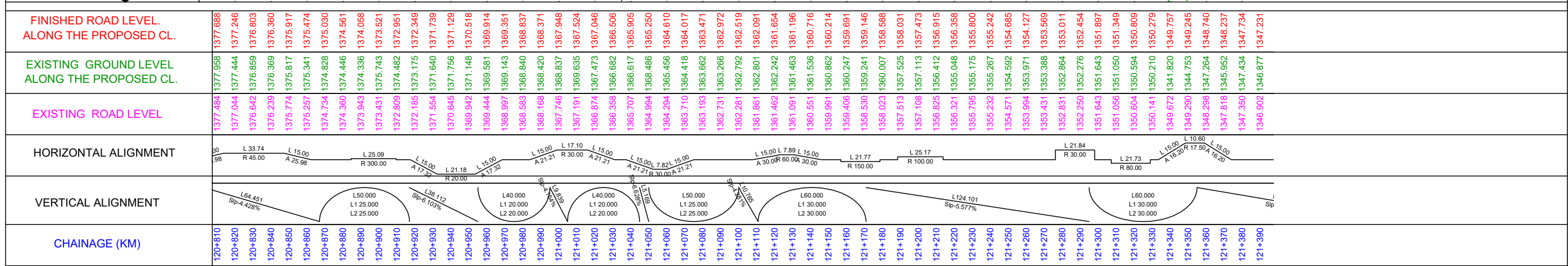
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					DATE: AUG,2023		PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF PEREN- DIMAPUR SECTION ON NH 129A ON ENGINEERING, PROCUREMENT AND CONSTRUCTION MODE IN THE STATE OF NAGALAND.		SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT		PACKAGE:-NHIDCL/DPR/SN-DMP-PC/MANIPUR/2016		REVISION MKD. - R2		SHEET NO. - 1	
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Modified as per Proposed Right of Way 12 Meter													CHECKED BY S.SADHU		ISSUED BY B.KONER	



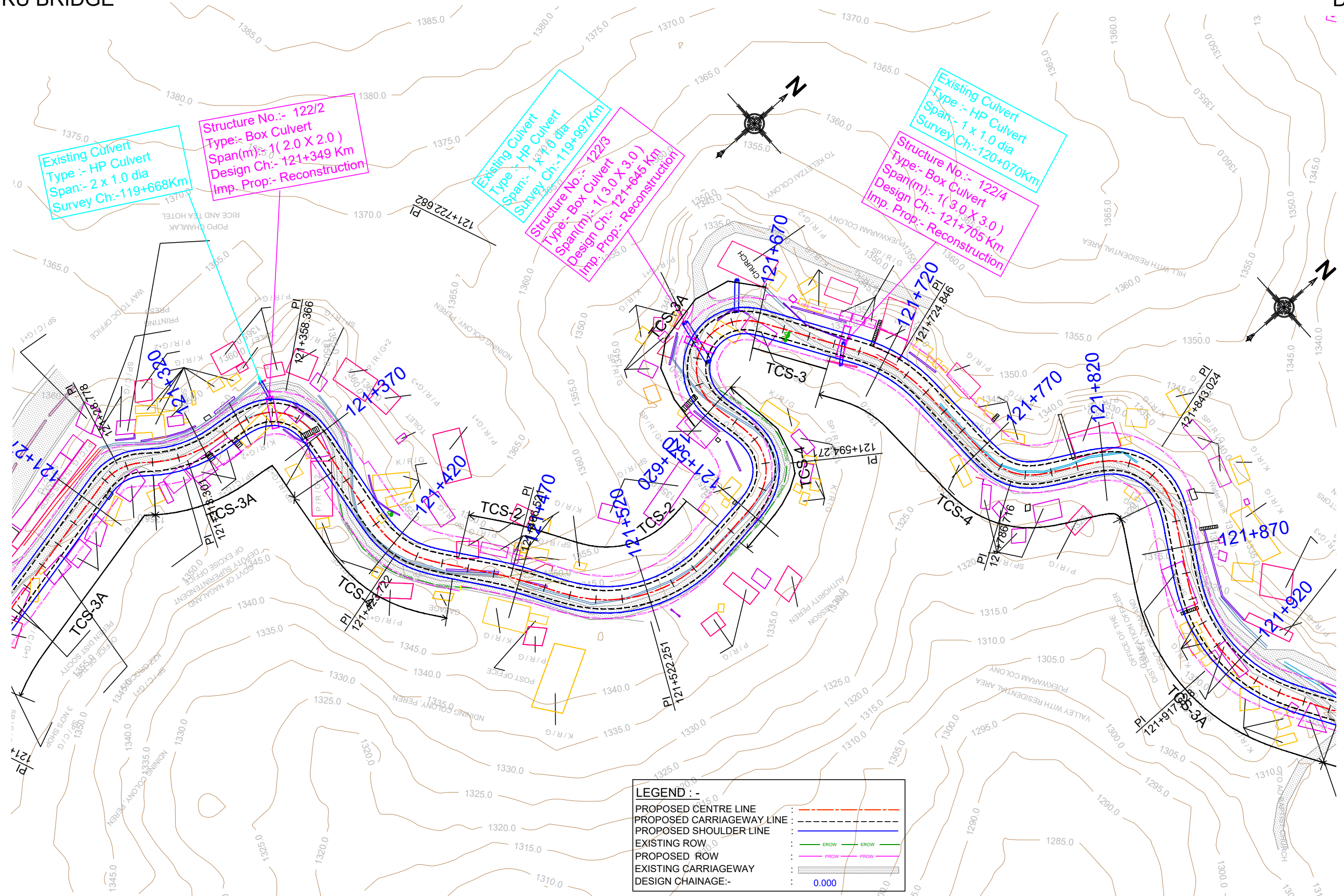
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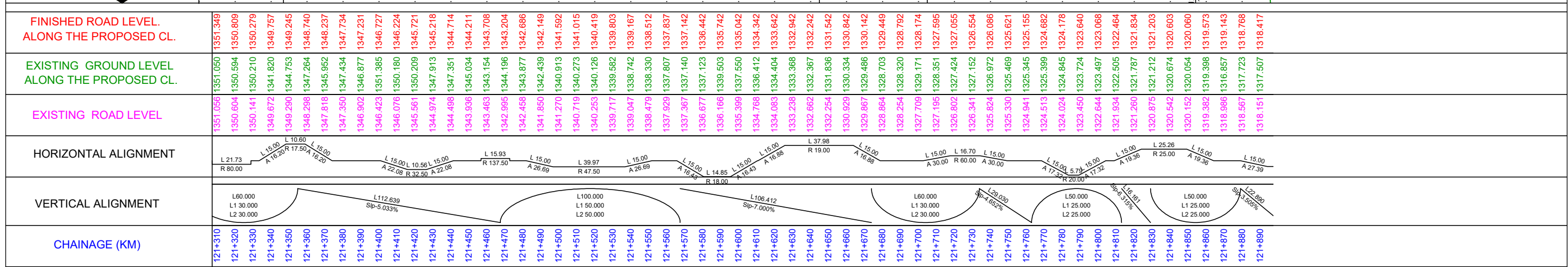
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													CHECKED BY	
													ISSUED BY	
													G.Banerjee (G Banerjee)	
													B.DAS	
													S.SADHU	
													B.KONER	



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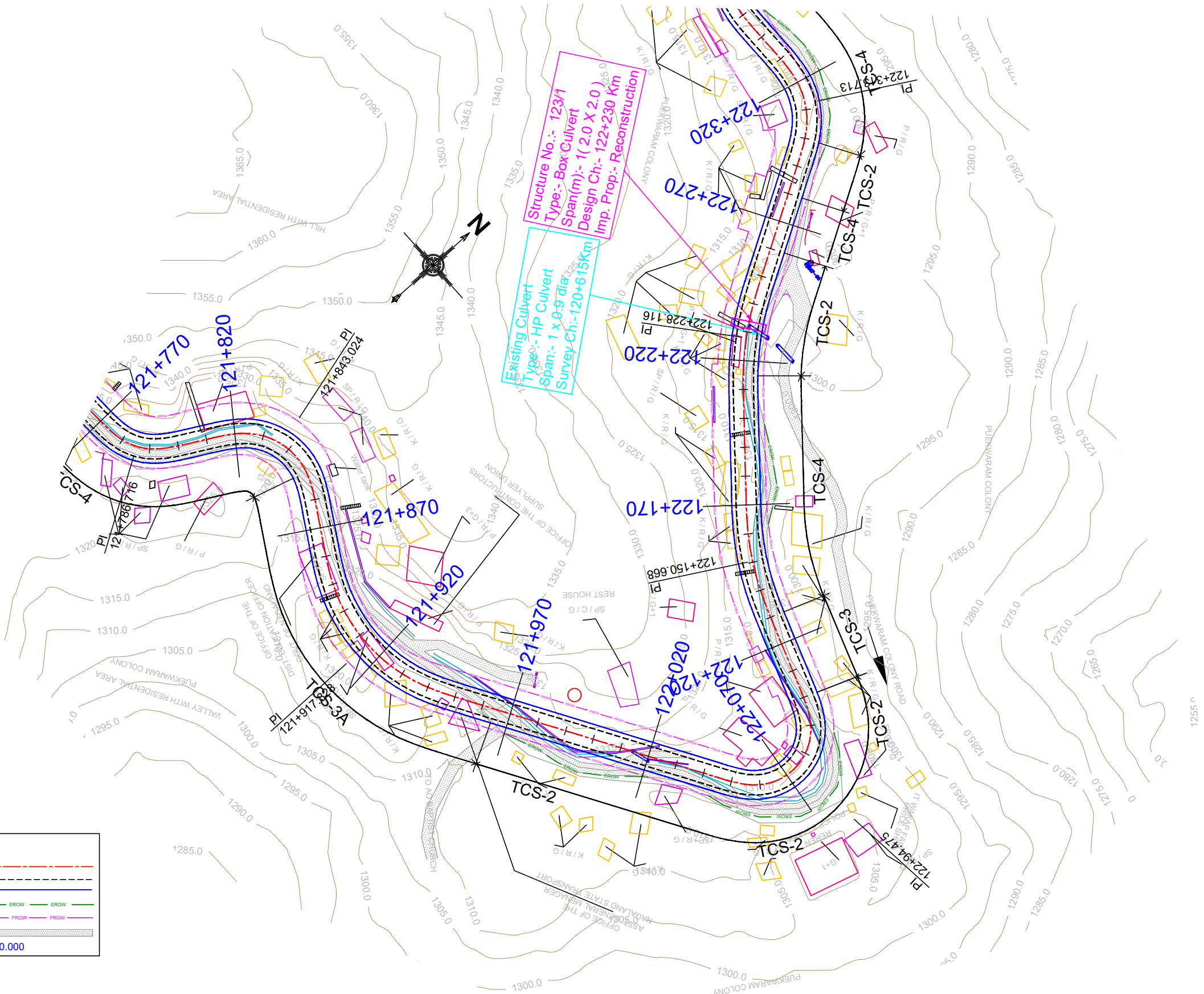


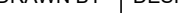
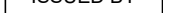
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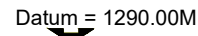


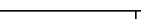
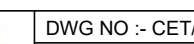
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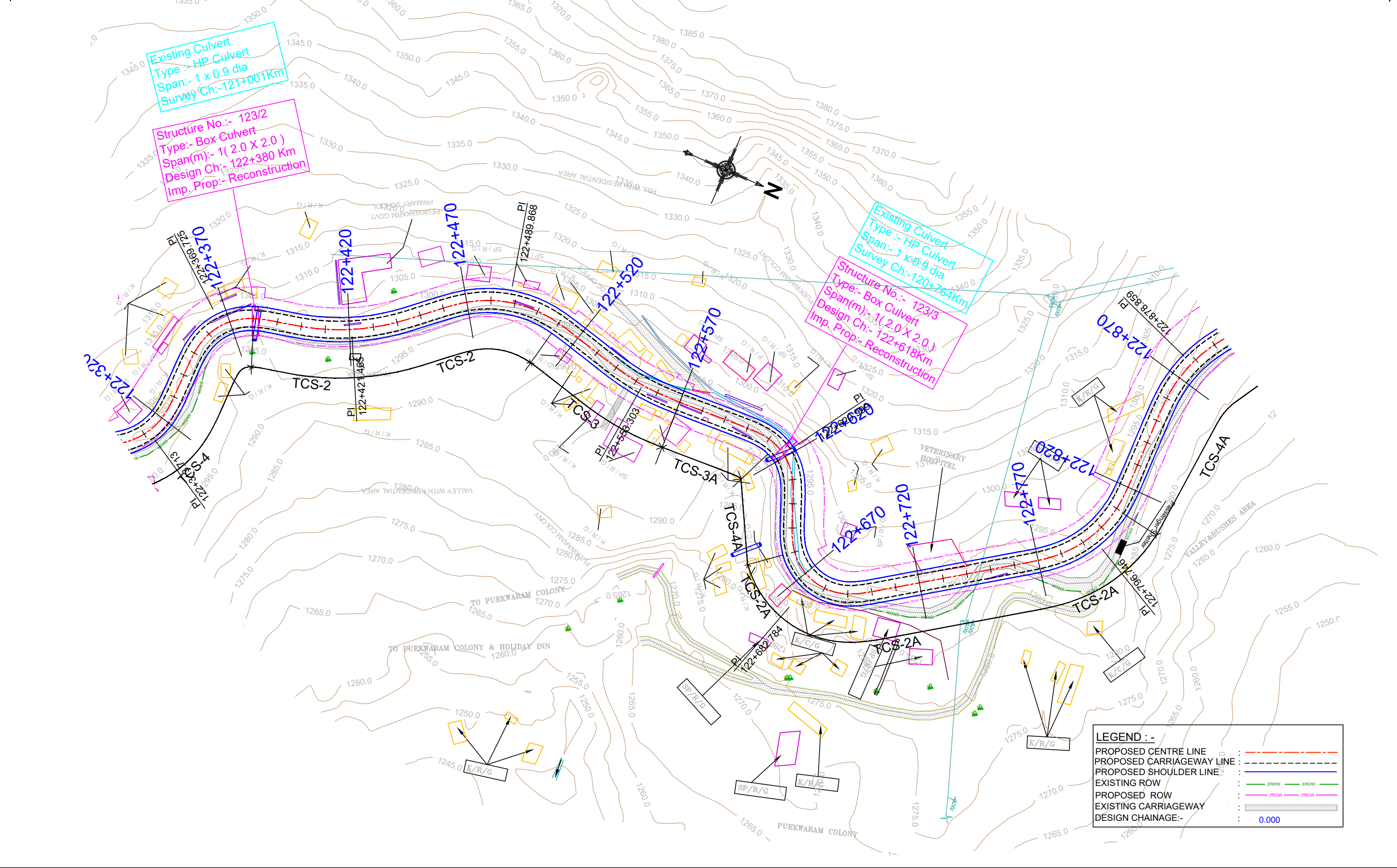
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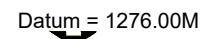
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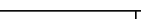
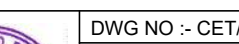


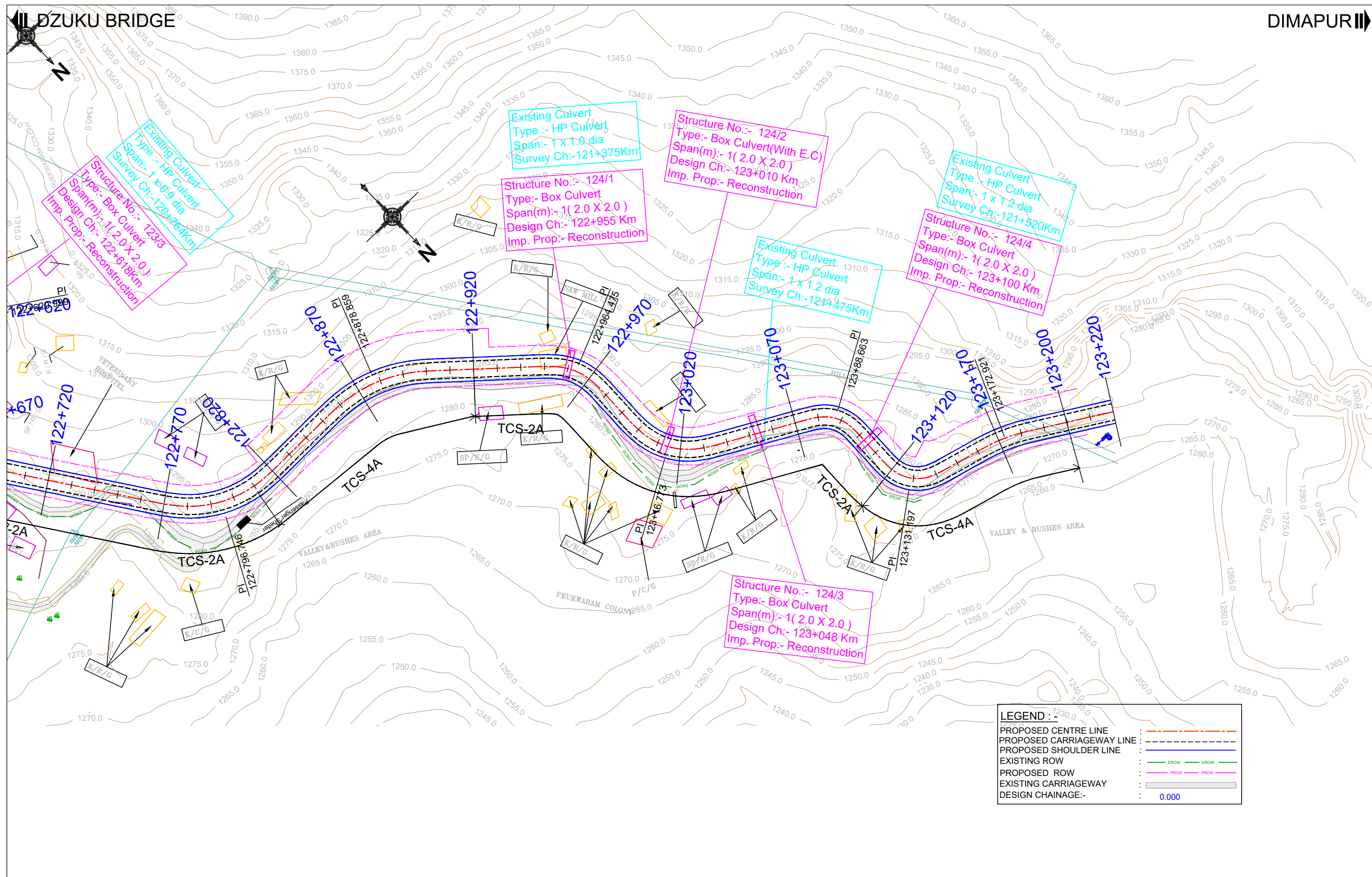
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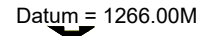
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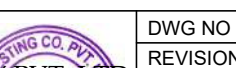
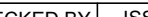


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					Scale :- Hor-1:1500 Ver-1:150		CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building, 3rd Floor, 4, Parliament Street, New Delhi - 110001	PROFILE Peren-Dimapur Package-I Km 123+000 to Km 123+500		CONSULTANT :  CETEST Engineering Consultants ANSO 5001, 14801 & OHSAS 18001 Certified Company	 CE TESTING COMPANY PVT. LTD. 124-A, N.S.C. Bose Road Kolkata - 700092	DWG NO :- CET/4046/NHIDCL/NH-129A/P-D/FDPR/PROFILE			
									REVISION MKD. - R2			SHEET NO. - 6			
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.	DATE: AUG.2023			PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF PEREN-DIMAPUR SECTION ON NH 129A ON ENGINEERING, PROCUREMENT AND CONSTRUCTION MODE IN THE STATE OF NAGALAND.	SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT					DRAWN BY  (G Banerjee)	DESIGNED BY  B.DAS
Modified as per Proposed Right of Way 12 Meter							PACKAGE :-NHIDCL/DPR/SN-DMP-PC/MANIPUR/2016								

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							
1	120+311.283	120+318.381	120+322.420	2823971.402	574052.156	25	25^31'34.82"	15	11.1	7.0	Right	20
2	120+429.298	120+460.043	120+482.259	2824059.305	573937.190	60	50^34'29.43"	15	53.0	3.0	Left	20
3	120+520.848	120+533.456	120+536.945	2824139.366	573954.647	20	46^06'59.25"	15	16.1	7.0	Right	30
4	120+583.352	120+591.814	120+600.236	2824154.788	573888.956	100	9^40'26.14"	--NA--	16.9	Normal Camber	Left	20
5	120+636.936	120+644.688	120+652.438	2824175.367	573840.207	300	2^57'38.42"	--NA--	15.5	Normal Camber	Right	30
6	120+715.010	120+716.078	120+716.487	2824206.492	573775.956	28	3^01'15.89"	15	1.5	6.3	Right	20
7	120+764.541	120+767.596	120+770.589	2824251.478	573749.523	125	2^46'19.91"	15	6.0	3.2	Right	30
8	120+816.797	120+833.491	120+845.121	2824313.139	573726.112	40	40^34'18.04"	15	28.3	7.0	Right	30
9	120+885.380	120+897.931	120+910.467	2824365.380	573771.955	300	4^47'28.62"	--NA--	25.1	Normal Camber	Right	30
10	120+933.207	120+951.707	120+954.390	2824402.707	573810.686	20	60^41'05.07"	15	21.2	7.0	Left	20
11	120+999.821	121+010.271	121+016.923	2824442.564	573747.886	30	32^39'47.12"	15	17.1	5.9	Right	20
12	121+053.237	121+057.838	121+061.054	2824493.822	573751.213	30	14^55'45.22"	15	7.8	5.9	Left	20
13	121+123.801	121+127.916	121+131.696	2824548.674	573705.407	60	7^32'20.09"	15	7.9	6.7	Right	30
14	121+157.689	121+168.596	121+179.463	2824587.681	573692.732	150	8^19'01.22"	--NA--	21.8	2.7	Left	30
15	121+189.318	121+201.972	121+214.492	2824617.632	573677.917	100	14^25'26.12"	--NA--	25.2	4.0	Right	30
16	121+278.252	121+287.780	121+296.035	2824701.728	573660.204	20	50^56'39.27"	--NA--	17.8	7.0	Right	20
17	121+299.588	121+313.301	121+326.272	2824722.536	573677.084	47	32^31'46.00"	--NA--	26.7	7.0	Left	30
18	121+346.386	121+358.366	121+360.943	2824768.046	573682.285	18.5	45^05'00.04"	15	14.6	7.0	Right	20
19	121+417.637	121+423.722	121+428.192	2824757.564	573756.307	32.5	18^36'29.14"	15	10.6	5.5	Left	20
20	121+458.548	121+466.521	121+474.475	2824784.288	573791.781	137.5	6^38'11.36"	--NA--	15.9	2.9	Right	30
21	121+495.019	121+522.251	121+541.355	2824812.462	573839.886	53	50^05'28.98"	15	46.3	7.0	Left	30
22	121+581.602	121+594.271	121+596.451	2824892.068	573830.587	18	47^15'53.73"	15	14.8	7.0	Left	20
23	121+624.096	121+722.682	121+664.987	2824863.961	573694.560	18.25	128^22'45.71"	10	40.9	7.0	Right	20
24	121+709.158	121+724.846	121+739.800	2824947.690	573829.074	58	30^16'11.19"	--NA--	30.6	6.9	Right	30
25	121+782.538	121+786.716	121+788.330	2824949.471	573891.652	20	16^35'36.78"	15	5.8	7.0	Left	20
26	121+825.686	121+843.024	121+848.531	2825001.059	573920.018	23.5	55^41'49.27"	15	22.8	7.0	Right	20
27	121+890.307	121+917.828	121+938.184	2824956.344	573994.222	58	47^17'43.08"	15	47.9	6.9	Left	30
28	122+060.136	122+094.475	122+088.657	2825051.125	574151.713	19.25	84^53'25.14"	15	28.5	7.0	Left	20
29	122+140.518	122+150.668	122+160.387	2825083.166	574060.846	95	11^59'00.21"	15	19.9	4.2	Right	30
30	122+218.623	122+228.116	122+237.259	2825133.696	574001.586	100	10^40'41.09"	15	18.6	4.0	Right	30
31	122+305.480	122+313.713	122+318.750	2825207.922	573958.257	27.25	27^54'00.11"	15	13.3	6.5	Left	20
32	122+356.795	122+369.725	122+375.816	2825208.218	573899.051	25.25	43^09'45.45"	15	19.0	7.0	Right	20
33	122+397.516	122+421.465	122+444.416	2825265.406	573886.358	94	28^35'11.77"	--NA--	46.9	4.3	Left	30
34	122+470.977	122+489.868	122+504.398	2825317.704	573840.736	50	38^17'49.60"	15	33.4	7.0	Right	30
35	122+547.173	122+553.303	122+559.200	2825383.375	573857.580	90	7^39'23.67"	15	12.0	4.4	Left	30
36	122+611.946	122+620.999	122+625.215	2825451.221	573854.238	22.75	33^25'07.32"	15	13.3	7.0	Right	20
37	122+660.449	122+682.784	122+687.555	2825475.772	573916.172	23.5	66^05'10.75"	15	27.1	7.0	Left	20
38	122+778.336	122+796.746	122+810.739	2825584.448	573842.088	48.25	38^28'36.96"	15	32.4	7.0	Left	30
39	122+863.813	122+878.859	122+891.717	2825583.586	573755.563	58	27^33'57.00"	15	27.9	6.9	Right	30
40	122+960.877	122+964.475	122+966.352	2825642.124	573690.121	23.5	13^20'56.48"	15	5.5	7.0	Right	20
41	123+005.639	123+016.773	123+023.733	2825696.118	573691.755	30	34^33'21.68"	15	18.1	5.9	Left	20
42	123+083.512	123+088.663	123+091.455	2825732.448	573624.927	16.25	28^00'11.50"	10	7.9	7.0	Right	20
43	123+122.729	123+131.197	123+135.194	2825777.319	573626.331	16.75	42^38'20.36"	10	12.5	7.0	Left	20
44	123+162.428	123+172.921	123+183.272	2825789.234	573581.697	73	16^21'36.93"	--NA--	20.8	5.5	Right	30

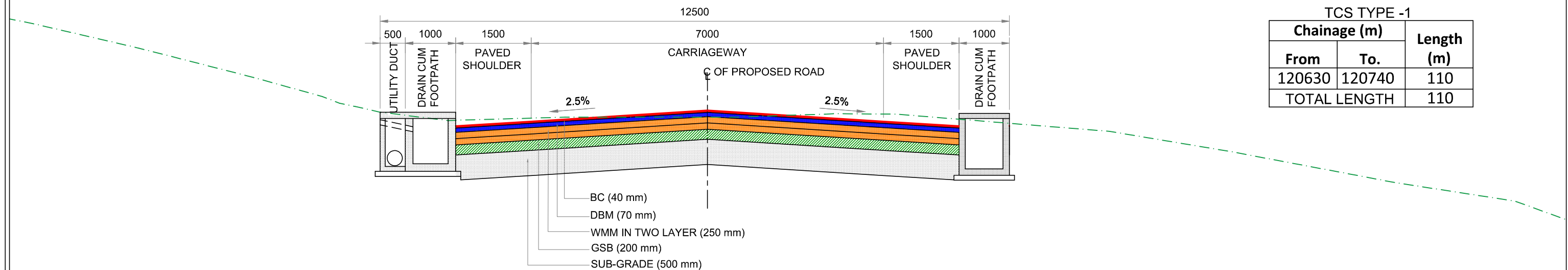
HORIZONTAL ALIGNMENT REPORT																			
HIP/CUR VE NO.	HIP		DEFLECTION ANGLE			ELEMENT	START			END			LENGTH (m)	CHORD LENGTH (m)	RADIUS (m)	HAND OF ARC	SUPEREL EVATION (%)	DESIGN SPEED	EXTRA WIDENING
	EASTING	NORTHING	DEG	MIN	SEC		CHAINAGE (m)	EASTING	NORTHING	CHAINAGE (m)	EASTING	NORTHING							
1	574048.786	2823969.996	25	31	34.82	Arc	120320.000	574046.913	2823972.393	120322.420	574045.505	2823974.611		11.138	25	Right	7.0	20	1.5
						Transition	120322.420	574045.505	2823974.611	120337.420	574034.601	2823984.825		15					
						Straight	120337.420	574034.601	2823984.825	120414.298	573973.530	2824031.520	76.877						
						Transition	120414.298	573973.530	2824031.520	120429.298	573962.012	2824041.112		15					
2	573941.816	2824061.003	50	34	29.43	Arc	120429.298	573962.012	2824041.112	120482.259	573944.355	2824089.234		52.962	60	Left	3.0	20	1.2
						Transition	120482.259	573944.355	2824089.234	120497.259	573946.936	2824104.000		15					
						Straight	120497.259	573946.936	2824104.000	120505.848	573948.765	2824112.391	8.588						
						Transition	120505.848	573948.765	2824112.391	120520.848	573950.103	2824127.238		15					
3	573948.744	2824135.642	46	6	59.25	Arc	120520.848	573950.103	2824127.238	120536.945	573941.744	2824140.488		16.098	20	Right	7.0	30	1.5
						Transition	120536.945	573941.744	2824140.488	120551.945	573927.770	2824145.676		15					
						Straight	120551.945	573927.770	2824145.676	120583.352	573897.194	2824152.854	31.406						
4	573888.956	2824154.788	9	40	26.14	Arc	120583.352	573897.194	2824152.854	120600.236	573881.160	2824158.079		16.884	100	Left	Normal Camber	20	0.9
						Straight	120600.236	573881.160	2824158.079	120636.936	573847.350	2824172.352	36.700						
5	573840.207	2824175.367	2	57	38.42	Arc	120636.936	573847.350	2824172.352	120652.438	573833.230	2824178.747		15.502	300	Right	Normal Camber	30	0.6
						Straight	120652.438	573833.230	2824178.747	120700.010	573790.416	2824199.487	47.573						
						Transition	120700.010	573790.416	2824199.487	120715.010	573777.594	2824207.179		15					
6	573777.039	2824207.665	3	1	15.89	Arc	120715.010	573777.594	2824207.179	120716.487	573776.509	2824208.180		1.476	28	Right	6.3	20	1.5
						Transition	120716.487	573776.509	2824208.180	120731.487	573767.816	2824220.345		15					
						Straight	120731.487	573767.816	2824220.345	120749.541	573758.669	2824235.911	18.055						
						Transition	120749.541	573758.669	2824235.911	120764.541	573751.332	2824248.991		15					
7	573749.958	2824251.686	2	46	19.91	Arc	120764.541	573751.332	2824248.991	120770.589	573748.717	2824254.445		6.048	125	Right	3.2	30	0.6
						Transition	120770.589	573748.717	2824254.445	120785.589	573743.114	2824268.356		15					
						Straight	120785.589	573743.114	2824268.356	120801.797	573737.362	2824283.509	16.208						
						Transition	120801.797	573737.362	2824283.509	120816.797	573732.930	2824297.815		15					
8	573730.351	2824312.373	40	34	18.04	Arc	120816.797	573732.930	2824297.815	120845.121	573737.860	2824325.109		28.324	40	Right	7.0	30	1.5
						Transition	120845.121	573737.860	2824325.109	120860.121	573747.016	2824336.961		15					
						Straight	120860.121	573747.016	2824336.961	120885.380	573763.676	2824355.947	25.259						
9	573771.955	2824365.380	4	47	28.62	Arc	120885.380	573763.676	2824355.947	120910.467	573780.992	2824374.090		25.087	300	Right	Normal Camber	30	0.6
						Straight	120910.467	573780.992	2824374.090	120918.207	573786.565	2824379.461	7.740						
						Transition	120918.207	573786.565	2824379.461	120933.207	573795.927	2824391.061		15					
10	573800.795	2824401.707	60	41	5.07	Arc	120933.207	573795.927	2824391.061	120954.390	573793.895	2824411.165		21.183	20	Left	7.0	20	1.5
						Transition	120954.390	573793.895	2824411.165	120969.390	573782.402	2824420.658		15					
						Straight	120969.390	573782.402	2824420.658	120984.821	573769.374	2824428.926	15.431						
						Transition	120984.821	573769.374	2824428.926	120999.821	573757.455	2824437.965		15					
11	573751.430	2824444.365	32	39	47.12	Arc	120999.821	573757.455	2824437.965	121016.923	573749.811	2824453.005		17.102	30	Right	5.9	20	1.5
						Transition	121016.923	573749.811	2824453.005	121031.923	573749.534	2824467.961		15					
						Straight	121031.923	573749.534	2824467.961	121038.237	573749.943	2824474.261	6.314						
						Transition	121038.237	573749.943	2824474.261	121053.237	573749.667	2824489.217		15					
12	573748.943	2824493.081	14	55	45.22	Arc	121053.237	573749.667	2824489.217	121061.054	573747.248	2824496.627		7.817	30	Left	5.9	20	1.5
						Transition	121061.054	573747.248	2824496.627	121076.054	573738.649	2824508.867		15					
						Straight	121076.054	573738.649	2824508.867	121108.801	573717.659	2824534.003	32.748						
						Transition	121108.801	573717.659	2824534.003	121123.801	573708.538	2824545.898		15					
13	573706.403	2824549.225	7	32	20.09	Arc	121123.801	573708.538	2824545.898	121131.696	573704.722	2824552.803		7.895	60	Right	6.7	30	1.2
						Transition	121131.696	573704.722	2824552.803	121146.696	573699.500	2824566.853		15					
						Straight	121146.696	573699.500	2824566.853	121157.689	573696.102	2824577.308	10.993						
14	573692.732	2824587.681	8	19	1.22	Arc	121157.689	573696.102	2824577.308	121179.463	573687.897	2824597.456		21.774	150	Left	2.7	30	0.6
						Straight	121179.463	573687.897	2824597.456	121189.318	573683.528	2824606.289	9.855						
15	573677.917	2824617.632	14	25	26.12	Arc	121189.318	573683.528	2824606.289	121214.492	573675.309	2824630.014		25.174	100	Right	4.0	30	0.9
						Straight	121214.492	573675.309	2824630.014	121278.252	573662.168	2824692.405	63.760						
16	573660.204	2824701.728	50	56	39.27	Arc	121278.252	573662.168	2824692.405	121									

						Straight	121375.943	573708.999	2824764.263	121402.637	573735.430	2824760.520	26.694						
						Transition	121402.637	573735.430	2824760.520	121417.637	573750.364	2824759.566		15					
19	573755.667	2824760.045	18	36	29.14	Arc	121417.637	573750.364	2824759.566	121428.192	573760.539	2824762.192		10.555	32.5	Left	5.5	20	1.5
						Transition	121428.192	573760.539	2824762.192	121443.192	573773.148	2824770.251		15					
						Straight	121443.192	573773.148	2824770.251	121458.548	573785.414	2824779.491	15.357						
20	573791.781	2824784.288	6	38	11.36	Arc	121458.548	573785.414	2824779.491	121474.475	573798.660	2824788.317		15.926	137.5	Right	2.9	30	0.6
						Straight	121474.475	573798.660	2824788.317	121480.019	573803.445	2824791.119	5.545						
						Transition	121480.019	573803.445	2824791.119	121495.019	573816.005	2824799.294		15					
21	573835.397	2824814.699	50	5	28.98	Arc	121495.019	573816.005	2824799.294	121541.355	573836.021	2824839.457		46.336	53	Left	7.0	30	1.2
						Transition	121541.355	573836.021	2824839.457	121556.355	573834.986	2824854.408		15					
						Straight	121556.355	573834.986	2824854.408	121566.602	573833.797	2824864.585	10.247						
						Transition	121566.602	573833.797	2824864.585	121581.602	573830.043	2824878.989		15					
22	573826.041	2824885.773	47	15	53.73	Arc	121581.602	573830.043	2824878.989	121596.451	573818.343	2824887.437		14.849	18	Left	7.0	20	1.5
						Transition	121596.451	573818.343	2824887.437	121611.451	573803.490	2824886.469		15					
						Straight	121611.451	573803.490	2824886.469	121614.096	573800.900	2824885.934	2.645						
						Transition	121614.096	573800.900	2824885.934	121624.096	573790.996	2824884.815		10					
23	573753.354	2824887.462	128	22	45.71	Arc	121624.096	573790.996	2824884.815	121664.987	573778.800	2824915.326		40.892	18.25	Right	7.0	20	1.5
						Transition	121664.987	573778.800	2824915.326	121674.987	573786.746	2824921.343		10					
						Straight	121674.987	573786.746	2824921.343	121709.158	573815.756	2824939.400	34.171						
24	573829.074	2824947.690	30	16	11.19	Arc	121709.158	573815.756	2824939.400	121739.800	573844.755	2824948.136		30.642	58	Right	6.9	30	1.2
						Straight	121739.800	573844.755	2824948.136	121767.538	573872.482	2824948.925	27.738						
						Transition	121767.538	573872.482	2824948.925	121782.538	573887.214	2824951.202		15					
25	573889.896	2824952.347	16	35	36.78	Arc	121782.538	573887.214	2824951.202	121788.330	573892.140	2824954.210		5.792	20	Left	7.0	20	1.5
						Transition	121788.330	573892.140	2824954.210	121803.330	573900.893	2824966.276		15					
						Straight	121803.330	573900.893	2824966.276	121810.686	573904.437	2824972.722	7.356						
						Transition	121810.686	573904.437	2824972.722	121825.686	573912.979	2824984.970		15					
26	573922.073	2824993.423	55	41	49.27	Arc	121825.686	573912.979	2824984.970	121848.531	573934.180	2824990.675		22.844	23.5	Right	7.0	20	1.5
						Transition	121848.531	573934.180	2824990.675	121863.531	573947.715	2824984.369		15					
						Straight	121863.531	573947.715	2824984.369	121875.307	573957.802	2824978.290	11.776						
						Transition	121875.307	573957.802	2824978.290	121890.307	573970.961	2824971.115		15					
27	573994.223	2824960.921	47	17	43.08	Arc	121890.307	573970.961	2824971.115	121938.184	574017.490	2824971.101		47.877	58	Left	6.9	30	1.2
						Transition	121938.184	574017.490	2824971.101	121953.184	574030.654	2824978.270		15					
						Straight	121953.184	574030.654	2824978.270	122045.136	574109.439	2825025.684	91.952						
						Transition	122045.136	574109.439	2825025.684	122060.136	574121.104	2825034.953		15					
28	574131.610	2825049.080	84	53	25.14	Arc	122060.136	574121.104	2825034.953	122088.657	574118.474	2825060.803		28.521	19.25	Left	7.0	20	1.5
						Transition	122088.657	574118.474	2825060.803	122103.657	574105.182	2825067.533		15					
						Straight	122103.657	574105.182	2825067.533	122125.518	574084.565	2825074.803	21.861						
						Transition	122125.518	574084.565	2825074.803	122140.518	574070.558	2825080.160		15					
29	574061.446	2825084.207	11	59	0.21	Arc	122140.518	574070.558	2825080.160	122160.387	574053.372	2825090.058		19.869	95	Right	4.2	30	0.9
						Transition	122160.387	574053.372	2825090.058	122175.387	574041.709	2825099.484		15					
						Straight	122175.387	574041.709	2825099.484	122203.623	574020.224	2825117.804	28.235						
						Transition	122203.623	574020.224	2825117.804	122218.623	574009.060	2825127.816		15					
30	574002.423	2825134.396	10	40	41.09	Arc	122218.623	574009.060	2825127.816	122237.259	573997.120	2825142.091		18.637	100	Right	4.0	30	0.9
						Transition	122237.259	573997.120	2825142.091	122252.259	573989.238	2825154.849		15					
						Straight	122252.259	573989.238	2825154.849	122290.480	573969.970	2825187.858	38.221						
						Transition	122290.480	573969.970	2825187.858	122305.480	573961.283	2825200.024		15					
31	573956.410	2825204.722	27	54	0.11	Arc	122305.480	573961.283	2825200.024	122318.750	573949.905	2825206.595		13.269	27.25	Left	6.5	20	1.5
						Transition	122318.750	573949.905	2825206.595	122333.750	573935.025	2825208.038		15					
						Straight	122333.750	573935.025	2825208.038	122341.795	573926.980	2825208.078	8.045						
						Transition	122341.795	573926.980	2825208.078	122356.795	573912.120	2825209.628		15					
32	573902.584	2825212.599	43	9	45.45	Arc	122356.795	573912.120	2825209.628	122375.816	573897.661	2825221.289		19.022	25.25	Right	7.0	20	1.5
						Transition	122375.816	573897.661	2825221.289	122390.816	573892.999	2825235.485		15					
						Straight	122390.816	573892.999	2825235.485	122397.516	573891.547	2825242.026	6.700						
33	573886.358	2825265.406	28	35	11.77	Arc	122397.516	573891.547	2825242.026	122444.416	573870.615	2825283.452		46.899	94	Left	4.3	30	0.9
						Straight	122444.416	573870.615	2825283.452	122455.977	573863.015	2825292.164	11.561						
						Transition	122455.977	573863.015	2825292.164	122470.977	573853.741	2825303.935		15					
34	573844.411	2825318.576	38	17	49.6	Arc	122470.977	573853.741	2825303.935	122504.398	573846.163	2825335.849		33.421	50	Right	7.0	30	1.2
						Transition	122504.398	573846.163	2825335.849	122519.398	573849.156	2825350.532		15					
						Straight	122519.398	573849.156	2825350.532	122532.173	573852.330	2825362.907	12.776						
						Transition	122532.173	573852.330	2825362.907	122547.173	573855.651	2825377.530		15					
35	573856.657	2825383.468	7	39	23.67	Arc	122547.173	573855.651	2825377.530	122559.200	573856.862	2825389.487		12.027	90	Left	4.4	30	0.9
						Transition	122559.200	573856.862	2825389.487	122574.200	573856.541	2825404.479		15					
						Straight	122574.200	573856.541	2825404.479	122596.946	573855.422	2825427.197	22.745						

						Transition	122596.946	573855.422	2825427.197	122611.946	573856.325	2825442.097		15					
36	573858.216	2825448.660	33	25	7.32	Arc	122611.946	573856.325	2825442.097	122625.215	573863.408	2825453.096		13.269	22.75	Right	7.0	20	1.5
						Transition	122625.215	573863.408	2825453.096	122640.215	573876.598	2825460.085		15					
						Straight	122640.215	573876.598	2825460.085	122645.449	573881.465	2825462.014	5.234						
						Transition	122645.449	573881.465	2825462.014	122660.449	573894.684	2825468.958		15					
37	573906.409	2825478.765	66	5	10.75	Arc	122660.449	573894.684	2825468.958	122687.555	573902.197	2825493.460		27.105	23.5	Left	7.0	20	1.5
						Transition	122687.555	573902.197	2825493.460	122702.555	573895.142	2825506.621		15					
						Straight	122702.555	573895.142	2825506.621	122763.336	573860.906	2825556.843	60.782						
						Transition	122763.336	573860.906	2825556.843	122778.336	573851.836	2825568.770		15					
38	573840.312	2825581.048	38	28	36.96	Arc	122778.336	573851.836	2825568.770	122810.739	573823.651	2825583.489		32.402	48.25	Left	7.0	30	1.2
						Transition	122810.739	573823.651	2825583.489	122825.739	573808.680	2825584.115		15					
						Straight	122825.739	573808.680	2825584.115	122848.813	573785.607	2825583.885	23.074						
						Transition	122848.813	573785.607	2825583.885	122863.813	573770.627	2825584.382		15					
39	573756.500	2825586.076	27	33	57	Arc	122863.813	573770.627	2825584.382	122891.717	573744.761	2825594.115		27.905	58	Right	6.9	30	1.2
						Transition	122891.717	573744.761	2825594.115	122906.717	573733.169	2825603.617		15					
						Straight	122906.717	573733.169	2825603.617	122945.877	573703.982	2825629.725	39.160						
						Transition	122945.877	573703.982	2825629.725	122960.877	573693.972	2825640.805		15					
40	573692.601	2825643.189	13	20	56.48	Arc	122960.877	573693.972	2825640.805	122966.352	573691.818	2825645.825		5.475	23.5	Right	7.0	20	1.5
						Transition	122966.352	573691.818	2825645.825	122981.352	573690.683	2825660.714		15					
						Straight	122981.352	573690.683	2825660.714	122990.639	573690.964	2825669.997	9.287						
						Transition	122990.639	573690.964	2825669.997	123005.639	573690.171	2825684.934		15					
41	573688.137	2825694.041	34	33	21.68	Arc	123005.639	573690.171	2825684.934	123023.733	573681.297	2825700.387		18.093	30	Left	5.9	20	1.5
						Transition	123023.733	573681.297	2825700.387	123038.733	573668.794	2825708.600		15					
						Straight	123038.733	573668.794	2825708.600	123073.512	573638.238	2825725.211	34.780						
						Transition	123073.512	573638.238	2825725.211	123083.512	573630.022	2825730.838		10					
42	573627.215	2825733.760	28	0	11.5	Arc	123083.512	573630.022	2825730.838	123091.455	573626.109	2825737.658		7.942	16.25	Right	7.0	20	1.5
						Transition	123091.455	573626.109	2825737.658	123101.455	573625.401	2825747.591		10					
						Straight	123101.455	573625.401	2825747.591	123112.729	573625.753	2825758.860	11.274						
						Transition	123112.729	573625.753	2825758.860	123122.729	573625.075	2825768.797		10					
43	573623.349	2825775.102	42	38	20.36	Arc	123122.729	573625.075	2825768.797	123135.194	573617.808	2825778.571		12.465	16.75	Left	7.0	20	1.5
						Transition	123135.194	573617.808	2825778.571	123145.194	573608.487	2825782.082		10					
						Straight	123145.194	573608.487	2825782.082	123162.428	573591.836	2825786.527	17.234						
44	573581.697	2825789.234	16	21	36.93	Arc	123162.428	573591.836	2825786.527	123183.272	573572.732	2825794.686		20.844	73	Right	5.5	30	0.9
						Straight	123183.272	573572.732	2825794.686	123200.000	573558.544	2825803.219	66.392						

VERTICAL CURVE REPORT													
CURVE NO.	IP		TYPE OF CURVE	CURVE LENGTH	M VALUE	START		END		GRADIENT		K' VALUE	SSD/ISD
	CHAINAGE	LEVEL				CHAINAGE	LEVEL	CHAINAGE	LEVEL	IN	OUT		
1	120404.549	1365.010	Sag	100	0.778	120354.549	1364.621	120454.549	1368.510	0.779	7.000	16.075	ISD
2	120672.589	1383.773	Hog	90	-3.039	120582.589	1377.473	120802.589	1378.017	7.000	-4.428	7.875	ISD
3	120892.040	1374.056	Hog	50	-0.105	120867.040	1375.163	120917.040	1372.530	-4.428	-6.103	29.851	ISD
4	120975.151	1368.983	Sag	40	0.097	120955.151	1370.204	120995.151	1368.150	-6.103	-4.164	20.629	ISD
5	121024.991	1366.908	Hog	40	-0.123	121004.991	1367.741	121044.991	1365.582	-4.164	-6.628	16.234	ISD
6	121075.160	1363.583	Sag	50	0.147	121050.160	1365.240	121100.160	1362.512	-6.628	-4.281	21.304	ISD
7	121140.925	1360.768	Hog	60	-0.097	121110.925	1362.052	121170.925	1359.094	-4.281	-5.577	46.296	ISD
8	121325.025	1350.500	Sag	60	0.041	121295.025	1352.174	121355.025	1348.991	-5.577	-5.033	110.294	ISD
9	121517.664	1340.806	Hog	100	-0.246	121467.664	1343.322	121567.664	1337.306	-5.033	-7.000	50.839	ISD
10	121704.076	1327.757	Sag	60	0.176	121674.076	1329.857	121734.076	1326.361	-7.000	-4.652	25.554	ISD
11	121788.107	1323.848	Hog	50	-0.104	121763.107	1325.011	121813.107	1322.269	-4.652	-6.315	30.066	ISD
12	121854.267	1319.670	Sag	50	0.176	121829.267	1321.249	121879.267	1318.794	-6.315	-3.505	17.794	ISD
13	121927.157	1317.115	Hog	50	-0.155	121902.157	1317.991	121952.157	1315.618	-3.505	-5.988	20.137	ISD
14	122138.439	1304.464	Sag	100	0.434	122088.439	1307.458	122188.439	1303.206	-5.988	-2.516	28.802	ISD
15	122659.410	1291.357	Hog	100	-0.137	122609.410	1292.615	122709.410	1289.551	-2.516	-3.611	91.324	ISD
16	122830.534	1285.178	Sag	50	0.046	122805.534	1286.081	122855.534	1284.461	-3.611	-2.868	67.295	ISD
17	122932.001	1282.268	Sag	50	0.029	122907.001	1282.985	122957.001	1281.668	-2.868	-2.399	106.610	ISD
18	123009.016	1280.421	Hog	50	-0.086	122984.016	1281.020	123034.016	1279.475	-2.399	-3.781	36.179	ISD
19	123121.569	1276.165	Sag	60	0.074	123091.569	1277.299	123151.569	1275.326	-3.781	-2.799	61.100	ISD
20	123178.025	1274.585	Hog	40	-0.033	123158.025	1275.145	123198.025	1273.892	-2.799	-3.468	59.791	ISD
21	123250.231	1272.081	Sag	60	0.016	123220.231	1273.121	123280.231	1271.103	-3.468	-3.260	288.462	ISD

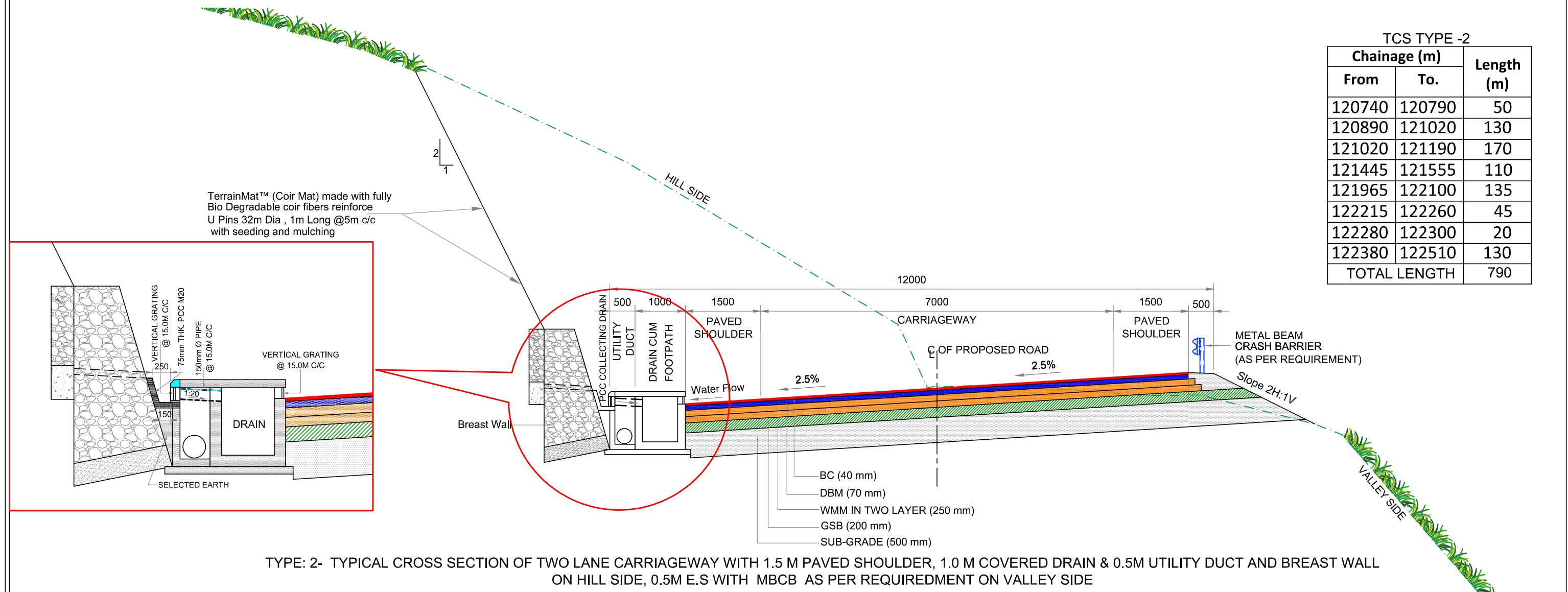
TYPICAL CROSS SECTION



TCS TYPE -1

Chainage (m)		Length (m)
From	To.	
120630	120740	110
TOTAL LENGTH		110

TYPE: 1- TYPICAL CROSS SECTION OF TWO LANE CARRIAGEWAY WITH 1.5M PAVED SHOULDER, 1.0M COVERED DRAIN BOTH SIDE AND 0.5M UTILITY DUCT

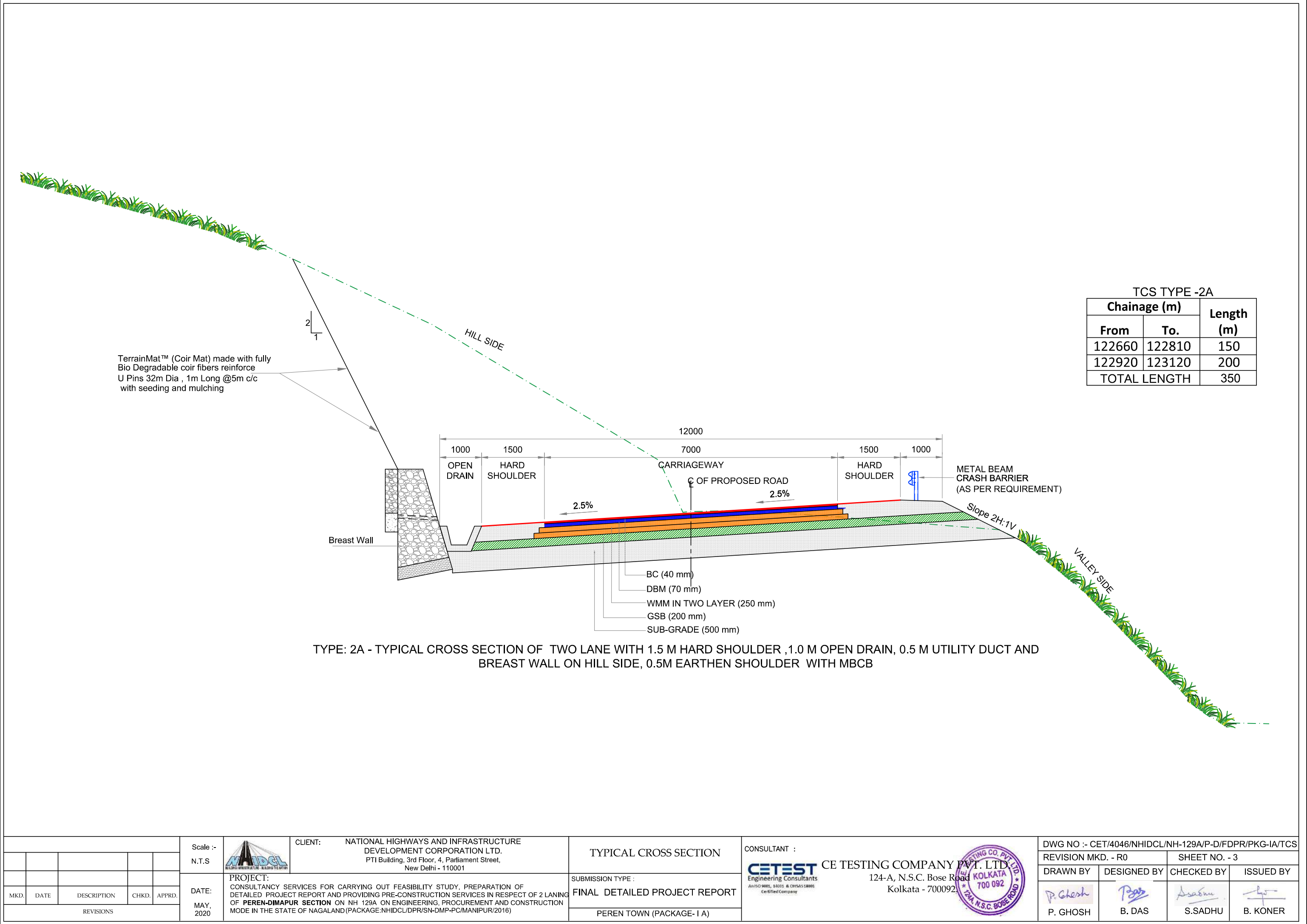


TCS TYPE -2

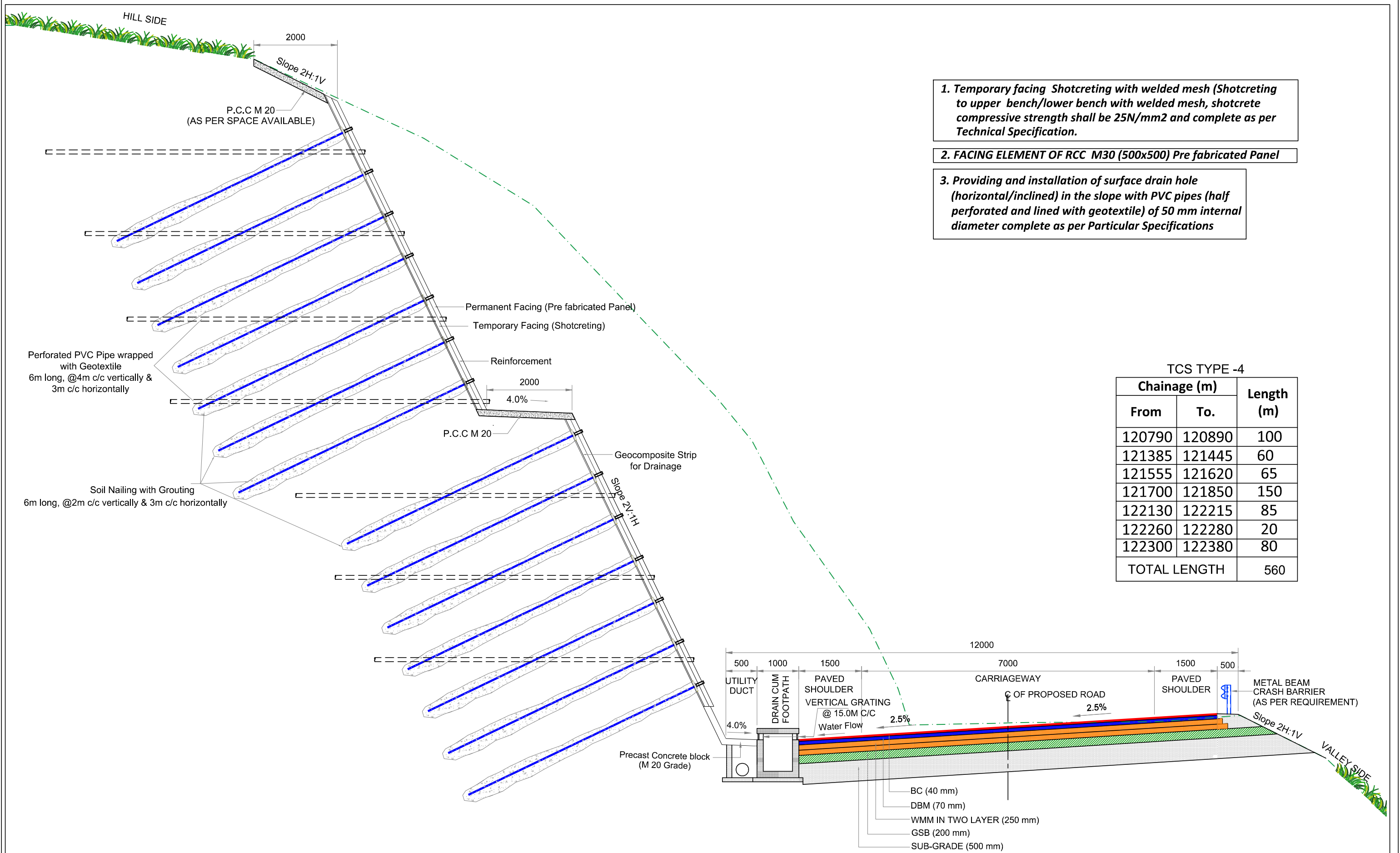
Chainage (m)		Length (m)
From	To.	
120740	120790	50
120890	121020	130
121020	121190	170
121445	121555	110
121965	122100	135
122215	122260	45
122280	122300	20
122380	122510	130
TOTAL LENGTH		790

TYPE: 2- TYPICAL CROSS SECTION OF TWO LANE CARRIAGEWAY WITH 1.5 M PAVED SHOULDER, 1.0 M COVERED DRAIN & 0.5M UTILITY DUCT AND BREAST WALL ON HILL SIDE, 0.5M E.S WITH MBCB AS PER REQUIREMENT ON VALLEY SIDE

					Scale :- N.T.S	 CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building, 3rd Floor, 4, Parliament Street, New Delhi - 110001	TYPICAL CROSS SECTION		CONSULTANT :  CE TESTING COMPANY PVT. LTD. 124-A, N.S.C. Bose Road Kolkata - 700092		DWG NO :- CET/4046/NHIDCL/NH-129A/P-D/FDPR/PKG-IA/TCS							
											REVISION MKD. - R0		SHEET NO. - 2					
					DATE: MAY, 2020		SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT				DRAWN BY		DESIGNED BY		CHECKED BY		ISSUED BY	
MKD. DATE DESCRIPTION CHKD. APPRD.											 P. GHOSH		 B. DAS		 S.SADHU		 B. KONER	
REVISIONS							PEREN TOWN (PACKAGE- I A)											



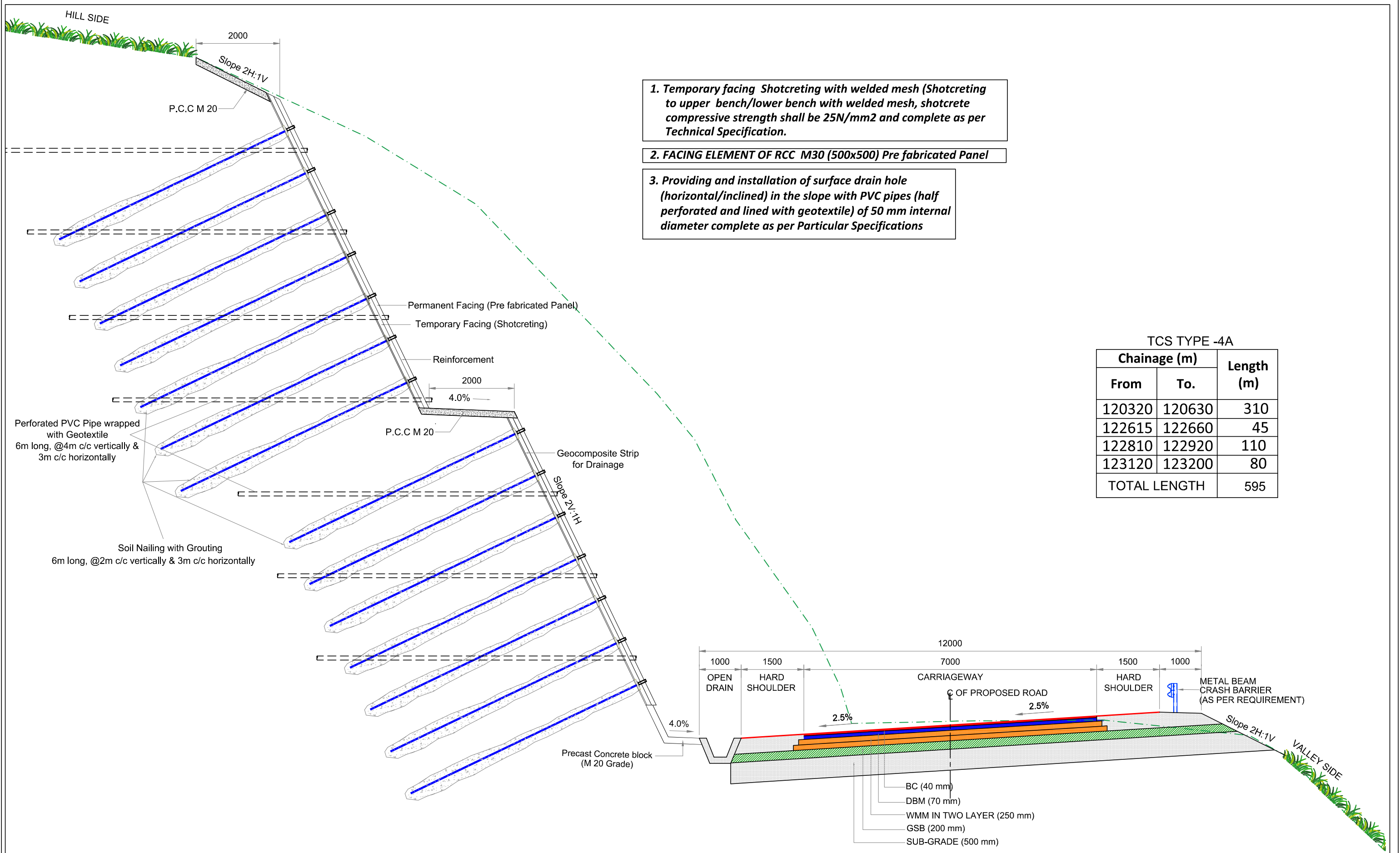
					Scale :- N.T.S		CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building, 3rd Floor, 4, Parliament Street, New Delhi - 110001	TYPICAL CROSS SECTION	CONSULTANT :  CE TESTING COMPANY PVT. LTD. 124-A, N.S.C. Bose Road Kolkata - 700092 	DWG NO :- CET/4046/NHIDCL/NH-129A/P-D/FDPR/PKG-IA/TCS			
											REVISION MKD. - R0		SHEET NO. - 3
					DATE: MAY, 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 PEREN-DIMAPUR SECTION ON NH 129A ON ENGINEERING, PROCUREMENT AND CONSTRUCTION MODE IN THE STATE OF NAGALAND (PACKAGE:NHIDCL/DPR/SN-DMP-PC/MANIPUR/2016)	SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT			DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.						P. Ghosh	B. DAS	S.SADHU	B. KONER
REVISIONS													
								PEREN TOWN (PACKAGE- I A)					



1. Temporary facing Shotcreting with welded mesh (Shotcreting to upper bench/lower bench with welded mesh, shotcrete compressive strength shall be 25N/mm2 and complete as per Technical Specification.
2. FACING ELEMENT OF RCC M30 (500x500) Pre fabricated Panel
3. Providing and installation of surface drain hole (horizontal/inclined) in the slope with PVC pipes (half perforated and lined with geotextile) of 50 mm internal diameter complete as per Particular Specifications

TCS TYPE -4		
Chainage (m)		Length (m)
From	To.	
120790	120890	100
121385	121445	60
121555	121620	65
121700	121850	150
122130	122215	85
122260	122280	20
122300	122380	80
TOTAL LENGTH		560

TYPE: 4 - TYPICAL CROSS SECTION OF TWO LANE CARRIAGEWAY WITH 1.5M/1.0 M PAVED SHOULDER ,1.0 M COVERED DRAIN AND 0.5M UTILITY DUCT ON HILL SIDE AND SOIL NAILING WITH SHOTCRETING, 0.5M ES WITH MBCB AS PER REQUIREMENT ON VALLEY SIDE



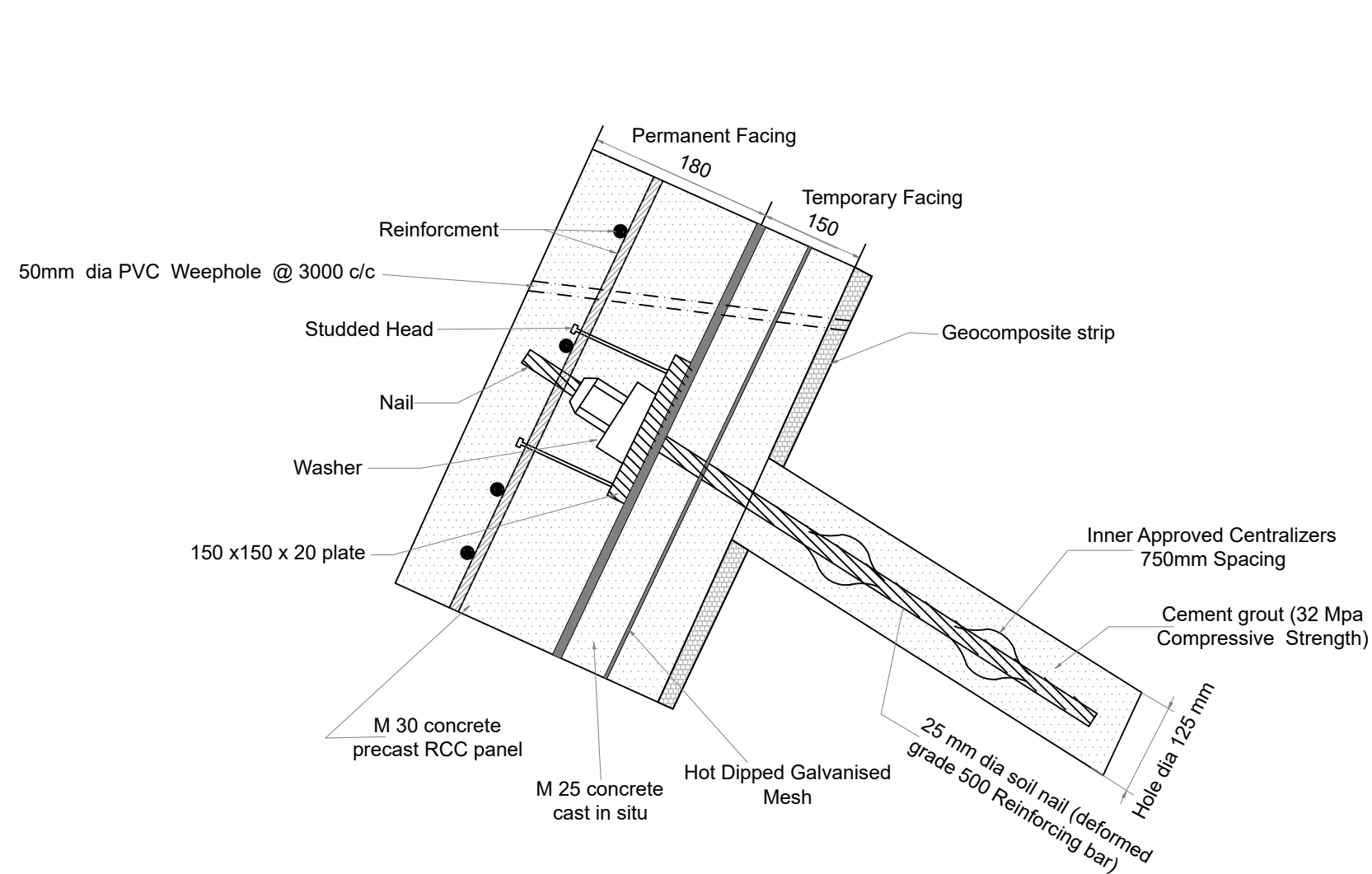
1. Temporary facing Shotcreting with welded mesh (Shotcreting to upper bench/lower bench with welded mesh, shotcrete compressive strength shall be 25N/mm2 and complete as per Technical Specification.
2. FACING ELEMENT OF RCC M30 (500x500) Pre fabricated Panel
3. Providing and installation of surface drain hole (horizontal/inclined) in the slope with PVC pipes (half perforated and lined with geotextile) of 50 mm internal diameter complete as per Particular Specifications

TCS TYPE -4A		
Chainage (m)		Length (m)
From	To.	
120320	120630	310
122615	122660	45
122810	122920	110
123120	123200	80
TOTAL LENGTH		595

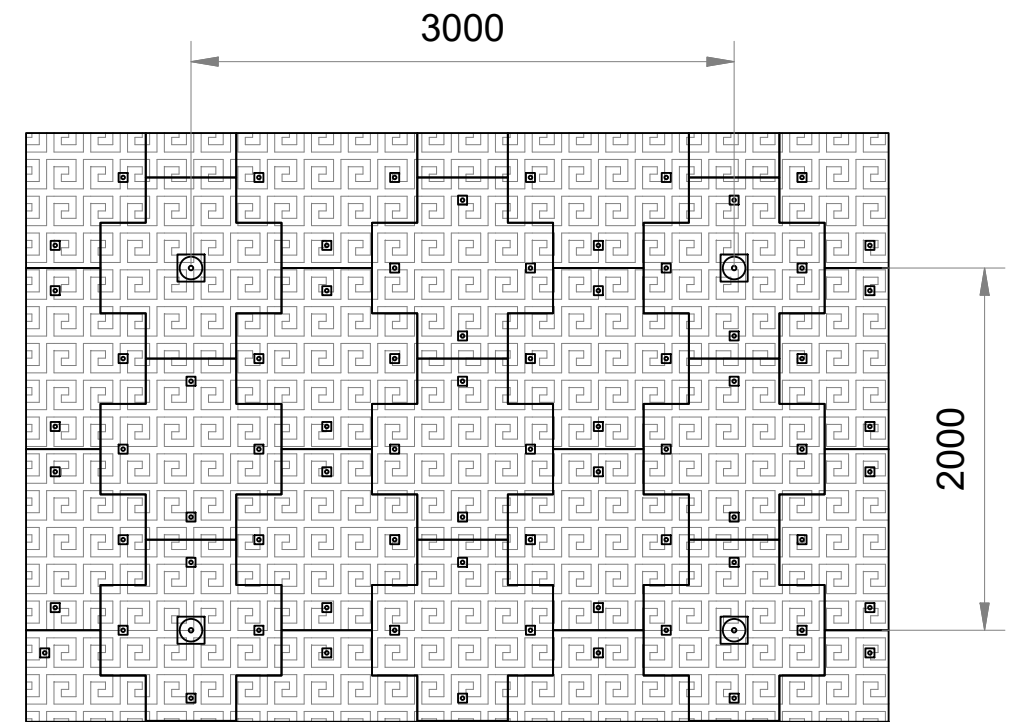
TYPE: 4A - TYPICAL CROSS SECTION OF TWO LANE WITH 1.5 M HARD SHOULDER WITH 1.0M OPEN TRAPEZOIDAL DRAIN ,0.5M UTILITY DUCT AND SOIL NAILING WITH SHOTCRETE FACING ON HILL SIDE AND 0.5 M EARTHEN SHOULDER WITH MBCB

					Scale :- N.T.S		CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building, 3rd Floor, 4, Parliament Street, New Delhi - 110001		TYPICAL CROSS SECTION		CONSULTANT : CE TESTING COMPANY PVT. LTD. 124-A, N.S.C. Bose Road Kolkata - 700092		DWG NO :- CET/4046/NHIDCL/NH-129A/P-D/FDPR/PKG-IA/TCS			
					DATE: MAY, 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 PEREN-DIMAPUR SECTION ON NH 129A ON ENGINEERING, PROCUREMENT AND CONSTRUCTION MODE IN THE STATE OF NAGALAND(PACKAGE:NHIDCL/DPR/SN-DMP-PC/MANIPUR/2016)		SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT		KOLKATA 700 092		REVISION MKD. - R0		SHEET NO. - 7	
REVISIONS									PEREN TOWN (PACKAGE- I A)				DRAWN BY		DESIGNED BY	
													CHECKED BY		ISSUED BY	
													P. GHOSH		B. DAS	
													S.SADHU		B. KONER	

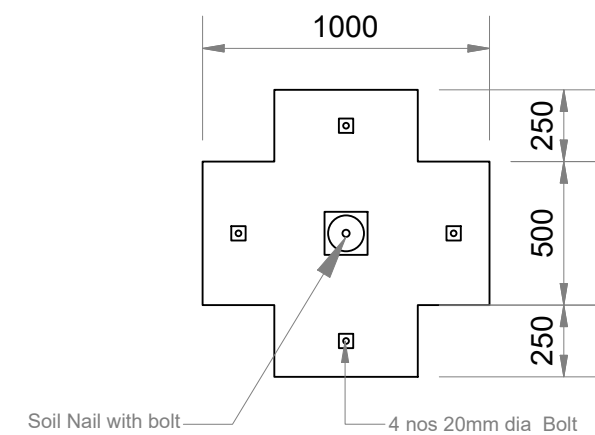
SOIL NAILING WITH SHOT CRETING



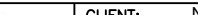
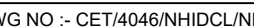
DETAILS "A"



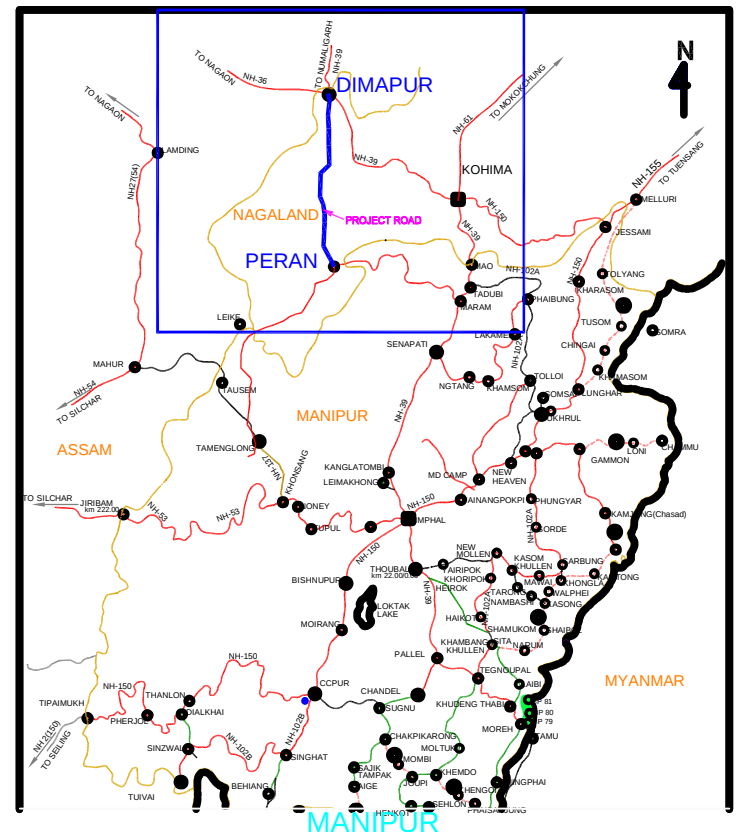
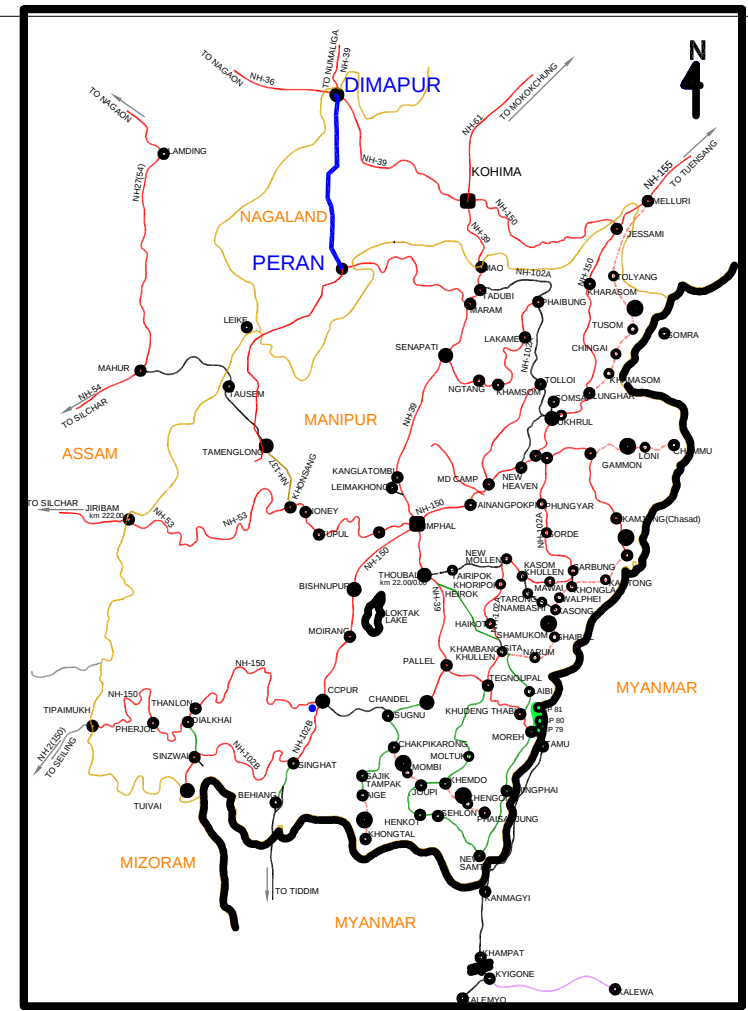
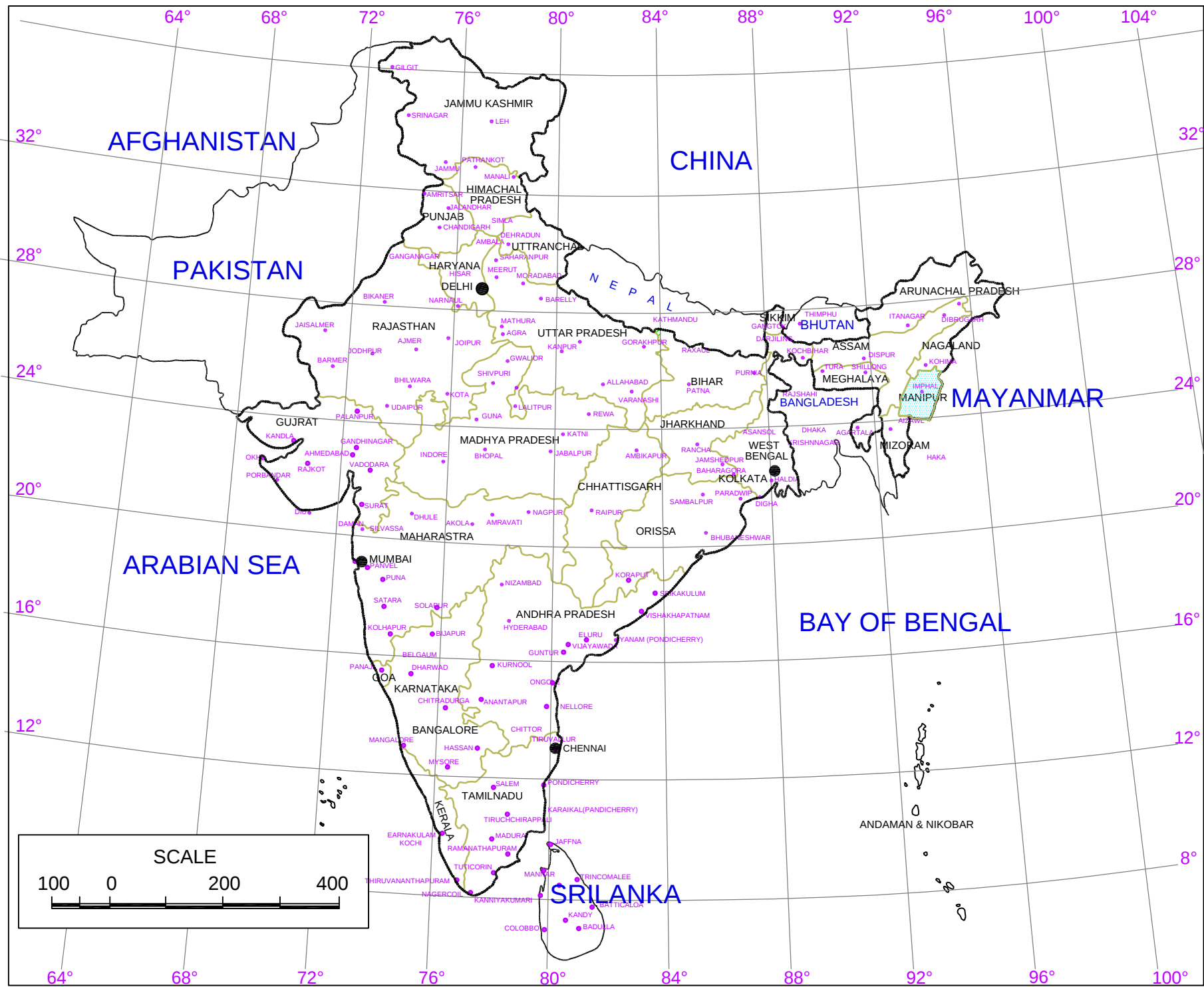
FRONT ELEVATION OF PRECAST RCC PANEL



DETAILS OF PRECAST RCC PANEL

					Scale :- N.T.S		CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building, 3rd Floor, 4, Parliament Street, New Delhi - 110001	CONSULTANT :  CETEST ENGINEERING CONSULTANTS 124-A, N.S.C. Bose Road Kolkata - 700092 				DWG NO :- CET/4046/NHIDCL/NH-129A/P-D/FDPR/PKG-IA				
										REVISION MKD. - R0		SHEET NO. - 8				
												DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY	
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.	DATE: MAY, 2020	PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANE OF PEREN-DIMAPUR SECTION ON NH 129A ON ENGINEERING, PROCUREMENT AND CONSTRUCTION MODE IN THE STATE OF NAGALAND (PACKAGE:NHIDCL/DPR/SN-DMP-PC/MANIPUR/2016)							SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT			
REVISIONS						PEREN TOWN (PACKAGE- I A)										

LOCATION PLAN

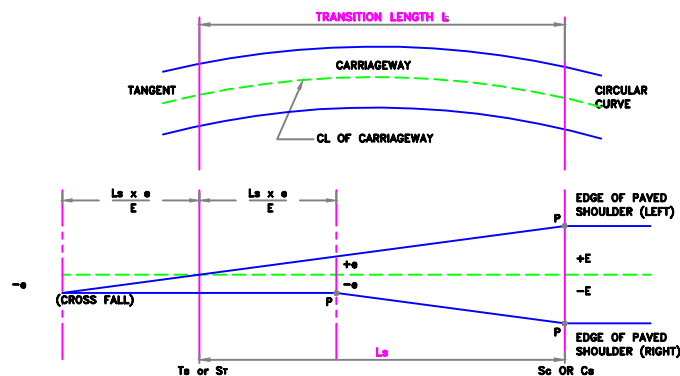
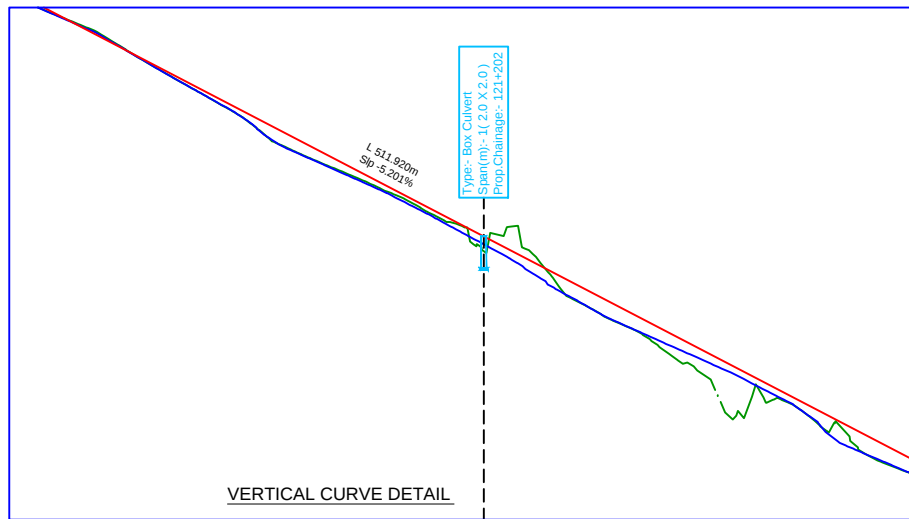
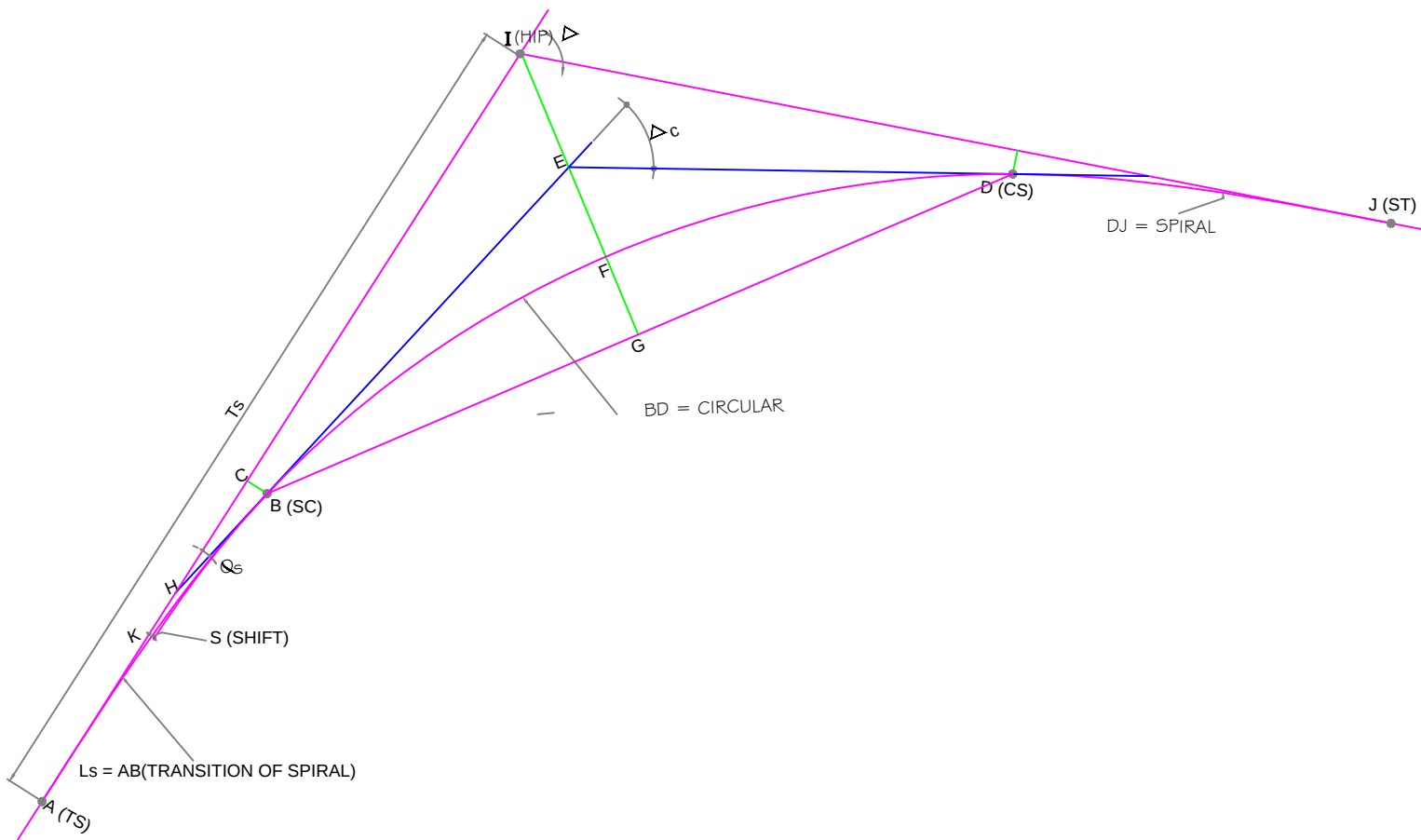


					Scale :-		CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building, 3rd Floor, 4, Parliament Street, New Delhi - 110001	LOCATION PLAN	CONSULTANT :  CE TESTING COMPANY PVT. LTD. 124-A, N.S.C. Bose Road, Kolkata - 700092. 	DWG NO :- CET/4046/NHIDCL/NH-129A/P-D/FDPR/PKG-IA/LP			
					N.T.S					REVISION MKD. - R0		SHEET NO. - 01	
					DATE: MAY, 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 PEREN-DIMAPUR SECTION ON NH 129A ON ENGINEERING, PROCUREMENT AND CONSTRUCTION MODE IN THE STATE OF NAGALAND.(PACKAGE:-NHIDCL/DPR/SN-DMP-PC/MANIPUR/2016)	SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT	PACKAGE - I A		DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
MKD. DATE DESCRIPTION CHKD. APPRD.										REVISIONS			

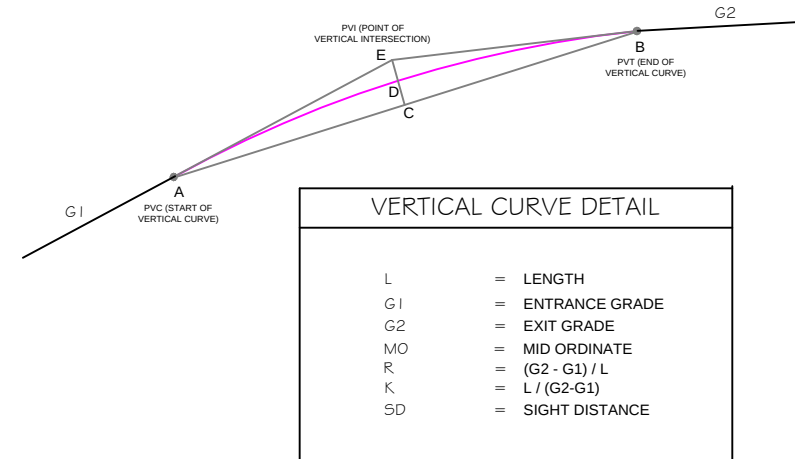
KEY PLAN



LEGEND



SKETCH SHOWING SUPER ELEVATION TRANSITION WITH SPIRAL CURVE.



VERTICAL CURVE DETAIL

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

SPIRAL CURVE DETAIL		CIRCULAR CURVE DETAIL	
R_b	= BEGINNING CURVATURE (AT A & J)	R	= RADIUS
R_e	= END RADIUS (AT B & D)	L_c	= LENGTH OF CIRCLE
L_s	= LENGTH OF SPIRAL (AB & DJ)	T	= TANGENT LENGTH (EB)
THETA (θ) = SPIRAL ANGLE = $\frac{AHC}{R_b}$		Δ	= ANGLE OF CIRCULAR ARC (θ)
A	= CONSTANT = $\sqrt{L_s \times R_e}$	DC	= DEGREE OF CURVATURE
S	= SHIFT	C	= CHORD LENGTH
K_s	= AK (ABSCISSA)	O	= MIDDLE ORDINATE (FG)
X_s	= AC	E	= EXTERNAL ORDINATE (EF)
Y_s	= BC		
L_t	= LONG TANGENT (AH)		
S_t	= SHORT TANGENT (HB)		
T_s	= TANGENT DISTANCE (IA)		
	= $L_s/2 + (R+S)\tan \Delta$		
TOTAL DEVIATION ANGLE = $\Delta = \Delta_c + 2\theta$			
E_s	= (IP) = APEX DISTANCE		
	= $(R+S)\sec \Delta/2$		

LEGEND :	
T_s or S_t	- Point of change from transition to tangent (spiral to tangent)
S_c or C_s	- Point of change from transition to circular curve (spiral to circular)
L_s	- 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

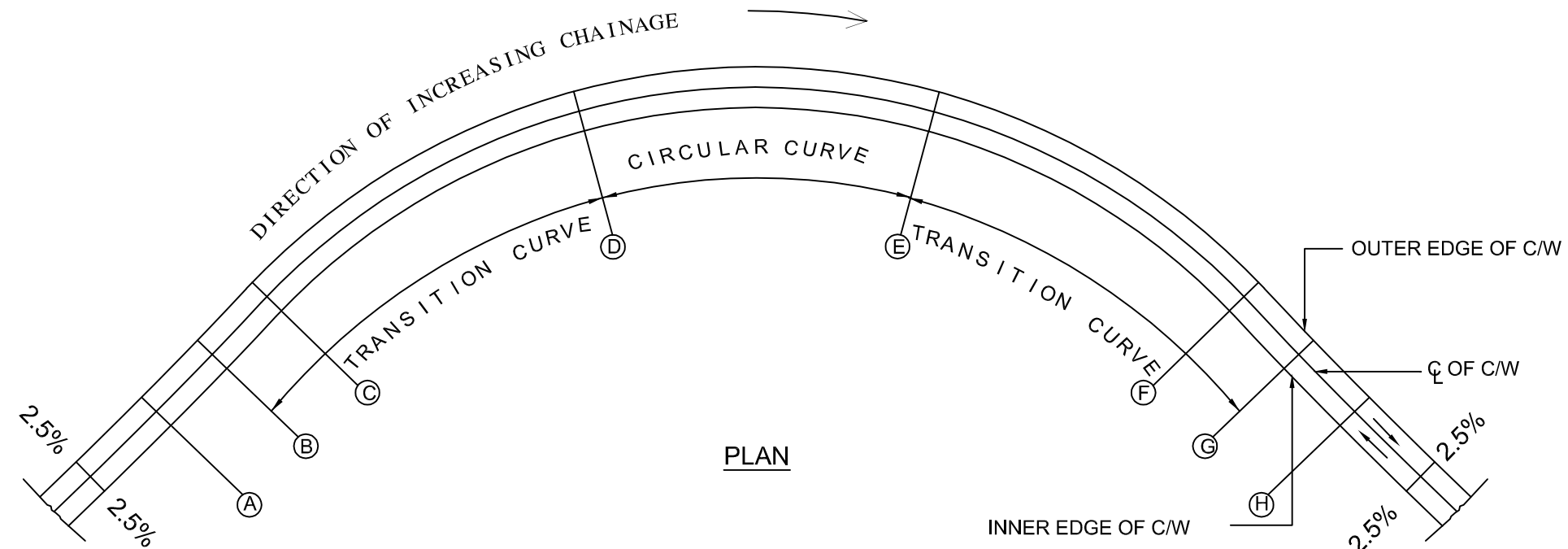
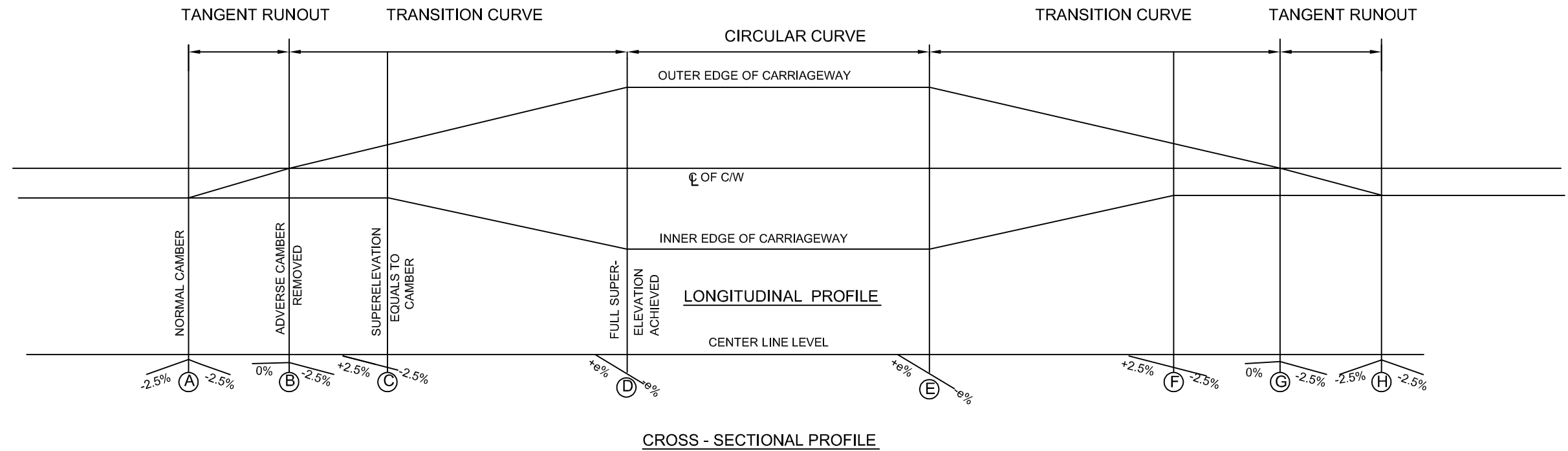
NOTE : SHORT VERTICAL CURVES (AT LEAST 15M LONG) TO BE INSERTED AT POINT "P" IF NECESSARY. LEFT AND RIGHT ARRANGEMENT WILL BE REVERSED IN SIGN FOR CURVE IN REVERSE DIRECTION.

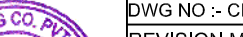
GENERAL NOTES

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

Scale :- N.T.S.					CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building, 3rd Floor, 4, Parliament Street, New Delhi - 110001					TITLE :- LEGEND					CONSULTANT : CETEST Engineering Consultants An ISO 9001, 14001 & OHSAS 18001 Certified Company					DWG NO :- CET/4046/NHIDCL/NH-129A/P-D/FDPR/PKG-IA/LEG				
MAY, 2020					PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANEING OF PEREN-DIMAPUR SECTION ON NH 129A ON ENGINEERING, PROCUREMENT AND CONSTRUCTION MODE IN THE STATE OF NAGALAND.(PACKAGE:-NHIDCL/DPR/SN-DMP-PC/MANIPUR/2016)					SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT					CE TESTING COMPANY PVT. LTD. 124-A, N.S.C. Bose Road, Kolkata - 700092.					REVISION MKD. - R0				
REVISIONS					PACKAGE - I A					DRAWN BY U. MALIK					DESIGNED BY B.DAS					CHECKED BY S.SADHU				
																				ISSUED BY B.KONER				

MISCELLANEOUS DRAWINGS



					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	CONSULTANT :  CE TESTING COMPANY PVT. LTD. 124-A, N.S.C. Bose Road, Kolkata - 700092. 	DWG NO :- CET/4046/NHIDCL/NH-129A/P-D/FDPR/PKG-IA/MISC- 01			
											REVISION MKD. - R0		SHEET NO. - 01
					DATE: MAY, 2020		SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT	PACKAGE- I A		 U. MALIK	 B.DAS	 S.SADHU	 B.KONER
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.									
REVISIONS													

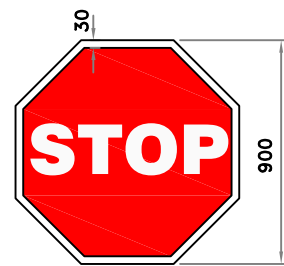


Fig. 14.01
STOP SIGNAL

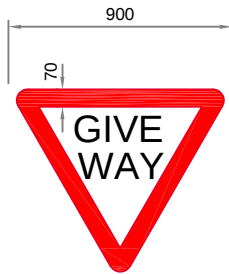


Fig. 14.02
GIVE WAY SIGN

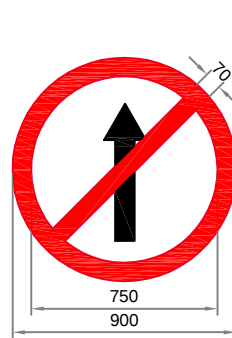


Fig. 14.19
NO ENTRY

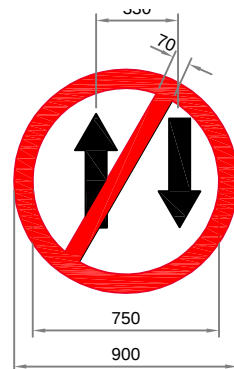


Fig. 14.20
ONE WAY SIGNS

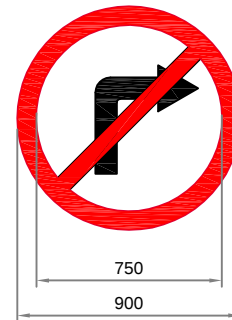


Fig. 14.22
RIGHT TURN PROHIBITED

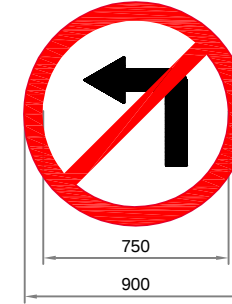


Fig. 14.21
LEFT TURN PROHIBITED



Fig. 14.24
U - TURN PROHIBITED

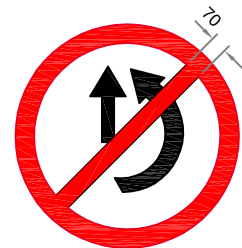


Fig. 14.23
OVERTAKING PROHIBITED

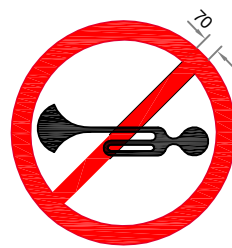


Fig. 14.18
HORN PROHIBITED

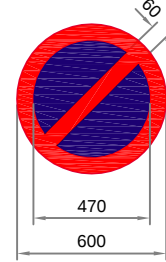


Fig. 14.29
NO PARKING

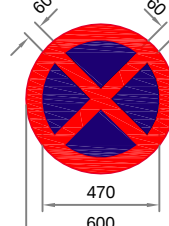


Fig. 14.28
NO STOPPING AND
NO STANDING



Fig. 14.37
SPEED LIMIT

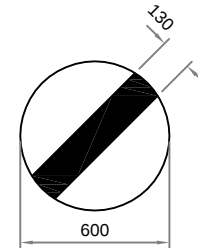


Fig. 14.40
RESTRICTION END

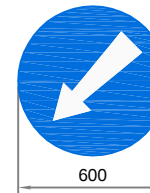


Fig. 14.48
COMPULSORY
KEEP LEFT



Fig. 14.46
COMPULSORY TURN
RIGHT AHEAD

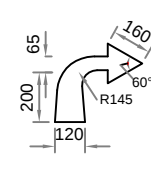


Fig. 14.47
COMPULSORY TURN
LEFT AHEAD



Fig. 14.42
COMPULSORY AHEAD
OR TURN RIGHT



Fig. 14.5
PASS EITHER
SIDE



Fig. 14.43
COMPULSORY AHEAD
OR TURN LEFT

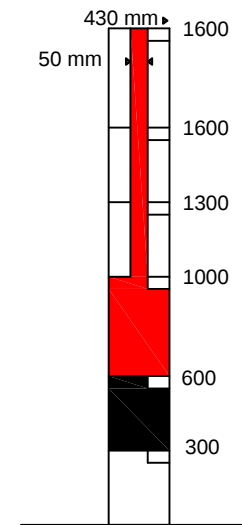


Fig. 18.10
FLOOD GAUGE

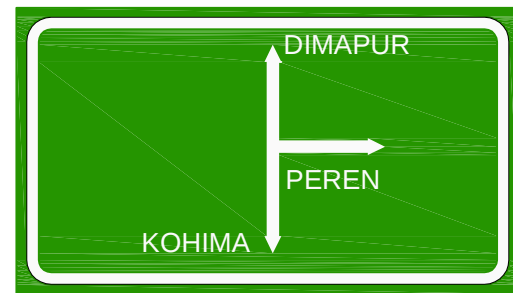


Fig. 16.03
ADVANCE DIRECTION SIGN

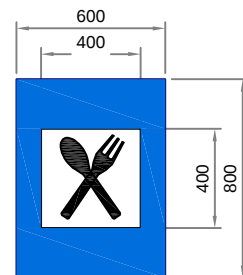


Fig. 17.01
EATING PLACE

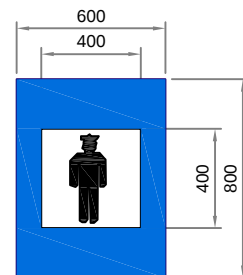


Fig. 17.13
POLICE STATION



Fig. 16.05
REASSURANCE SIGN

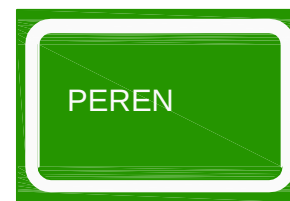


Fig. 16.06
PLACE IDENTIFICATION SIGN

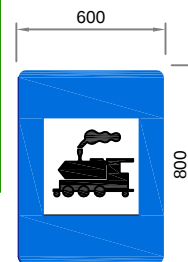


Fig. 17.16
RAILWAY STATION

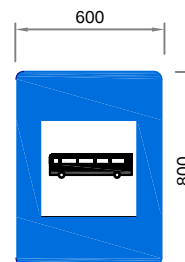


Fig. 17.35
BUS STOP



Fig. 20.02
NATIONAL HIGHWAY
ROUTE MARKER SIGN

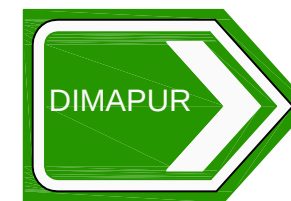


Fig. 16.04
PLACE IDENTIFICATION SIGN

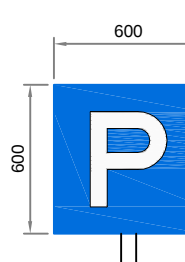


Fig. 18.01
PARKING THIS SIDE

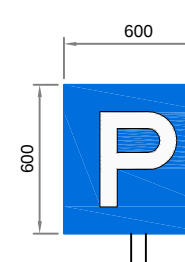


Fig. 14.01
PARKING BOTH SIDE

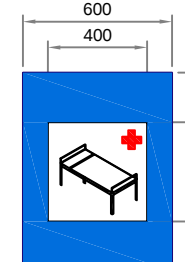


Fig. 17.07
HOSPITAL

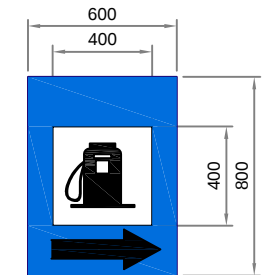


Fig. 17.06
FILLING STATION

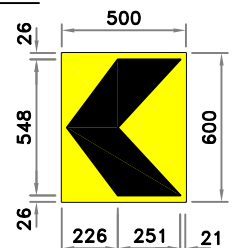


Fig. 15.72
SINGLE CHEVRON (NORMAL)

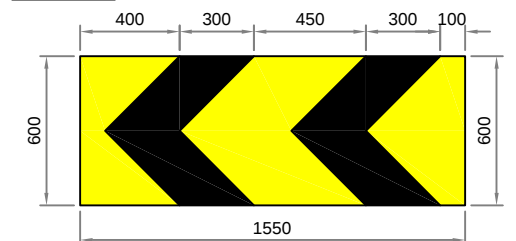


Fig. 15.74
DOUBLE CHEVRON

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		CONSULTANT : CETEST Engineering Consultants 124-A, N.S.C. Bose Road, Kolkata - 700092		DWG NO :- CET/4046/NHIDCL/NH-129A/P-D/FDPR/PKG-IA/MISC- 02 REVISION MKD. - R0 SHEET NO. - 01	
PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANE OF PEREN-DIMAPUR SECTION ON NH 129A ON ENGINEERING, PROCUREMENT AND CONSTRUCTION MODE IN THE STATE OF NAGALAND.(PACKAGE:-NHIDCL/DPR/SN-DMP-PC/MANIPUR/2016)					SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT		PACKAGE - I A		DRAWN BY U. MALIK		DESIGNED BY B.DAS	
DATE: MAY, 2020									CHECKED BY S.SADHU		ISSUED BY B.KONER	
REVISIONS												

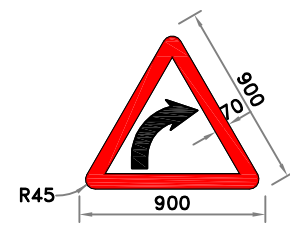


Fig. 15.02
RIGHT HAND CURVE

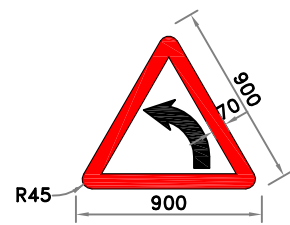


Fig. 15.01
LEFT HAND CURVE

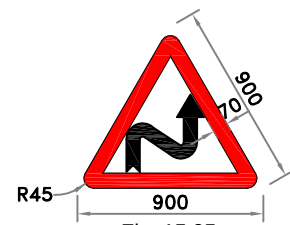


Fig. 15.05
RIGHT REVERSE BEND

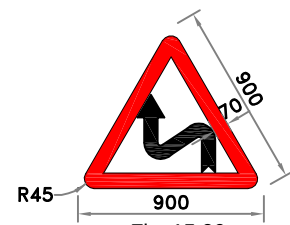


Fig. 15.06
LEFT REVERSE BEND

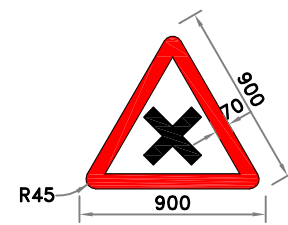


Fig. 15.14
CROSS ROAD

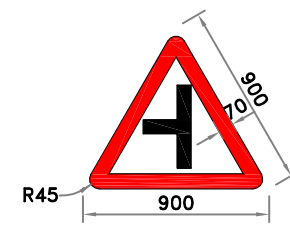


Fig. 15.10
SIDE ROAD LEFT

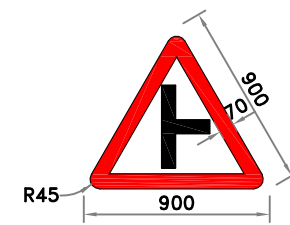


Fig. 15.09
SIDE ROAD RIGHT

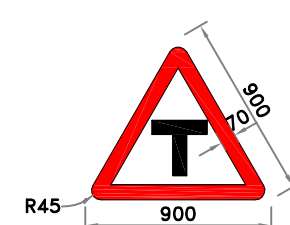


Fig. 15.17
T-INTERSECTION

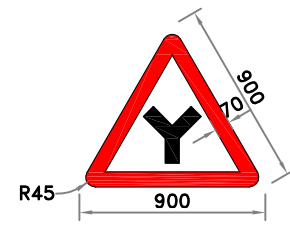


Fig. 15.13
Y-INTERSECTION

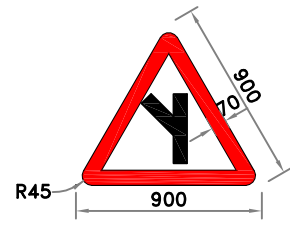


Fig. 15.11
Y-INTERSECTION

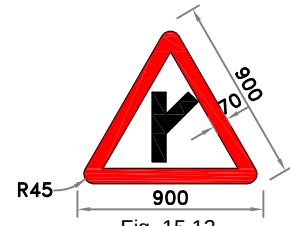


Fig. 15.12
Y-INTERSECTION

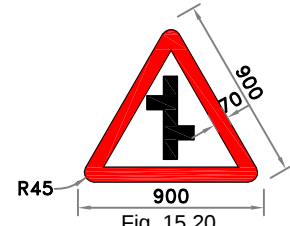


Fig. 15.20
STAGGERED
INTERSECTION

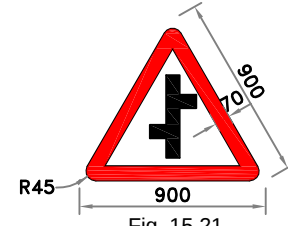


Fig. 15.21
STAGGERED
INTERSECTION

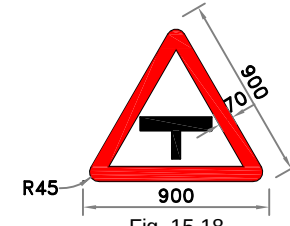


Fig. 15.18
T- INTERSECTION
MAJOR ROAD AHEAD

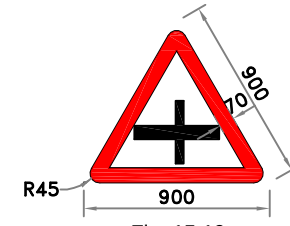


Fig. 15.19
MAJOR ROAD AHEAD

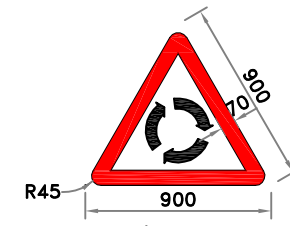


Fig. 15.15
ROUND ABOUT

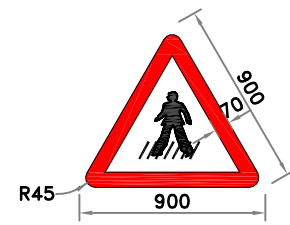


Fig. 15.33
PEDESTRIAN CROSSING

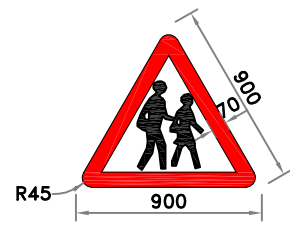


Fig. 15.34
SCHOOL

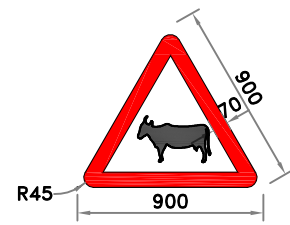


Fig. 15.66
CATTLE

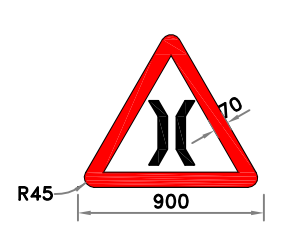


Fig. 15.11
NARROW BRIDGE

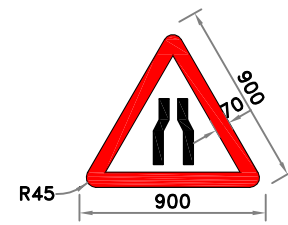


Fig. 15.23
NARROW ROADS

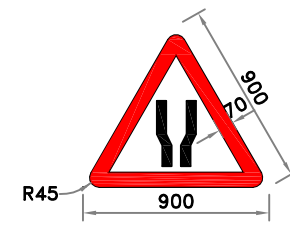


Fig. 15.24
ROAD WIDENS AHEAD

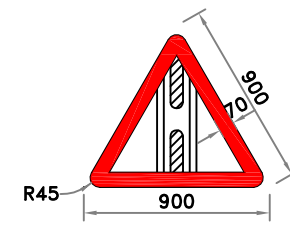


Fig. 15.32
GAP IN MEDIAN

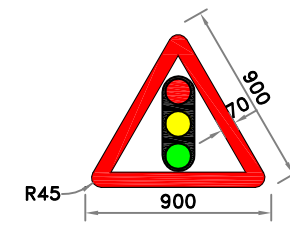


Fig. 15.16
TRAFFIC SIGNAL

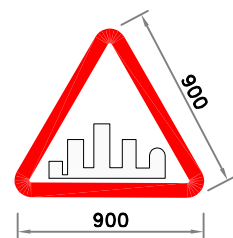


Fig. 15.35
BUILT-UP AREA

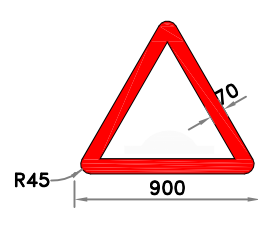


Fig. 15.49
SPEED BREAKER

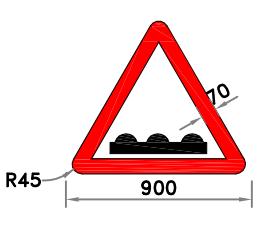


Fig. 15.49
RUMBLE STRIP

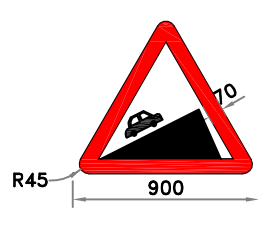


Fig. 15.26
STEEP ASCENT



Fig. 15.27
STEEP DESCENT

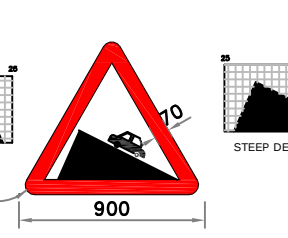


Fig. 15.27
STEEP DESCENT



Fig. 15.03
RIGHT HAIRPIN BEND

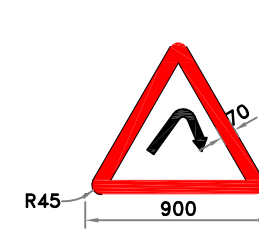


Fig. 15.03
RIGHT HAIRPIN BEND

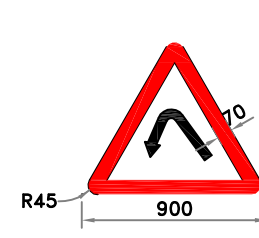
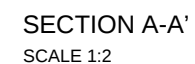
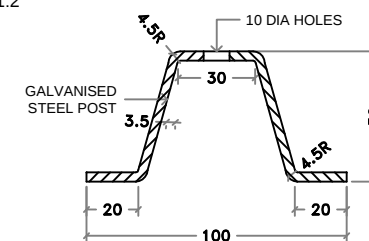
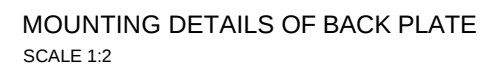
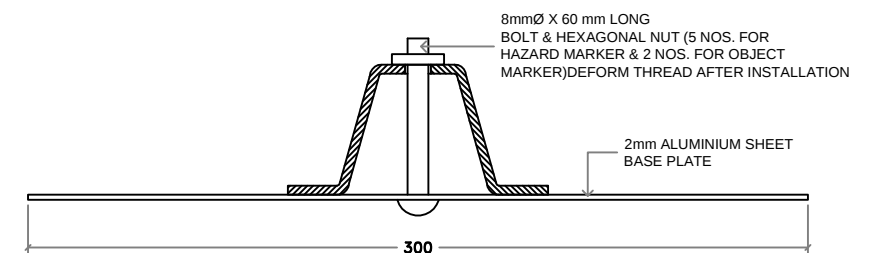
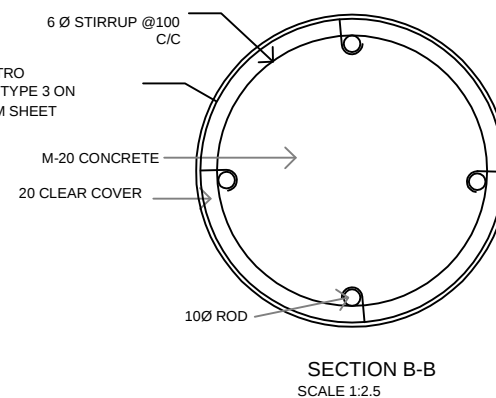
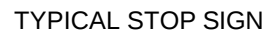
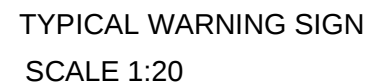


Fig. 15.04
LEFT HAIRPIN BEND

NOTE:

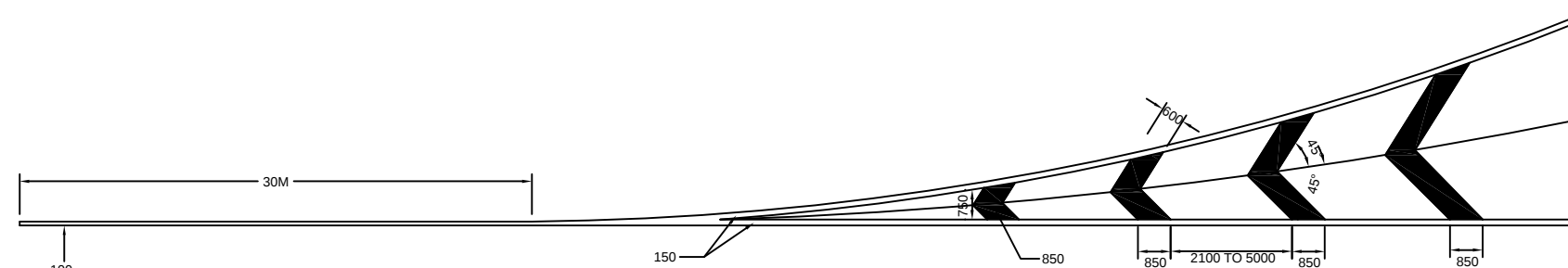
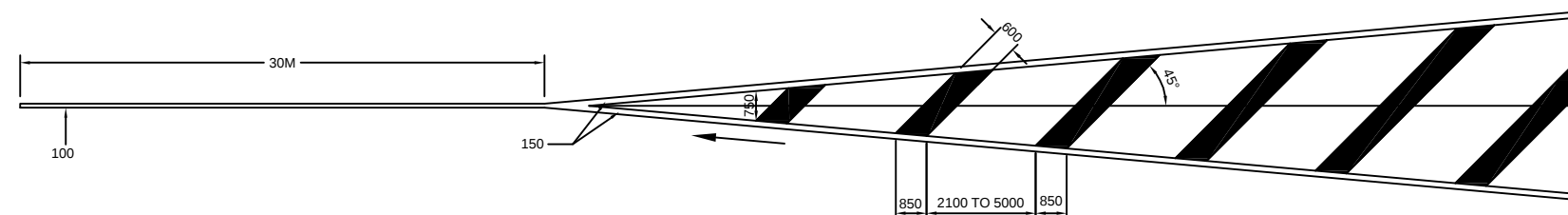
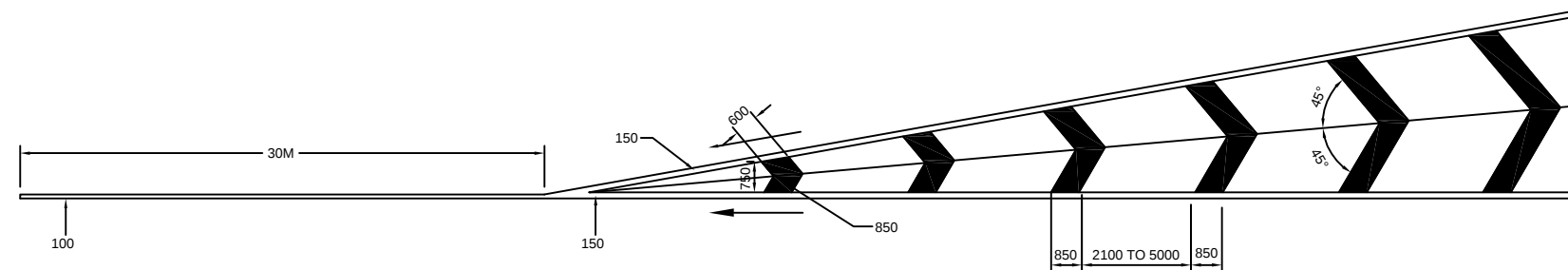
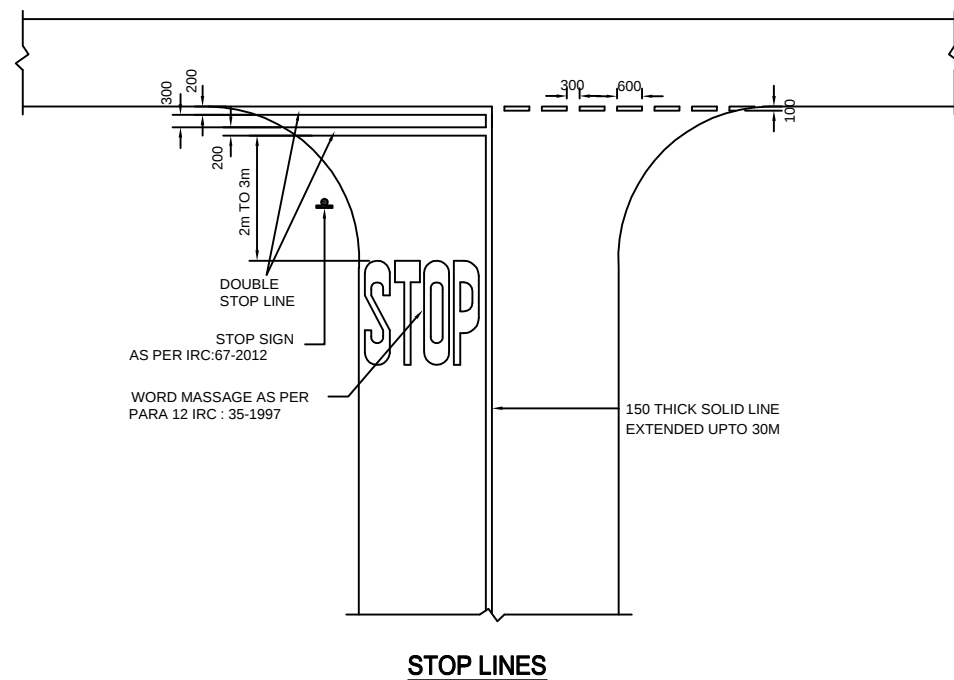
1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED
2. FOR DETAILS OF ROAD SIGN REFER IRC-67:2012

					Scale :-		CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building, 3rd Floor, 4, Parliament Street, New Delhi - 110001	TYPICAL DETAILS OF ROAD SIGNS		CONSULTANT :  CE TESTING COMPANY PVT. LTD. 124-A, N.S.C. Bose Road, Kolkata - 700092. 	DWG NO :- CET/4046/NHIDCL/NH-129A/P-D/FDPR/PKG-IA/MISC- 02						
					N.T.S						REVISION MKD. - R0		SHEET NO. - 02				
					DATE: MAY, 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 PEREN-DIMAPUR SECTION ON NH 129A ON ENGINEERING, PROCUREMENT AND CONSTRUCTION MODE IN THE STATE OF NAGALAND.(PACKAGE:-NHIDCL/DPR/SN-DMP-PC/MANIPUR/2016)		DRAWN BY		DESIGNED BY	CHECKED BY	ISSUED BY
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.									U. MALIK		B.DAS	S.SADHU	B.KONER
REVISIONS					SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT PACKAGE - I A												

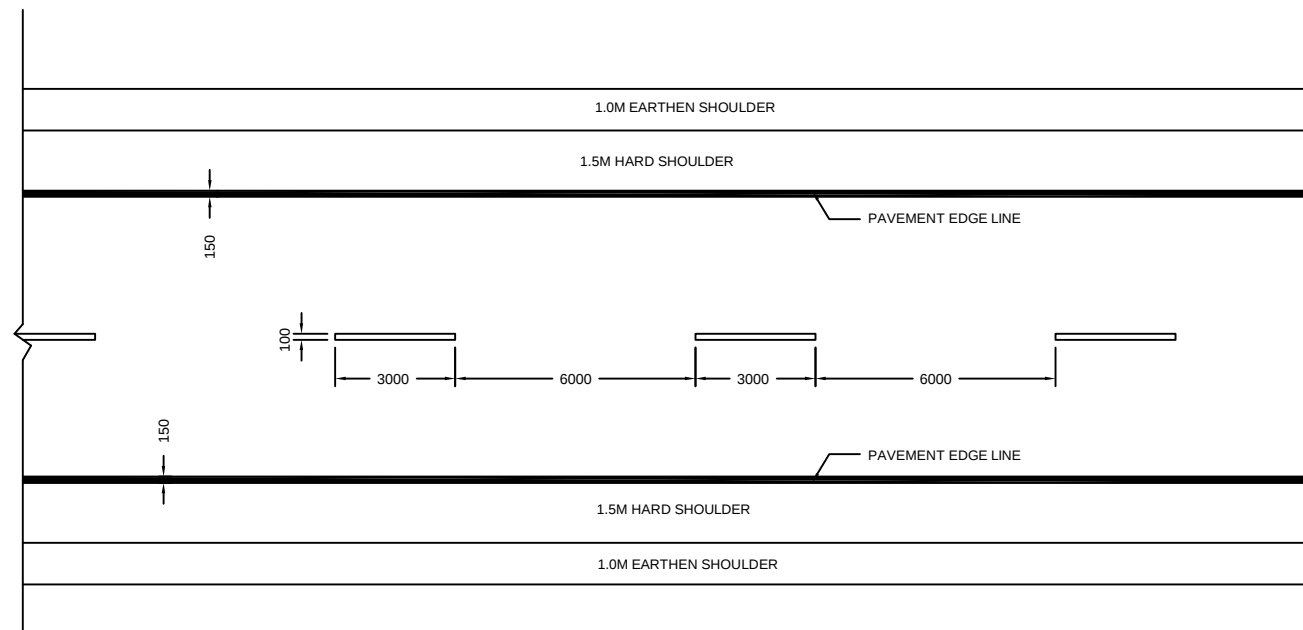
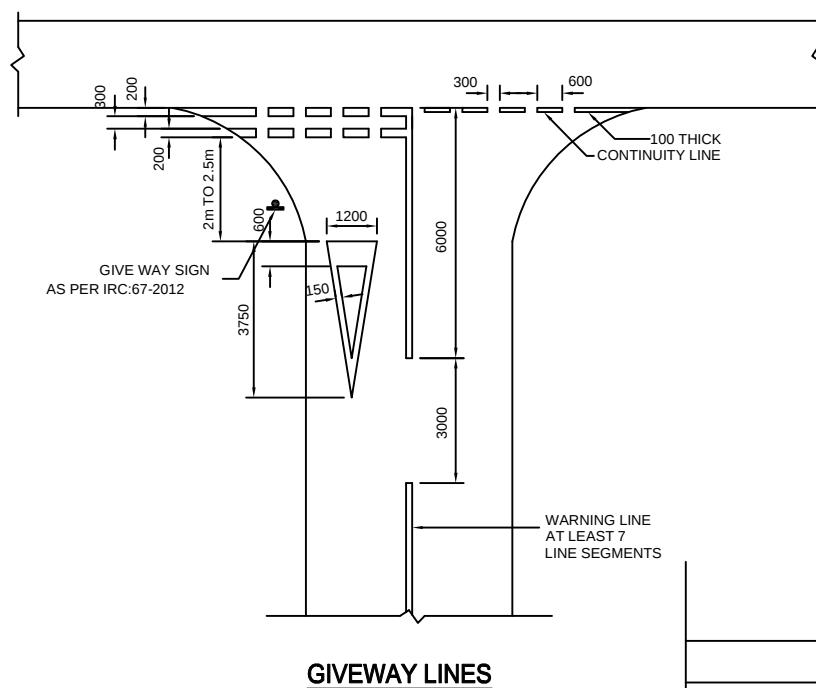


01. ALL DIMENSIONS ARE IN MM. AND LEVELS IN METERS, UNLESS OTHERWISE SPECIFIED.

					Scale :-		CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building, 3rd Floor, 4, Parliament Street, New Delhi - 110001	TYPICAL DETAILS OF ROAD SIGNS	CONSULTANT :  CE TESTING COMPANY PVT. LTD. 124-A, N.S.C. Bose Road, Kolkata - 700092. 	DWG NO :- CET/4046/NHIDCL/NH-129A/P-D/FDPR/PKG-IA/MISC- 02			
					N.T.S					REVISION MKD. - R0		SHEET NO. - 03	
					DATE: MAY, 2020	PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANE OF PEREN-DIMAPUR SECTION ON NH 129A ON ENGINEERING, PROCUREMENT AND CONSTRUCTION MODE IN THE STATE OF NAGALAND. (PACKAGE:-NHIDCL/DPR/SN-DMP-PC/MANIPUR/2016)	SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT	PACKAGE - I A	DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY	
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.									
REVISIONS									PACKAGE - I A				



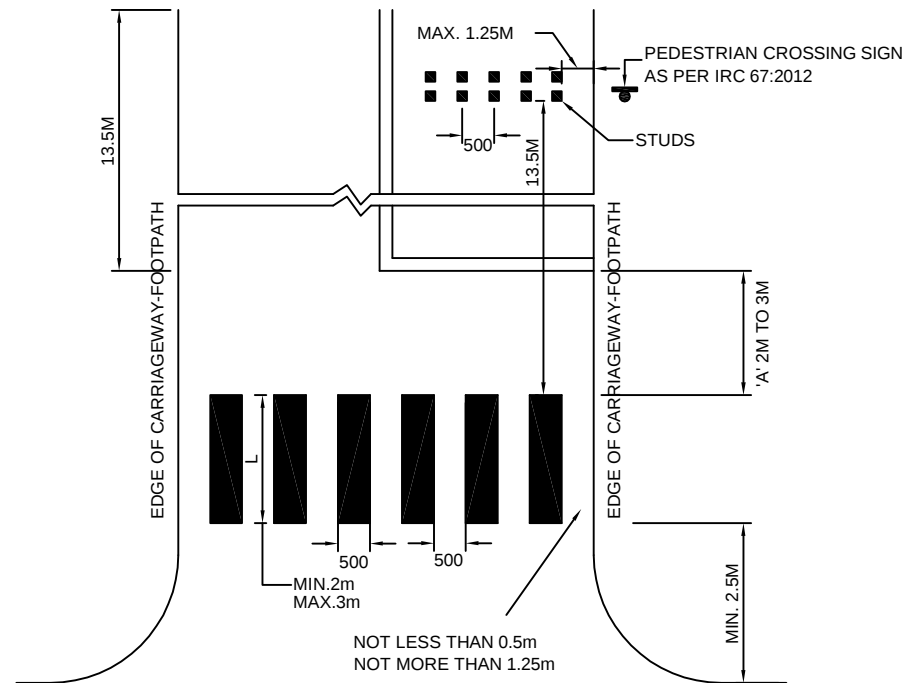
DETAILS OF DIAGONAL AND CHEVRON MARKINGS



NOTE:

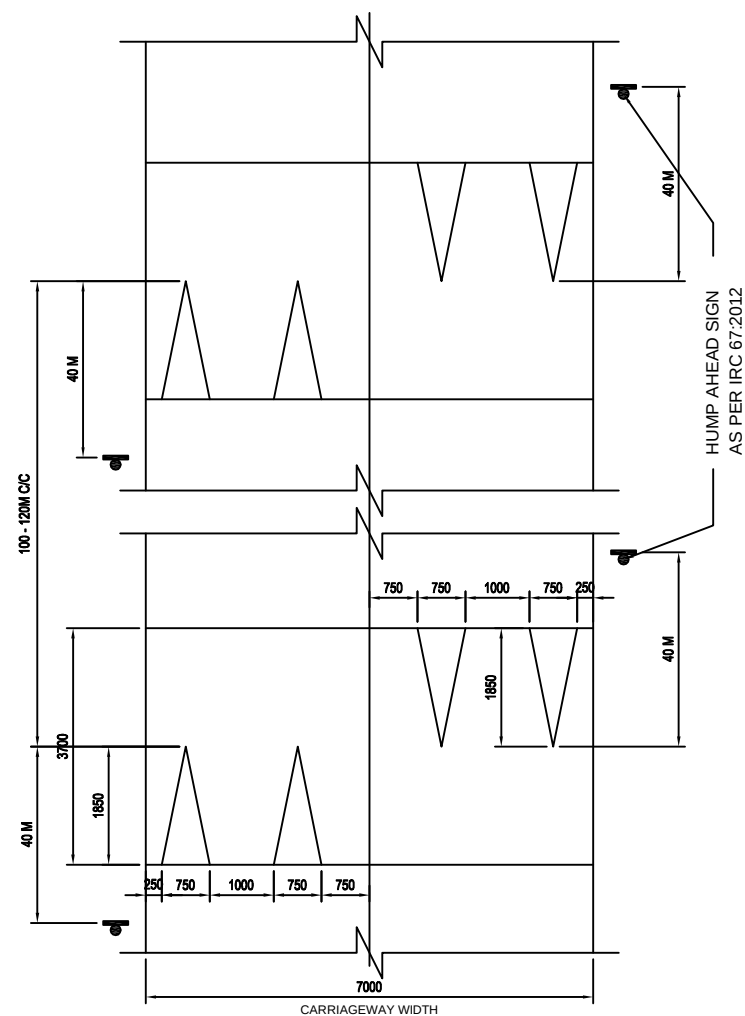
- 1: ALL DIMENSIONS ARE IN MM.
- 2: ALL DIMENSIONS SHOULD FOLLOW RELEVANT IRC CODE NO. IRC :35-1997

					Scale :- N.T.S		CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building, 3rd Floor, 4, Parliament Street, New Delhi - 110001	PAVEMENT MARKING	CONSULTANT : CE TESTING COMPANY PVT. LTD. 124-A, N.S.C. Bose Road, Kolkata - 700092	DWG NO :- CET/4046/NHIDCL/NH-129A/P-D/FDPR/PKG-IA/MISC- 03			
					DATE: MAY, 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 PEREN-DIMAPUR SECTION ON NH 129A ON ENGINEERING, PROCUREMENT AND CONSTRUCTION MODE IN THE STATE OF NAGALAND.(PACKAGE:-NHIDCL/DPR/SN-DMP-PC/MANIPUR/2016)	SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT			REVISION MKD. - R0		SHEET NO. - 01	
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.						DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
REVISIONS													
								PACKAGE - I A		U. MALIK	B.DAS	S.SADHU	B.KONER



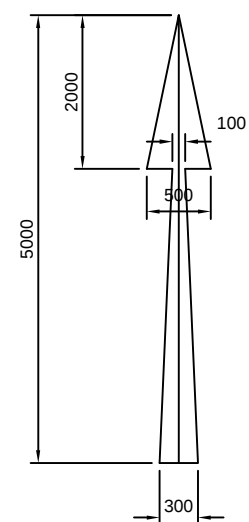
DETAILS OF PEDESTRIAN CROSSING MARKING

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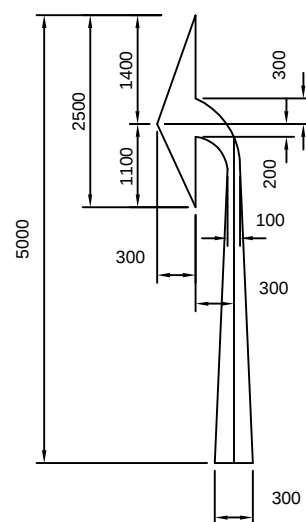


DETAILS OF SPEED BREAKERS MARKING

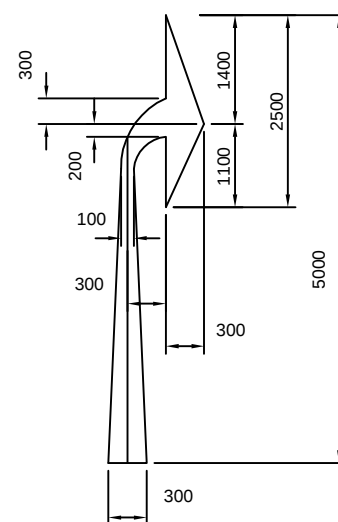
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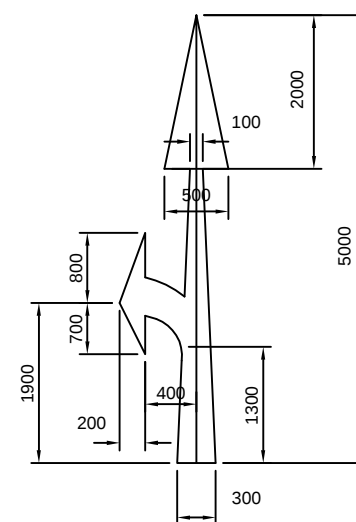
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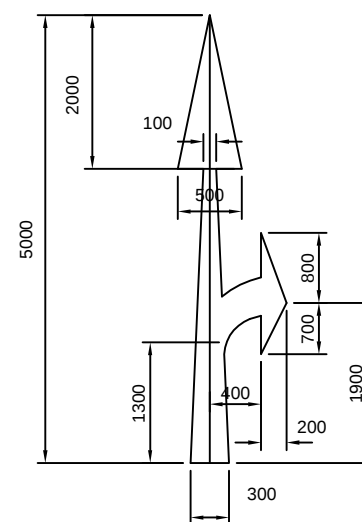
LEFT



RIGHT



STRAIGHT & LEFT

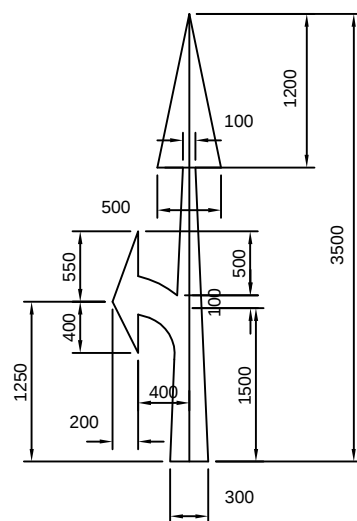


STRAIGHT & RIGHT

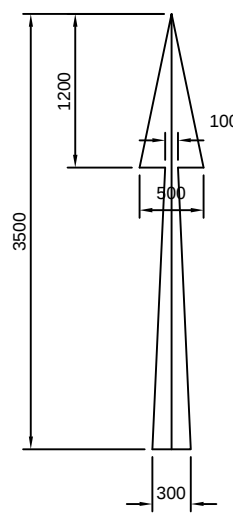
ARROW MARKINGS FOR ROUTE DIRECTION FOR DESIGN SPEED

MORE THAN 50 Km/Hr

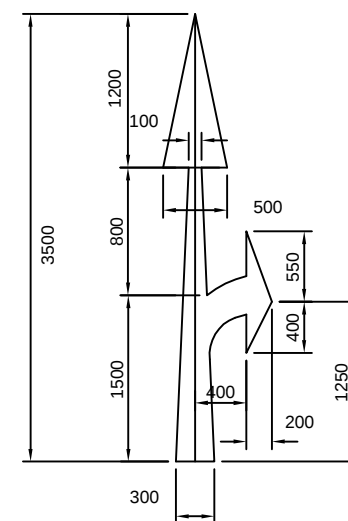
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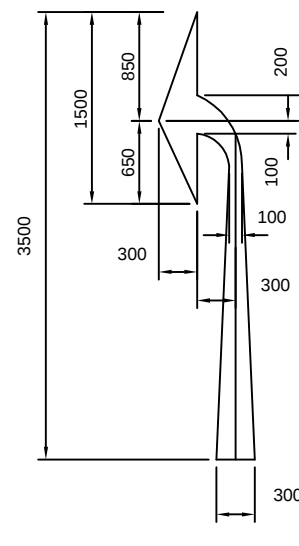
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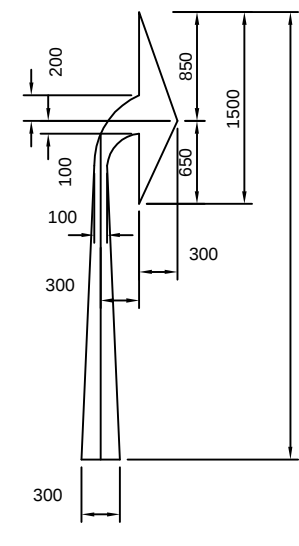
STRAIGHT



STRAIGHT & LEFT



LEFT



RIGHT

ARROW MARKINGS FOR ROUTE DIRECTION FOR DESIGN SPEED

OF 50 Km/Hr. OR LESS

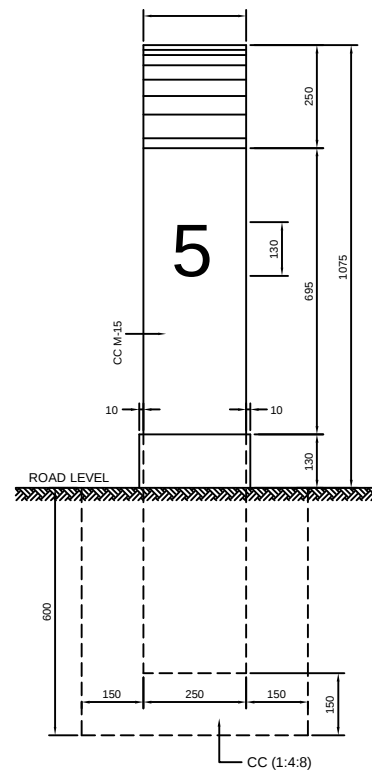
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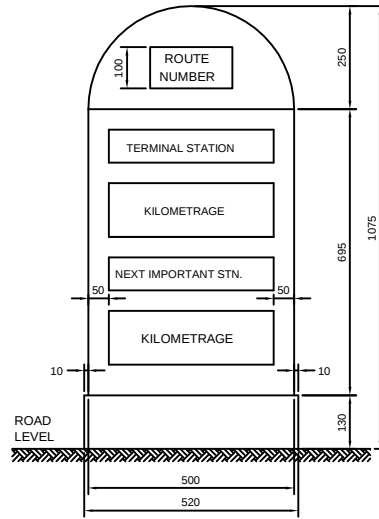
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- 2: ALL DIMENSIONS SHOULD

IRC CODE NO. IRC :35-1997

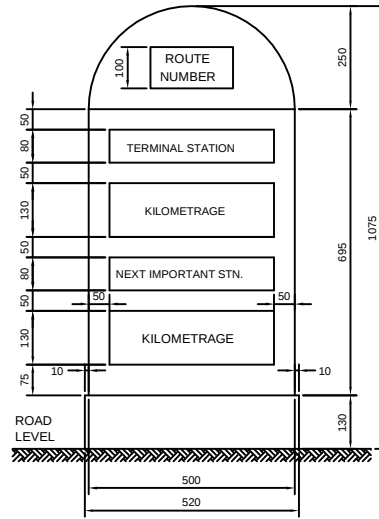
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					N.T.S			SUBMISSION TYPE :			REVISION MKD. - R0		SHEET NO. - 02	
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.	DATE: MAY, 2020	PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF PEREN-DIMAPUR SECTION ON NH 129A ON ENGINEERING, PROCUREMENT AND CONSTRUCTION MODE IN THE STATE OF NAGALAND.(PACKAGE:-NHIDCL/DPR/SN-DMP-PC/MANIPUR/2016)	FINAL DETAILED PROJECT REPORT	DRAWN BY	DESIGNED BY		CHECKED BY	ISSUED BY		
REVISIONS									U. MALIK		B.DAS	S.SADHU	B.KONER	



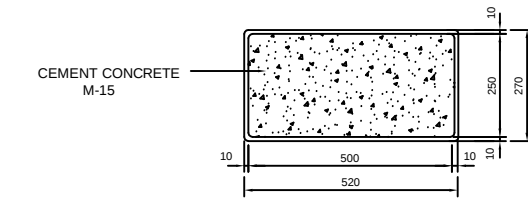
SIDE ELEVATION



FACE - 1

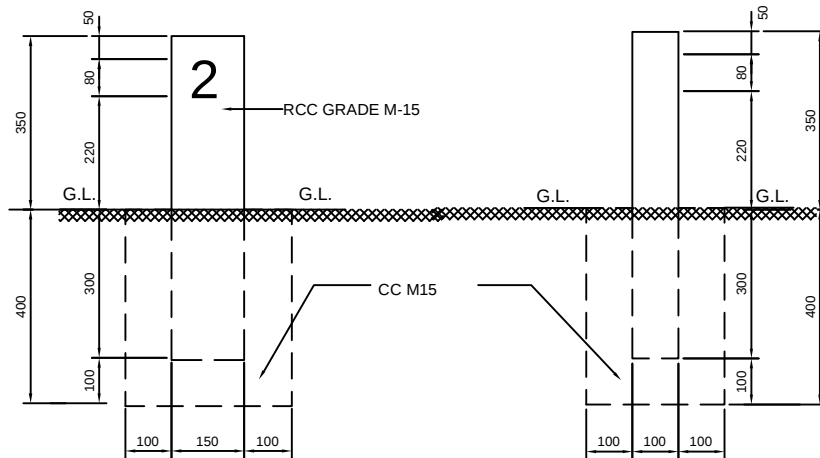


FACE - 2



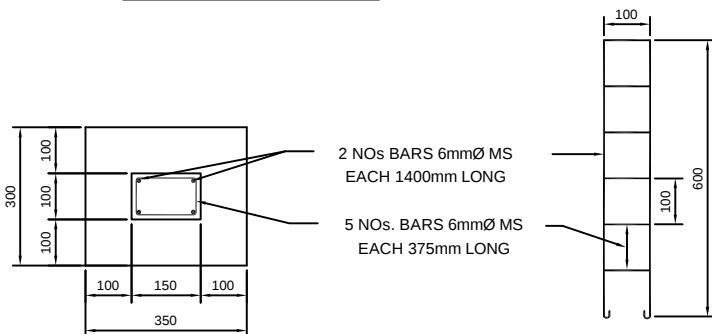
SECTIONAL PLAN

TYPE DESIGN FOR THE 5TH KILOMETRE STONE



FRONT ELEVATION

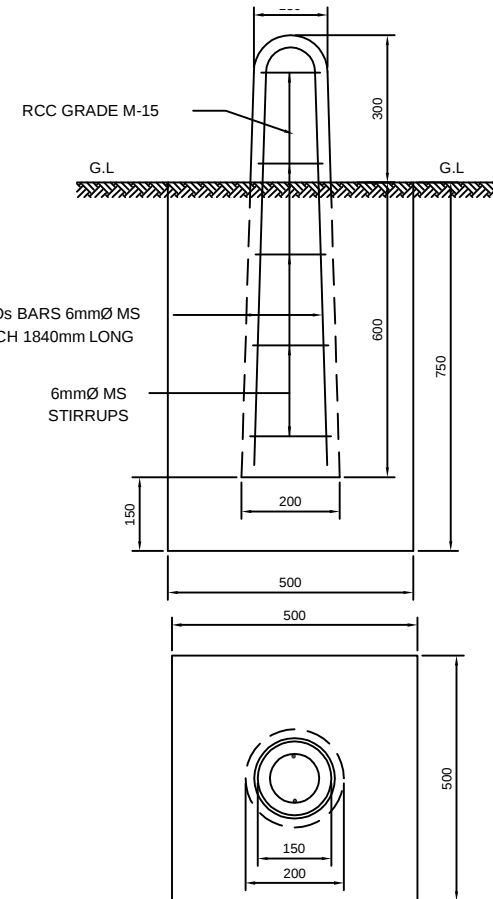
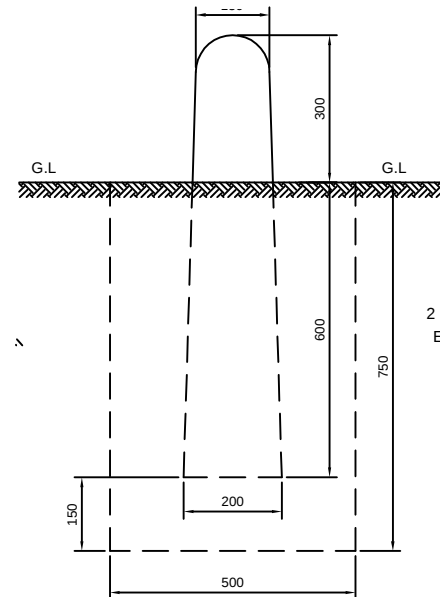
SIDE ELEVATION



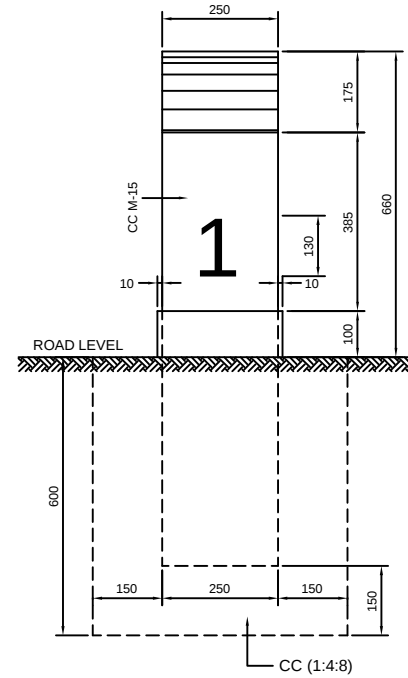
PLAN

SCHEDULE OF REINFORCEMENT

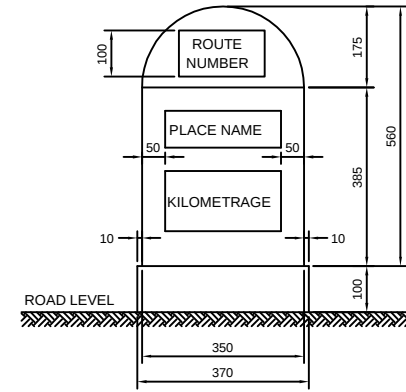
TYPE DESIGN FOR 200 - METRE STONES



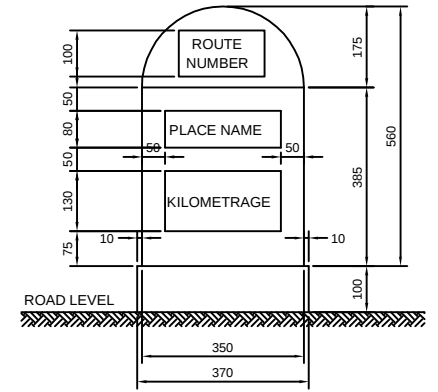
TYPE DESIGN FOR BOUNDARY STONES



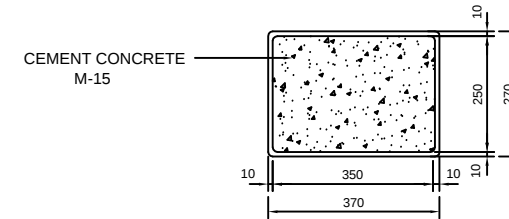
SIDE ELEVATION



FACE - 1

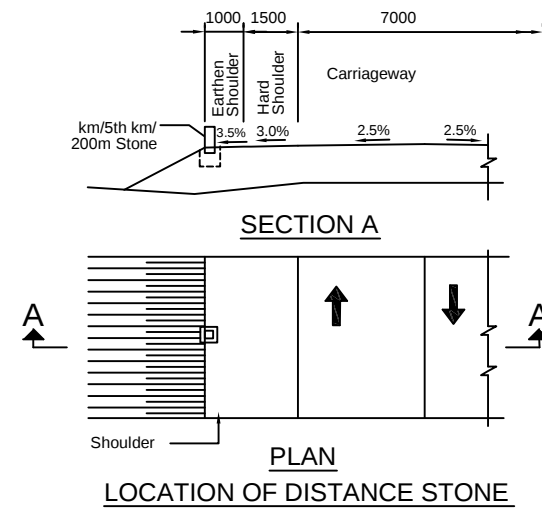


FACE - 2



SECTIONAL PLAN

TYPE DESIGN FOR THE ORDINARY KILOMETRE STONE

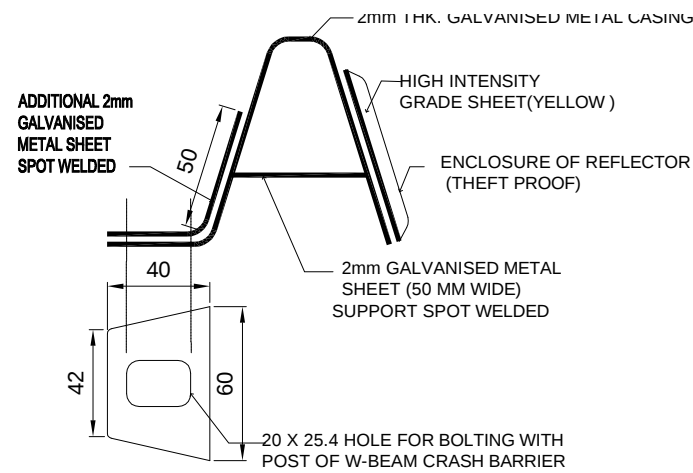


LOCATION OF DISTANCE STONE

NOTES:

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

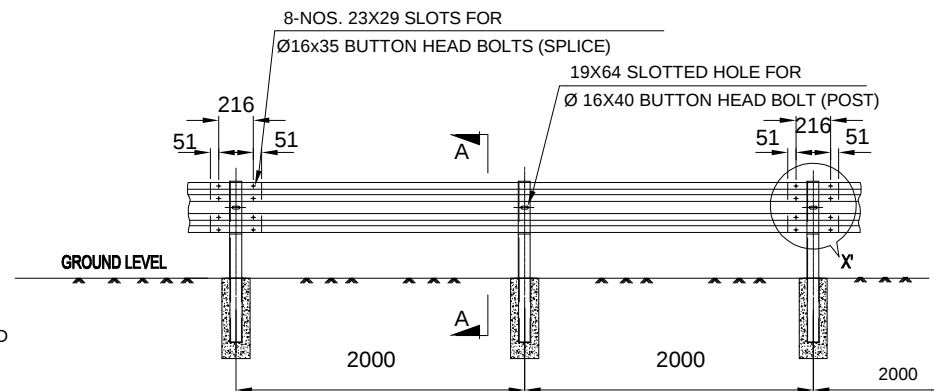
Scale :-					CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building, 3rd Floor, 4, Parliament Street, New Delhi - 110001					CONSULTANT : CETEST Engineering Consultants An ISO 9001, ISO 14001 & OHSAS 18001 Certified Company					DWG NO :- CET/4046/NHIDCL/NH-129A/P-D/FDPR/PKG-IA/MISC- 04			
N.T.S					PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANE OF PEREN-DIMAPUR SECTION ON NH 129A ON ENGINEERING, PROCUREMENT AND CONSTRUCTION MODE IN THE STATE OF NAGALAND.(PACKAGE:-NHIDCL/DPR/SN-DMP-PC/MANIPUR/2016)					SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT					REVISION MKD. - R0			
DATE: MAY, 2020					PACKAGE - I A					CE TESTING COMPANY PVT. LTD. 124-A, N.S.C. Bose Road, Kolkata - 700092.					SHEET NO. - 01			
REVISIONS															DRAWN BY			
															DESIGNED BY			
															CHECKED BY			
															ISSUED BY			
															U. MALIK			
															B.DAS			
															S.SADHU			
															B.KONER			



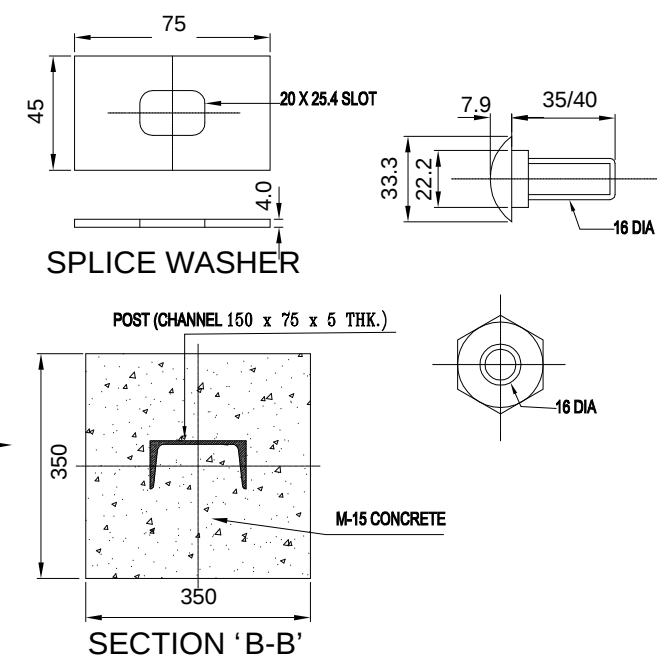
GUARD RAIL REFLECTOR

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

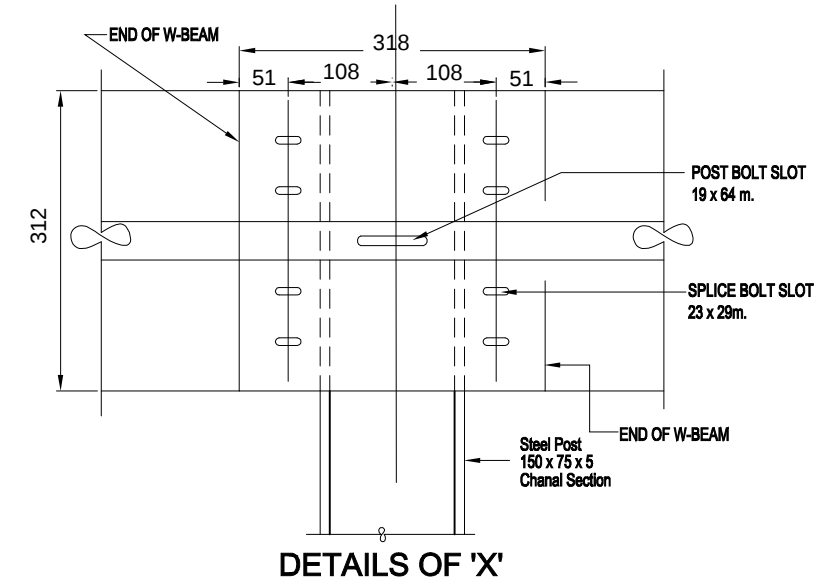
GUARD RAIL REFLECTOR WILL BE BOLTED REPLACING SPLICE WASHER EVERY 10 POSTS INTERVAL



ELEVATION OF SINGLE SIDED GUARD RAIL



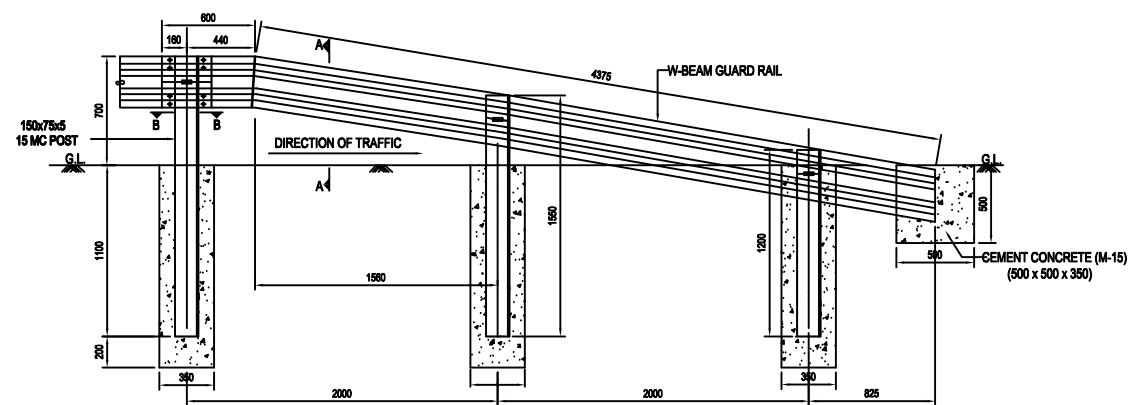
SECTION 'B-B'



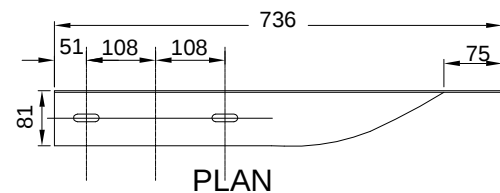
DETAILS OF 'X'

NOTES :

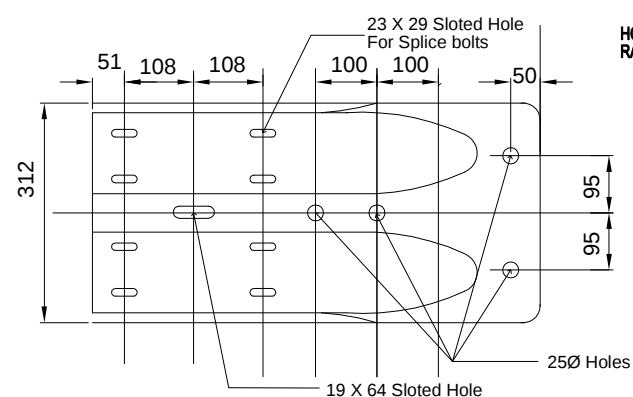
- ALL DIMENSIONS ARE IN mm UNLESS NOTED OTHERWISE.
- ALL PUNCHING DIMENSIONS UNLESS OTHERWISE STATED = ± 1 mm.
- WELDING ELECTRODES SHALL CONFORM TO IS:314.
- FOR GUARD RAIL BEAMS, POSTS & SPACER MATERIAL SHALL CONFORM TO IS:10748, GRADE-II. IS 808, IS 2062
- BOLTS,NUTS & WASHERS SHALL BE ELECTRO GALVANISED.
- GUARD RAIL, POSTS, SPACERS, FOUNDATION BOLTS SHALL BE HOT DIP GALVANISED.
- THE OVER LAPPING OF THE GAURD RAIL BEAM SHALL BE ACHIEVED USING SUITABLE SIZE WASHERS.
- 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.
- ALL FITTINGS TO CONFORM TO IS : 1367 AND IS : 1364
- W-BEAM GUARDRAIL ARE TO BE FABRICATED AND INSTALLED AS PER SECTION 810 OF MORT&H'S SPECIFICATION FOR METAL BEAM CRASH BARRIER.



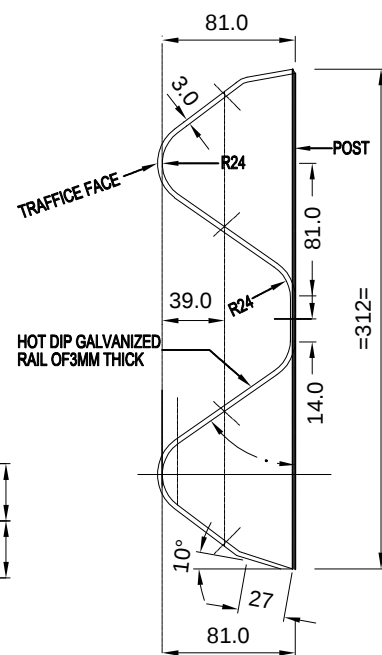
ELEVATION SHOWING SINGLE SIDED GAURD RAIL SYSTEM - END SIDE ARRANGEMENT



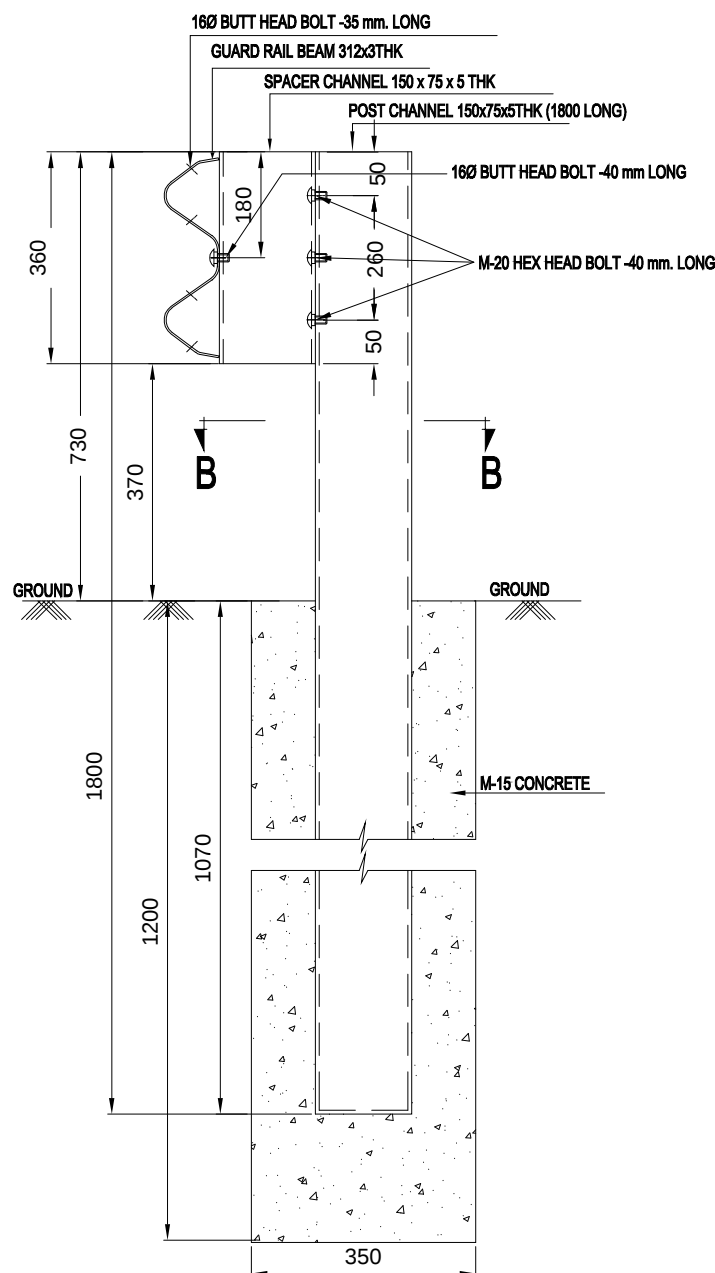
PLAN



ELEVATION OF W BEAM END SECTION (FLARED)

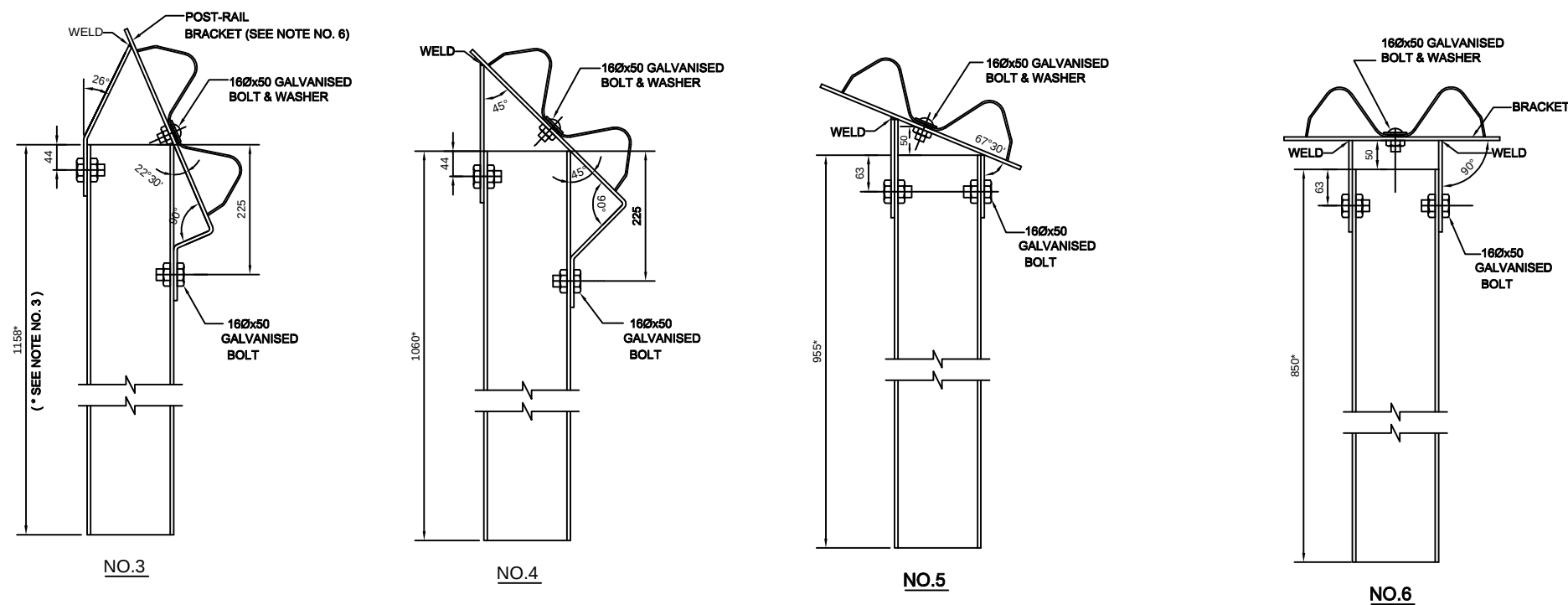
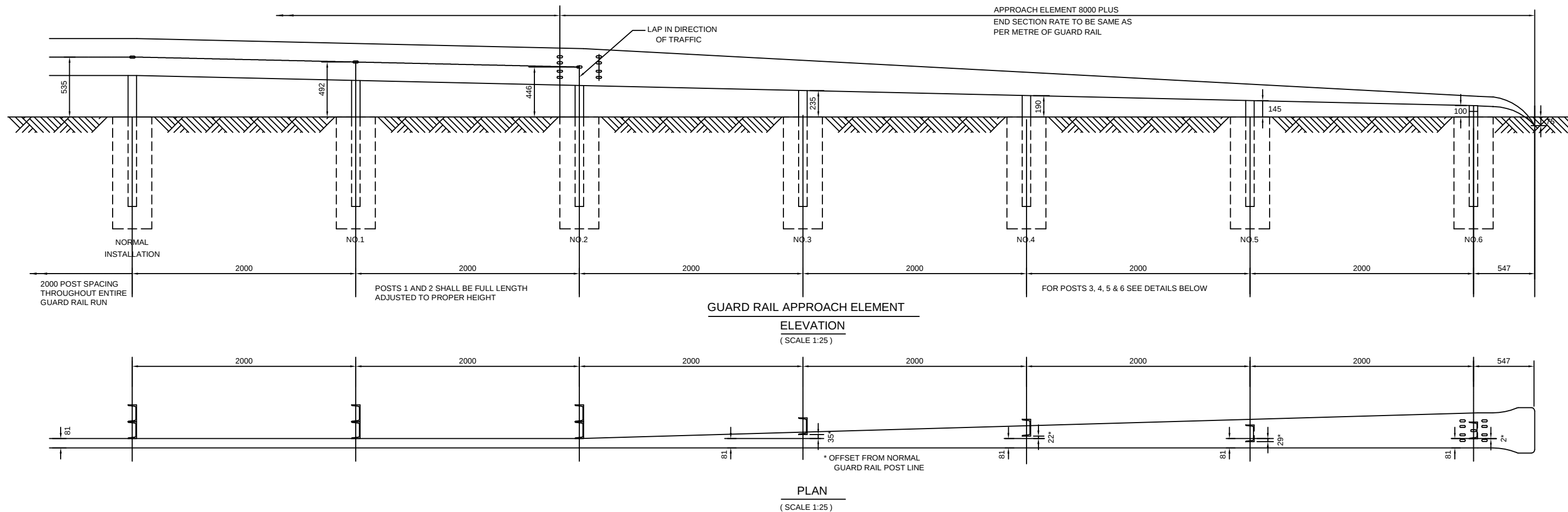


TYPICAL CROSS SECTION OF W-BEAM



CROSS SECTION A-A

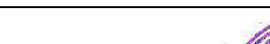
					Scale :-		CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building, 3rd Floor, 4, Parliament Street, New Delhi - 110001	DETAILS OF W-BEAM METAL CRASH BARRIER		CONSULTANT :  CE TESTING COMPANY PVT. LTD. 124-A, N.S.C. Bose Road, Kolkata - 700092. 	DWG NO :- CET/4046/NHIDCL/NH-129A/P-D/FDPR/PKG-IA/MISC- 05			
					N.T.S						REVISION MKD. - R0		SHEET NO. - 01	
					DATE: MAY, 2020	PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANEING OF PEREN-DIMAPUR SECTION ON NH 129A ON ENGINEERING, PROCUREMENT AND CONSTRUCTION MODE IN THE STATE OF NAGALAND.(PACKAGE:-NHIDCL/DPR/SN-DMP-PC/MANIPUR/2016)	SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT	PACKAGE - I A			DRAWN BY	DESIGNED BY	CHECKED BY	ISSUED BY
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.							 U. MALIK	 B.DAS	 S.SADHU	 B.KONER
REVISIONS														

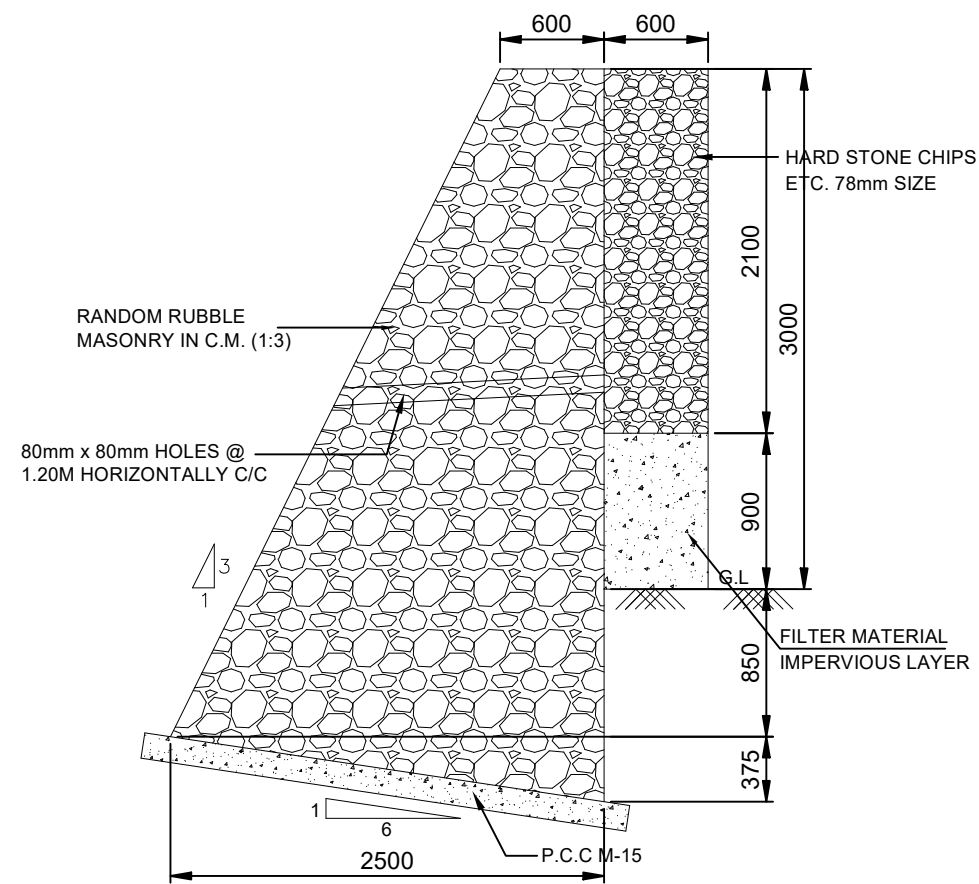


(SCALE 1:7.5)

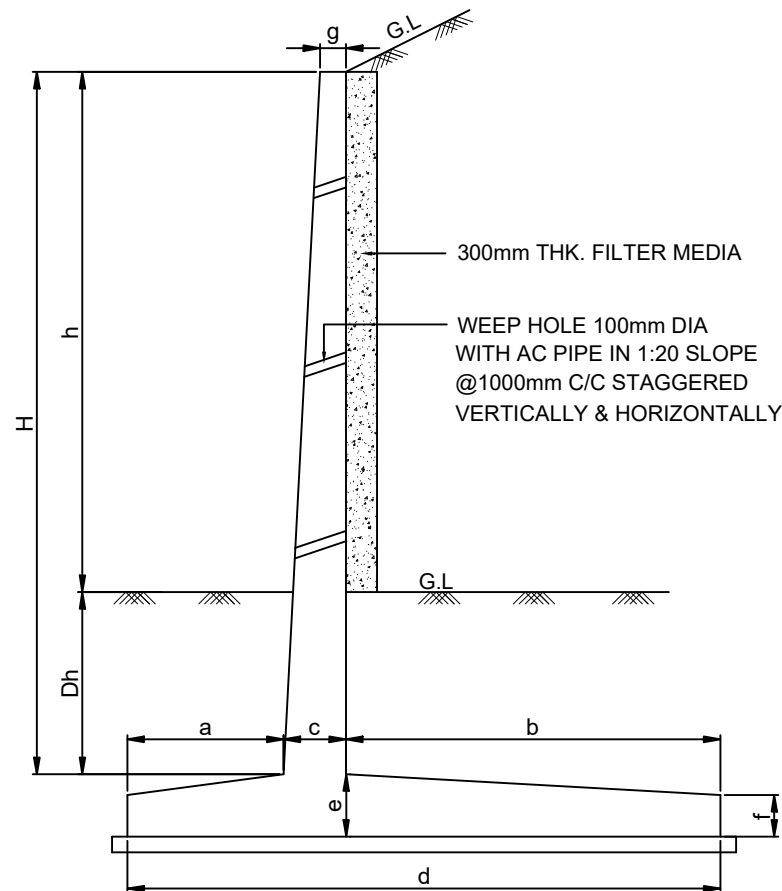
NOTES :

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 PRODUCE 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.

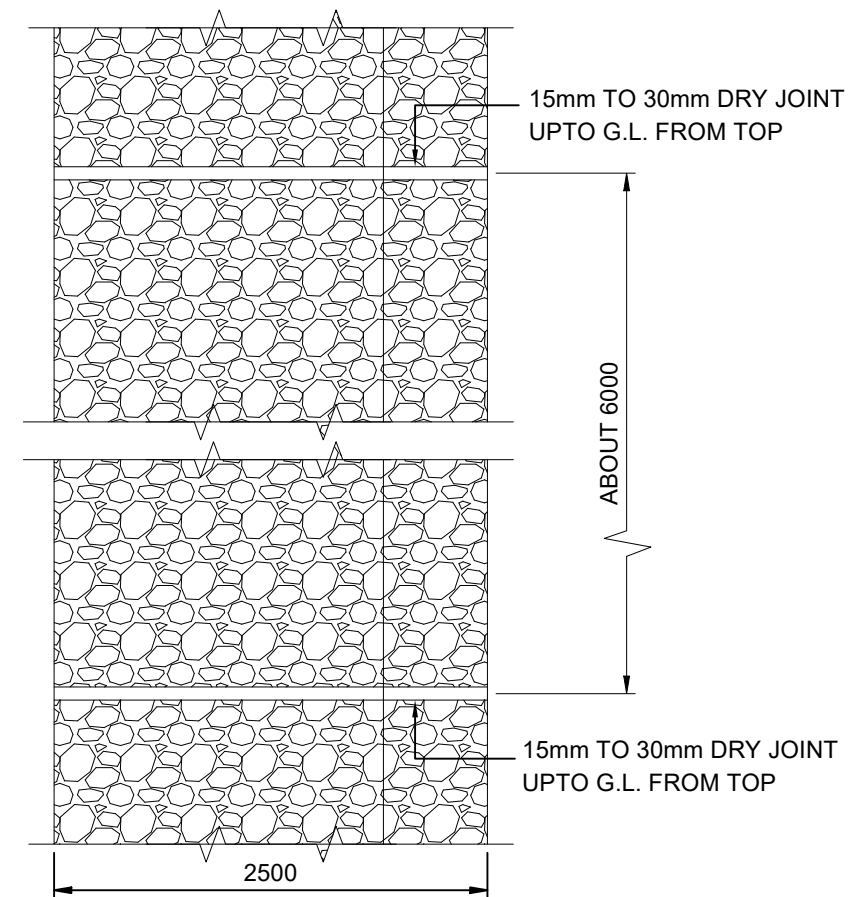
					Scale :-		CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building, 3rd Floor, 4, Parliament Street, New Delhi - 110001	DETAILS OF W-BEAM METAL CRASH BARRIER		CONSULTANT :  CE TESTING COMPANY PVT. LTD. 124-A, N.S.C. Bose Road, Kolkata - 700092. 	DWG NO :- CET/4046/NHIDCL/NH-129A/P-D/FDPR/PKG-IA/MISC- 05									
					N.T.S						REVISION MKD. - R0		SHEET NO. - 02							
					DATE: MAY, 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 PEREN-DIMAPUR SECTION ON NH 129A ON ENGINEERING, PROCUREMENT AND CONSTRUCTION MADE IN THE STATE OF NAGALAND.(PACKAGE:-NHIDCL/DPR/SN-DMP-PC/MANIPUR/2016)					SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT		DRAWN BY		DESIGNED BY		CHECKED BY		ISSUED BY	
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.							PACKAGE - I A		 U. MALIK		 B.DAS		 S.SADHU		 B.KONER	
REVISIONS																				



TYPICAL CROSS SECTION OF
BREAST WALL OF 3.0 M HEIGHT
(SCALE 1:25)



TYPICAL CROSS SECTION OF
R.C.C RETAINING WALL (3.0M TO 6.0M HEIGHT)
(SCALE 1:50)



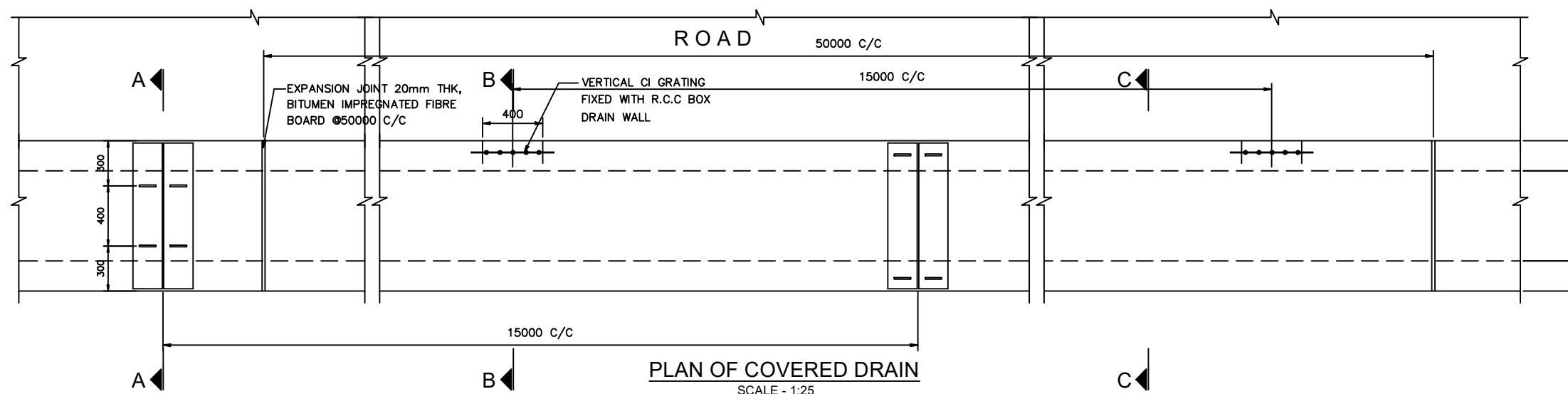
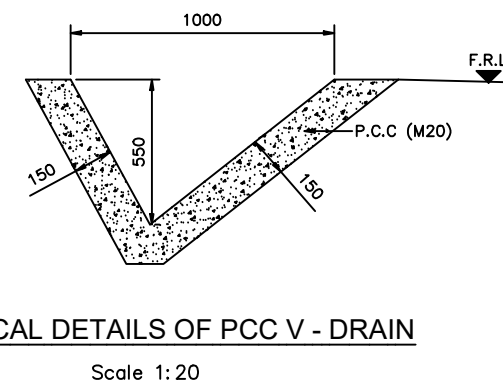
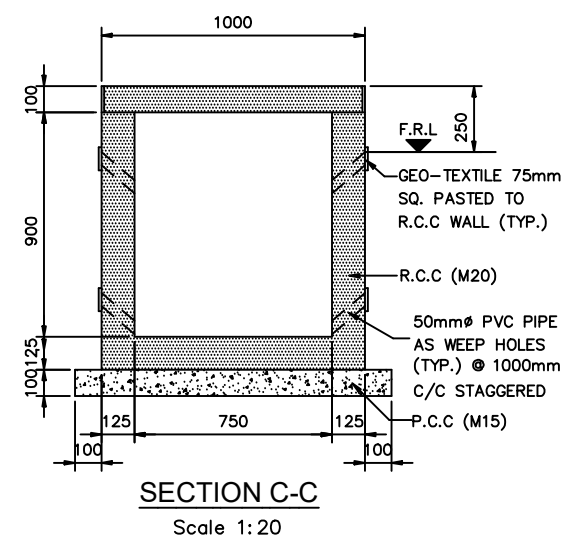
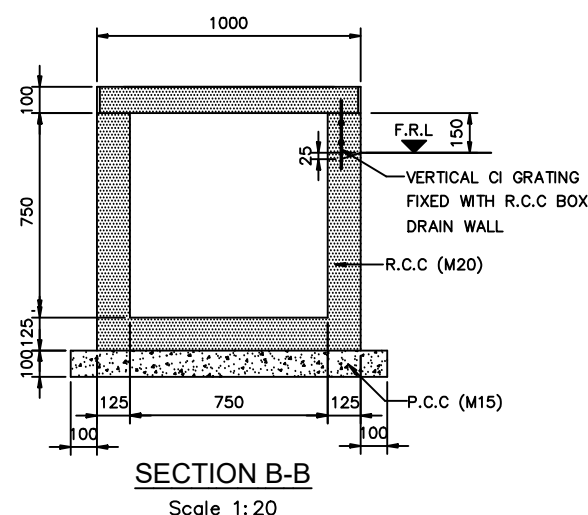
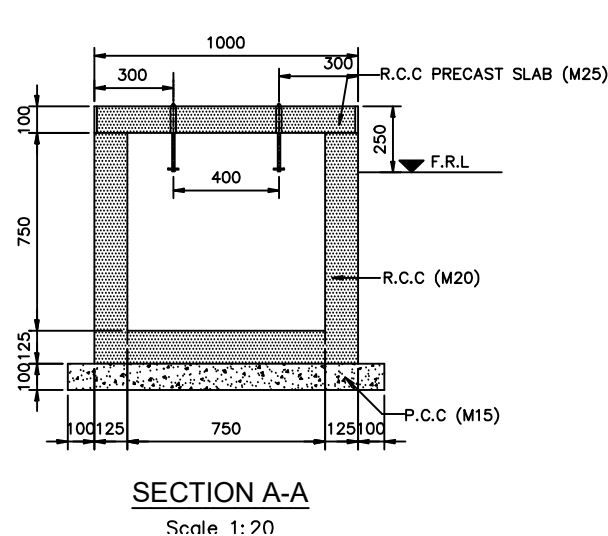
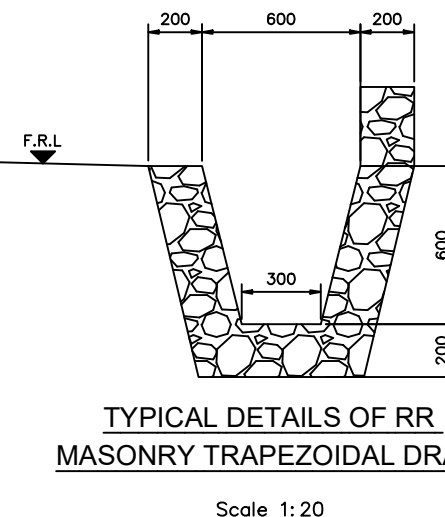
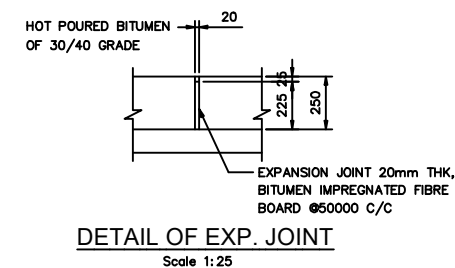
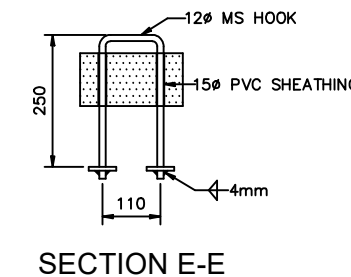
PLAN OF BREAST WALL
(AT GROUND LEVEL)
(SCALE 1:30)

Details Dimention of R.C.C Retaining Wall				
TOTAL HT.	3	4	5	6
h	3.00	4.00	5.00	6.00
Dh	1.00	1.50	1.75	1.75
H	4.00	5.50	6.75	7.75
g	0.20	0.25	0.25	0.25
b	2.10	2.90	3.60	4.20
c	0.40	0.50	0.60	0.60
a	0.75	1.20	1.50	1.90
d	3.25	4.60	5.70	6.70
f	0.30	0.40	0.40	0.50
e	0.40	0.50	0.60	0.75
f	0.30	0.40	0.40	0.50
e	0.40	0.50	0.60	0.75

NOTES :-

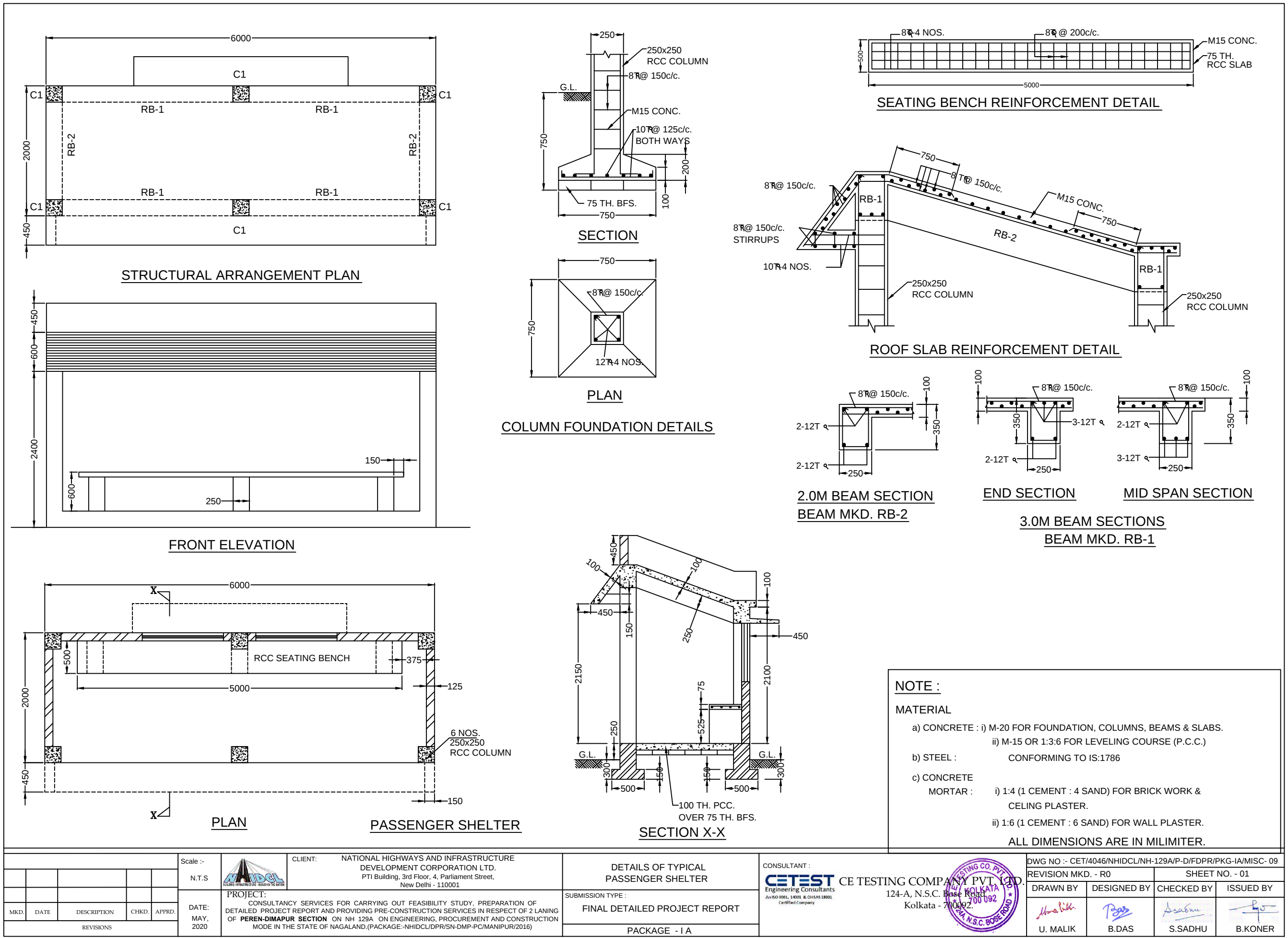
- ALL DIMENSIONS ARE IN mm, UNLESS NOTED OTHERWISE.
- ON THE RETAINING WALL SIDE THERE SHALL BE NO FOOTPATH AND DRAIN.

Scale :- N.T.S					CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building, 3rd Floor, 4, Parliament Street, New Delhi - 110001		DETAILS OF RETAINED ING WALL & BREAST WALL &		CONSULTANT : CE TESTING COMPANY PVT. LTD. 124-A, N.S.C. Bose Road, Kolkata - 700092		DWG NO :- CET/4046/NHIDCL/NH-129A/P-D/FDPR/PKG-IA/MISC- 06			
PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF PEREN-DIMAPUR SECTION ON NH 129A ON ENGINEERING, PROCUREMENT AND CONSTRUCTION MODE IN THE STATE OF NAGALAND. (PACKAGE:-NHIDCL/DPR/SN-DMP-PC/MANIPUR/2016)					SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT		PACKAGE - I A		REVISION MKD. - R0		SHEET NO. - 01 OF 02			
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.	DATE: MAY, 2020				DRAWN BY		DESIGNED BY		CHECKED BY	
REVISIONS									U. MALIK		B.DAS		S.SADHU	
													B.KONER	



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

					Scale :- N.T.S	NHIDCL NAGALAND HIGHWAYS DEVELOPMENT CORPORATION LTD.	CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building, 3rd Floor, 4, Parliament Street, New Delhi - 110001	TYPICAL DETAILS OF DRAINS	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/4046/NHIDCL/NH-129A/P-D/FDPR/PKG-IB/MISC- 07
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.	DATE:	PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANEING OF PEREN-DIMAPUR SECTION ON NH 129A ON ENGINEERING, PROCUREMENT AND CONSTRUCTION MODE IN THE STATE OF Nagaland.(PACKAGE:-NHIDCL/DPR/SN-DMP-PC/MANIPUR/2016)	SUBMISSION TYPE :	FINAL DETAILED PROJECT REPORT			REVISION MKD.- R0
REVISONS					MAY, 2020			PEREN TOWN			SHEET NO. - 01
											DRAWN BY
											DESIGNED BY
											CHECKED BY
											ISSUED BY
											U. MALIK
											B.DAS
											S.SADHU
											B.KONER



Scale :- N.T.S					CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building, 3rd Floor, 4, Parliament Street, New Delhi - 110001					CONSULTANT: CETEST CE TESTING COMPANY PVT. LTD. Engineering Consultants 124-A, N.S.C. Bose Road, Kolkata - 700092					DWG NO :- CET/4046/NHIDCL/NH-129A/P-D/FDPR/PKG-IA/MISC- 09 REVISION MKD. - R0 SHEET NO. - 01				
PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF PEREN-DIMAPUR SECTION ON NH 129A ON ENGINEERING, PROCUREMENT AND CONSTRUCTION MODE IN THE STATE OF NAGALAND.(PACKAGE:-NHIDCL/DPR/SN-DMP-PC/MANIPUR/2016)					SUBMISSION TYPE : FINAL DETAILED PROJECT REPORT					DRAWN BY U. MALIK					DESIGNED BY B.DAS				
DATE: MAY, 2020					PACKAGE - I A					CHECKED BY S.SADHU					ISSUED BY B.KONER				
REVISIONS																			
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.															

PART-B

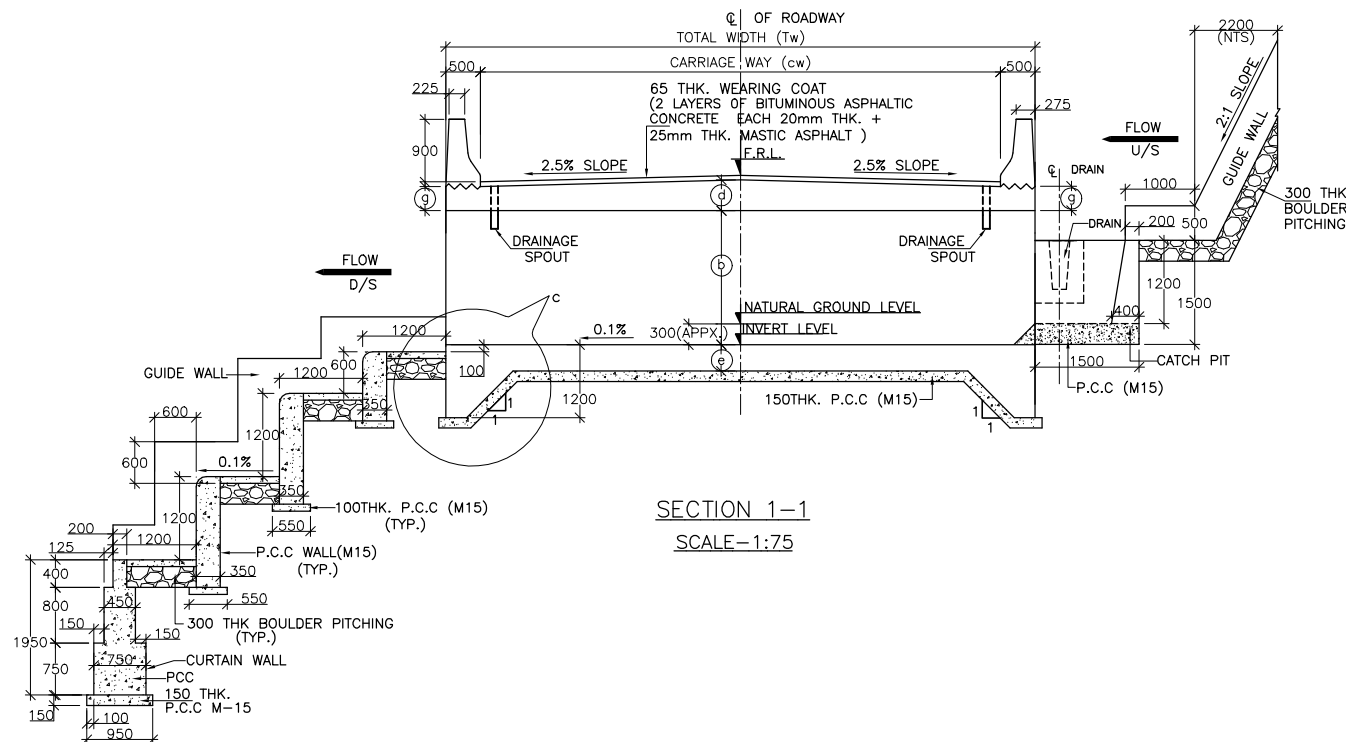
GAD OF STRUCTURE

SI No.	Survey Chainage (Km)	DESIGN CHAINAGE (KM)	STR. NO.	PROPOSAL	Type of Existing Structures (Pipe/ Slab/ Box/ Arch)	Span Arrangement (No. x Length x Height) (m)	EGL / EX. INVERT	Finished Road Level (M)	PROPOSAL TYPE	Size Span x Height (M X M)	Earth Cushion Height (m)	TOTAL WIDTH (TW)	CARRIAGE WAY (CW)	VENT HEIGHT (b)	TOP SLAB THICKNES S	(MAXIMUM DEPTH OF TOP SLAB)	BOTTOM SLAB THICKNESS	PROPOSED INVERT LEVEL	FOUNDING LEVEL	MINIMUM VENT HEIGHT (b1)	MAXIMUM VENT HEIGHT (b2)	(n1)	(n2)	PROTECTION TYPE	CROSS FALL	N C	SIDE OF CURVE	SE%
1	118.715	120.395	121/2	Reconstruction	HP Culvert	1 x 1.0 dia	1361.157	1365.445	BOX CULVERT	2.0 X 3.0	1.3	11	10	3.0	0.307	0.307	0.300	1360.850	1360.550	-	-	-	-	STEPPED PROTECTION WITH CATCHPIT	NC	2.5%		
2	119.359	121.035	122/1	Reconstruction	HP Culvert	1 x 0.9 dia	1364.371	1366.214	BOX CULVERT	2.0 X 2.0		11	10	2.0	0.350	0.475	0.380	1363.674	1363.294	-	-	-	-	STEPPED PROTECTION WITH CATCHPIT	NC	2.5%		
3	119.685	121.347	122/2	Reconstruction	HP Culvert	2 x 1.0 dia	1345.723	1349.398	BOX CULVERT	2.0 X 2.0	1.7	11	10	2.0	0.275	0.275	0.300	1344.748	1344.448	-	-	-	-	STEPPED PROTECTION WITH CATCHPIT	SE		L to R	7.0%
4	120.01	121.645	122/3	Reconstruction	HP Culvert	1 x 1.0 dia	1328.781	1331.892	BOX CULVERT	3.0 X 3.0		11	10	3.0	0.420	0.420	0.420	1327.707	1327.287	3.000	3.700	3.840	4.540	STEPPED PROTECTION WITH CATCHPIT	SE		L to R	7.0%
5	120.08	121.705	122/4	Reconstruction	HP Culvert	1 x 1.0 dia	1318.782	1327.880	BOX CULVERT	3.0 X 3.0	6.1	11	10	3.0	0.410	0.410	0.450	1318.372	1317.922	-	-	-	-	STEPPED PROTECTION WITH CATCHPIT	NC	2.5%		
6	120.63	122.230	123/1	Reconstruction	HP Culvert	1 x 0.9 dia	1298.000	1302.160	BOX CULVERT	2.0 X 2.0	2.2	11	10	2.0	0.275	0.275	0.300	1297.325	1297.025	-	-	-	-	STEPPED PROTECTION WITH CATCHPIT	SE		L to R	4.0%
7	120.78	122.380	123/2	Reconstruction	HP Culvert	1 x 0.9 dia	1294.288	1298.386	BOX CULVERT	2.0 X 2.0	2.1	11	10	2.0	0.275	0.275	0.300	1293.363	1293.063	-	-	-	-	STEPPED PROTECTION WITH CATCHPIT	SE		L to R	6.5%
8	121.016	122.618	123/3	Reconstruction	HP Culvert	1 x 0.9 dia	1289.599	1292.395	BOX CULVERT	2.0 X 2.0	0.8	11	10	2.0	0.275	0.275	0.300	1288.624	1288.324	-	-	-	-	STEPPED PROTECTION WITH CATCHPIT	SE		L to R	7.0%
9	121.39	122.955	123/4	Reconstruction	HP Culvert	1 x 1.0 dia	1280.014	1281.717	BOX CULVERT	2.0 X 2.0		11	10	2.0	0.350	0.350	0.380	1278.602	1278.222	2.000	2.700	2.730	3.430	STEPPED PROTECTION WITH CATCHPIT	SE		L to R	7.0%
10	121.43	123.010	124/1	Reconstruction	HP Culvert	1 x 1.2 dia	1276.872	1280.304	BOX CULVERT	2.0 X 2.0	1.4	11	10	2.0	0.275	0.275	0.300	1275.897	1275.597	-	-	-	-	STEPPED PROTECTION WITH CATCHPIT	SE		R to L	7.0%
11	121.485	123.048	124/2	Reconstruction	HP Culvert	1 x 1.2 dia	1275.737	1278.947	BOX CULVERT	2.0 X 2.0	1.2	11	10	2.0	0.275	0.275	0.300	1275.462	1275.162	-	-	-	-	STEPPED PROTECTION WITH CATCHPIT	NC	2.5%		
12	121.532	123.100	124/5	Reconstruction	HP Culvert	1 x 1.2 dia	1272.731	1276.987	BOX CULVERT	2.0 X 2.0	2.3	11	10	2.0	0.275	0.275	0.300	1272.456	1272.156	-	-	-	-	STEPPED PROTECTION WITH CATCHPIT	NC	2.5%		

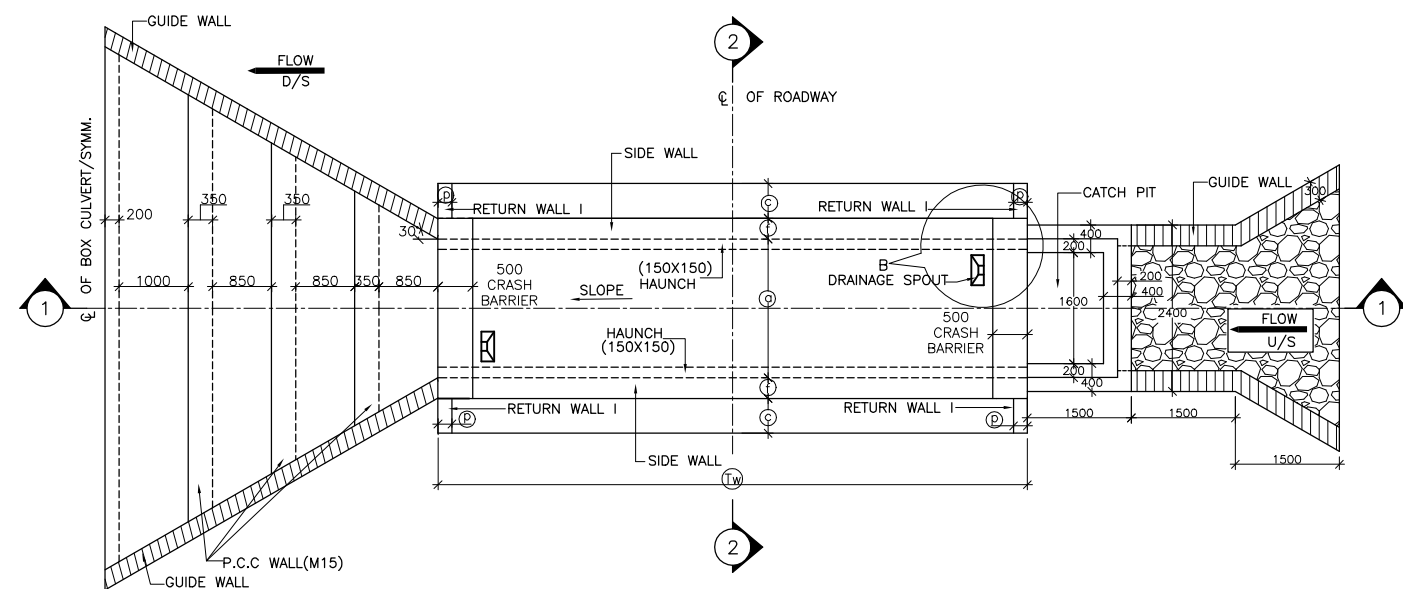
CONTENT

PROPOSED CULVERTS (PEREN TOWN)
ROAD NAME : PEREN-DIMAPUR

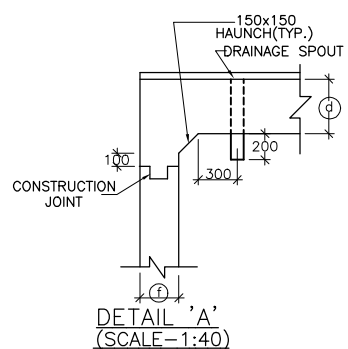
SL. NO.	DESCRIPTION	DRAWING NO.	NO. OF SHEETS
01.	LEVEL DETAILS OF PROPOSED CULVERTS		01
02.	SINGLE CELL R.C.C. BOX CULVERT WITH CATCHPIT AND STEPPED PROTECTION (NORMAL CAMBER) :-		
	GENERAL ARRANGEMENT	CET/4046/NHIDCL/NH-129A/P-D/FDPR/PEREN TOWN/BC/NC/S-C/GA	01
03.	SINGLE CELL R.C.C. BOX CULVERT WITH EARTH CUSHION, AND STEPPED PROTECTION (NORMAL CAMBER) :-		
	GENERAL ARRANGEMENT	CET/4046/NHIDCL/NH-129A/P-D/FDPR/PEREN TOWN/BC/NC/EC/S-C/GA	01
04.	SINGLE CELL R.C.C. BOX CULVERT WITH EARTH CUSHION, CATCHPIT AND STEPPED PROTECTION (SUPER ELEVATION) :-		
	GENERAL ARRANGEMENT	CET/4046/NHIDCL/NH-129A/P-D/FDPR/PEREN TOWN/BC/SE/EC/S-C/GA	01
05.	SINGLE CELL R.C.C. BOX CULVERT WITH CATCHPIT AND STEPPED PROTECTION (SUPER ELEVATION) :-		
	GENERAL ARRANGEMENT	CET/4046/NHIDCL/NH-129A/P-D/FDPR/PEREN TOWN/BC/SE/S-C/GA	01
06.	MISCELLANEOUS DRAWING FOR SINGLE CELL R.C.C. BOX CULVERT :-		
	GENERAL ARRANGEMENT	CET/4046/NHIDCL/NH-129A/P-D/FDPR/PEREN TOWN/BC/MISC	01



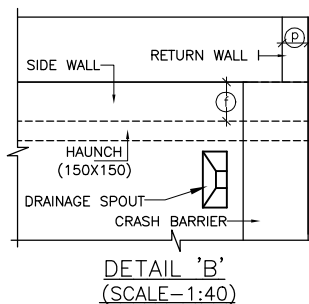
SECTION 1-1
SCALE=1:75



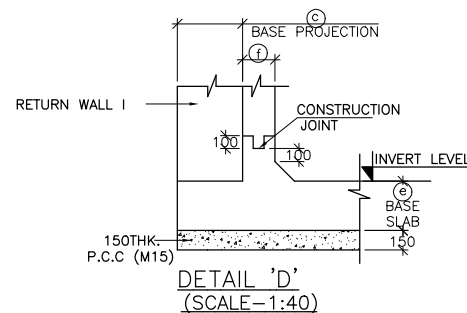
PLAN
(SCALE=1:75)



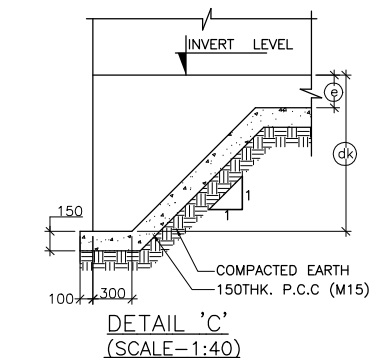
DETAIL 'A'
(SCALE=1:40)



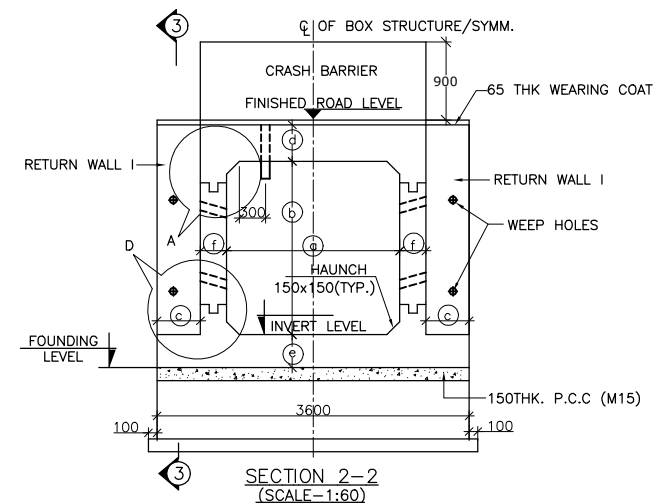
DETAIL 'B'
(SCALE=1:40)



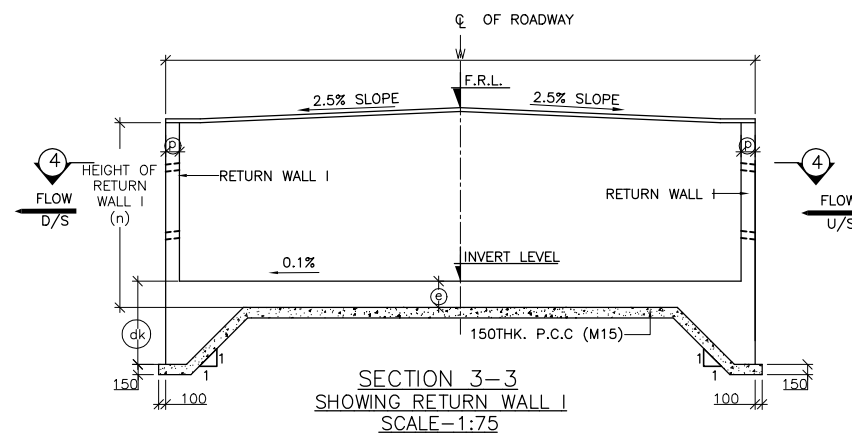
DETAIL 'D'
(SCALE=1:40)



DETAIL 'C'
(SCALE=1:40)

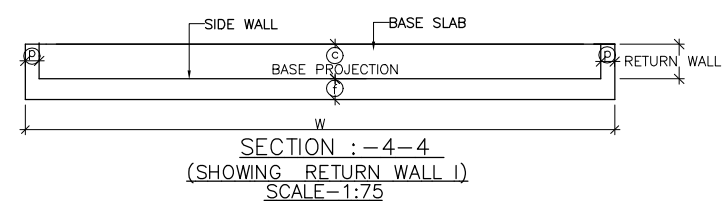


SECTION 2-2
(SCALE=1:60)



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

SL. No.	Design Chainage (Km)	Str. No.	Size Span x Height (M x M)	Total Width (TW)	Carriageway (CW)	Finished Road Level (M)	Proposed Invert Level	Founding Level	Top Slab Thickness
1	121.035	122/1	2.0 X 2.0	11	10	1366.214	1363.674	1363.294	0.350



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

NOTES :

- ALL DIMENSIONS ARE IN MM. UNLESS OTHERWISE MENTIONED.
- 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
- GRADE OF STEEL Fe 500 AS PER I.S.-1786.
- CLASS 70R TRACKED PRODUCING WORST EFFECT ARE CONSIDERED FOR DESIGN.
- PROPERTIES OF BACKFILL SOIL $\gamma = 1.8 \text{ t/m}^3$, $\phi = 30^\circ$.
- 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.
- SOFT AND LOOSE PATCHES IN THE BEARING AREA ARE TO BE REPLACED BY COMPACTED GRANULAR FILLS WITH LAYERS NOT EXCEEDING 300mm.
- EARTH BELOW BOX SHALL BE WELL COMPACTED TO ACHIEVE MINIMUM 15 t/m^2 BEARING CAPACITY.
- SLOPE ON DECK SLAB WILL VARY AS PER ROAD SLOPE IN DIFFERENT CHAINAGES.
- CET/4046/NHIDCL/NH-129A/P-D/DDPR/PKG-I/BC/MISC (SHEET NO.-01)

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

SCALE: AS SHOWN
DATE: MARCH, 2019



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

PROJECT:
CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANE OF PEREN-DIMAPUR SECTION ON NH 129A (NAGALAND) ON ENGINEERING, PROCUREMENT AND CONSTRUCTION MODE IN THE STATE OF MANIPUR (PACKAGE:-NHIDCL/DDPR/SN-DMP-PC/MANIPUR/2016)

TITLE : GENERAL ARRANGEMENT OF SINGLE CELL R.C.C BOX CULVERT WITH CATCHPIT & STEPPED PROTECTION (NORMAL CAMBER)

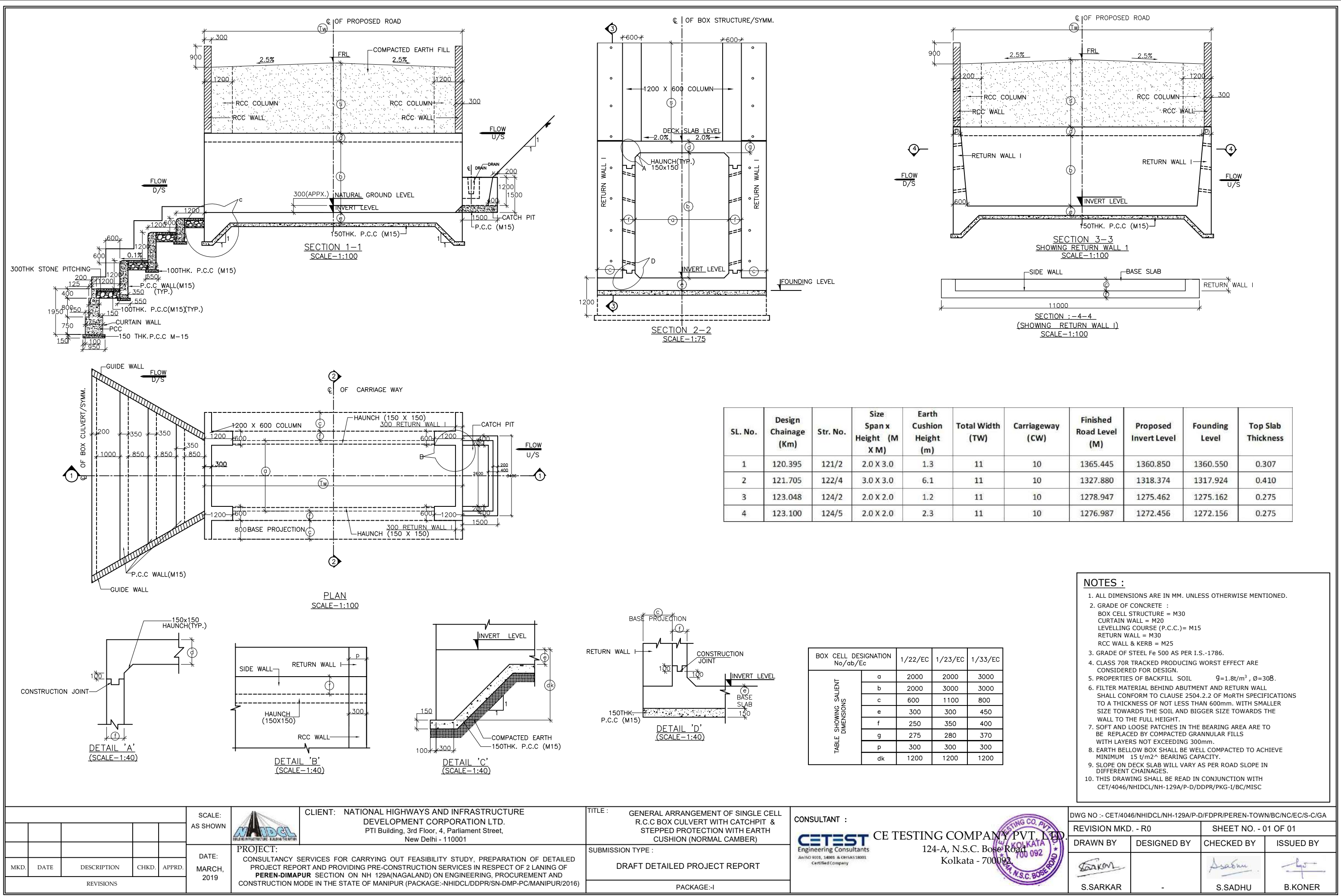
SUBMISSION TYPE : DRAFT DETAILED PROJECT REPORT

PACKAGE-I

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

CE TEST Engineering Consultants
An ISO 9001:2005 & ISO 14001:2005 Certified Company

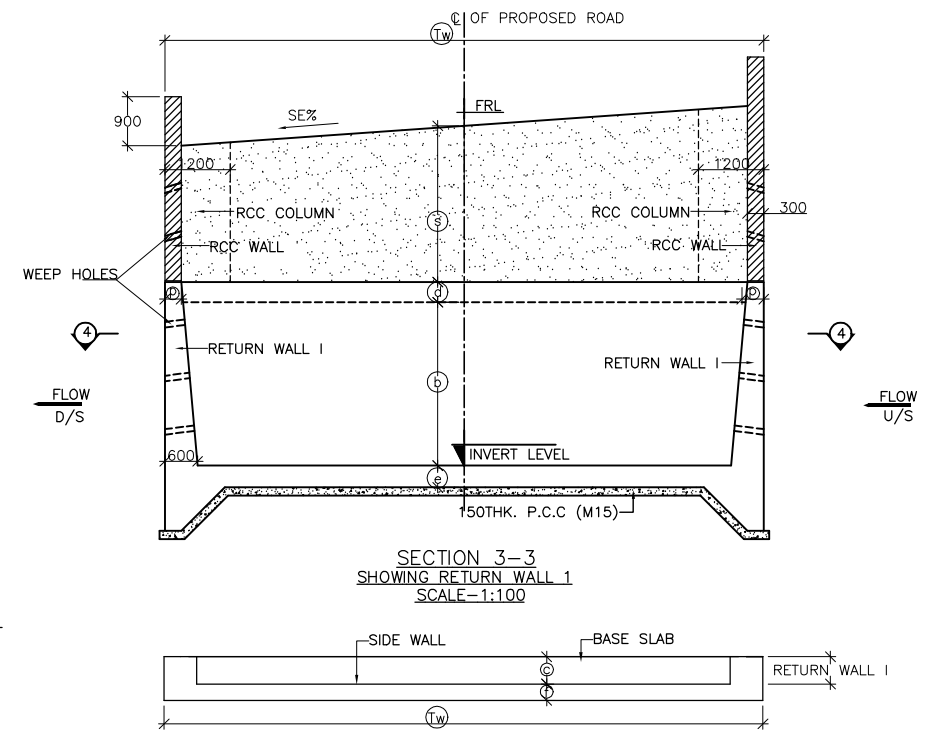
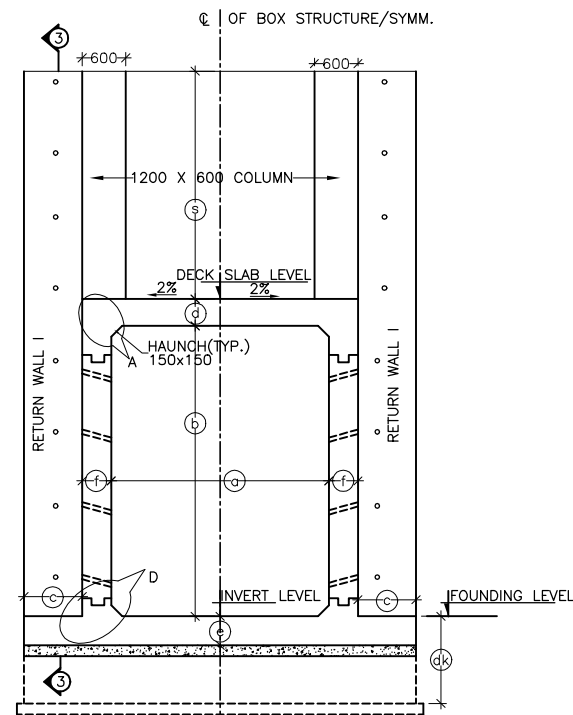
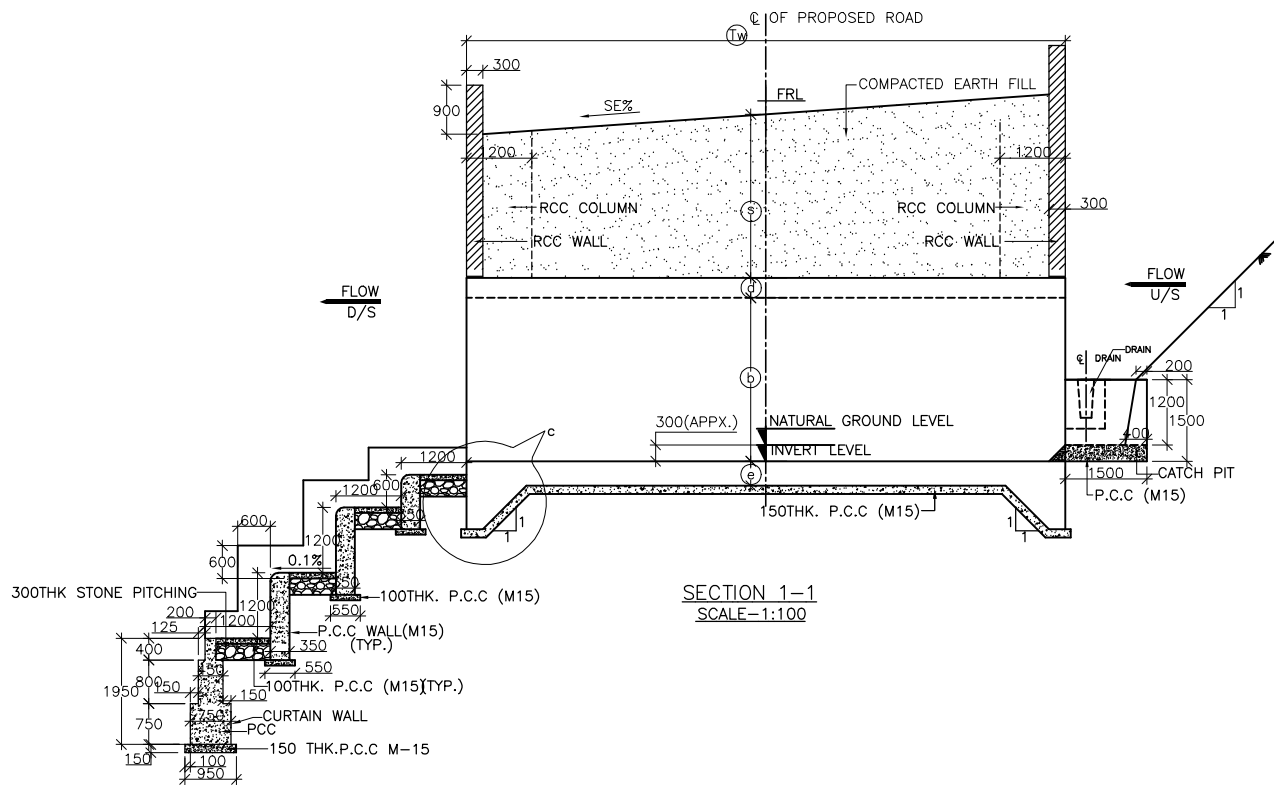
DWG NO : CET/4046/NHIDCL/NH-129A/P-D/DDPR/PEREN TOWN/BC/NC/S-C/GA	REVISION MKD. - R0	SHEET NO. - 01 OF 02
DRAWN BY	DESIGNED BY	CHECKED BY
S.SARKAR	-	S.SADHU
		B.KONER



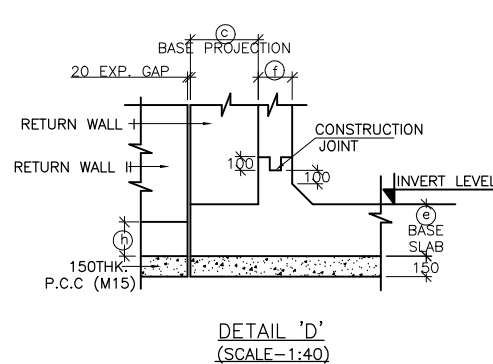
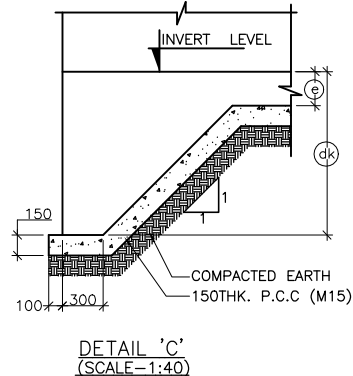
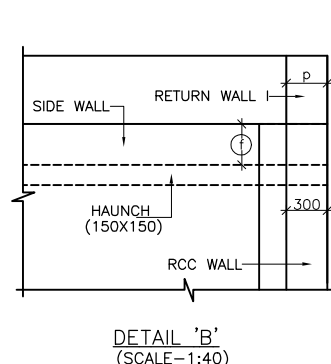
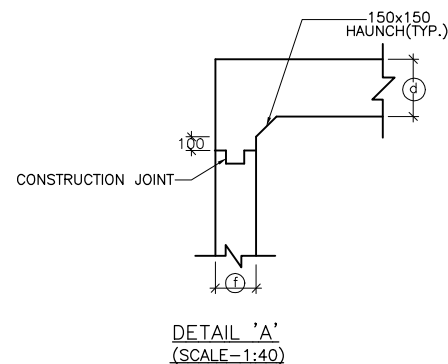
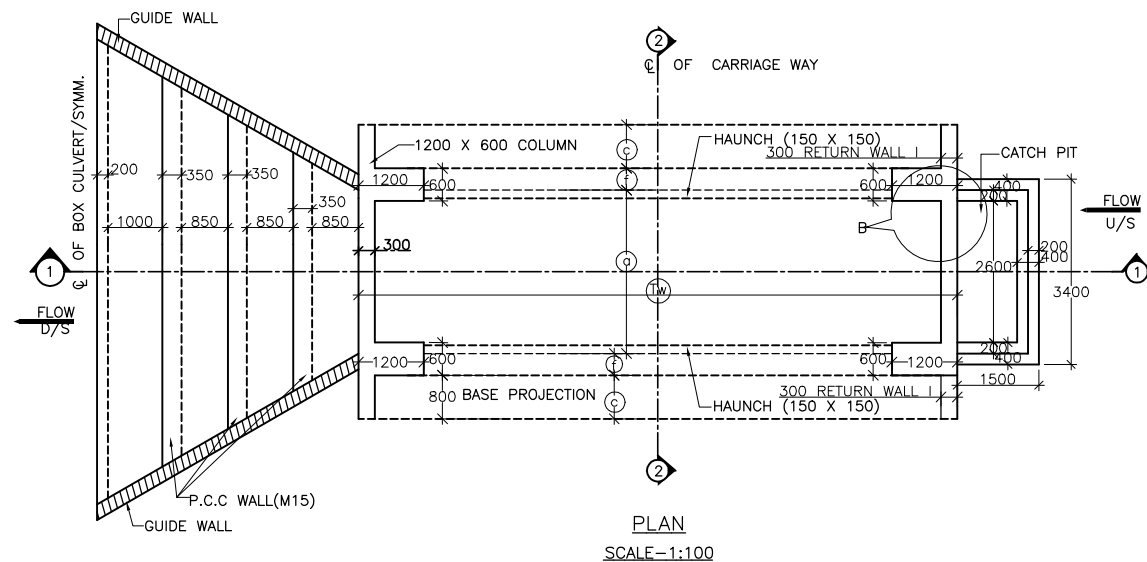
SL. No.	Design Chainage (Km)	Str. No.	Size Span x Height (M X M)	Earth Cushion Height (m)	Total Width (TW)	Carriageway (CW)	Finished Road Level (M)	Proposed Invert Level	Founding Level	Top Slab Thickness
1	120.395	121/2	2.0 X 3.0	1.3	11	10	1365.445	1360.850	1360.550	0.307
2	121.705	122/4	3.0 X 3.0	6.1	11	10	1327.880	1318.374	1317.924	0.410
3	123.048	124/2	2.0 X 2.0	1.2	11	10	1278.947	1275.462	1275.162	0.275
4	123.100	124/5	2.0 X 2.0	2.3	11	10	1276.987	1272.456	1272.156	0.275

- NOTES :**
- ALL DIMENSIONS ARE IN MM. UNLESS OTHERWISE MENTIONED.
 - GRADE OF CONCRETE :
BOX CELL STRUCTURE = M30
CURTAIN WALL = M20
LEVELLING COURSE (P.C.C.) = M15
RETURN WALL = M30
RCC WALL & KERB = M25
 - GRADE OF STEEL Fe 500 AS PER I.S.-1786.
 - CLASS 70R TRACKED PRODUCING WORST EFFECT ARE CONSIDERED FOR DESIGN.
 - PROPERTIES OF BACKFILL SOIL $\gamma = 1.8 \text{ t/m}^3$, $\phi = 30^\circ$.
 - 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.
 - SOFT AND LOOSE PATCHES IN THE BEARING AREA ARE TO BE REPLACED BY COMPACTED GRANULAR FILLS WITH LAYERS NOT EXCEEDING 300mm.
 - EARTH BELLOW BOX SHALL BE WELL COMPACTED TO ACHIEVE MINIMUM 15 t/m^2 BEARING CAPACITY.
 - SLOPE ON DECK SLAB WILL VARY AS PER ROAD SLOPE IN DIFFERENT CHAINAGES.
 - THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CET/4046/NHIDCL/NH-129A/P-D/DDPR/PKG-1/BC/MISC

SCALE: AS SHOWN					CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building, 3rd Floor, 4, Parliament Street, New Delhi - 110001					TITLE: GENERAL ARRANGEMENT OF SINGLE CELL R.C.C. BOX CULVERT WITH CATCHPIT & STEPPED PROTECTION WITH EARTH CUSHION (NORMAL CAMBER)					CONSULTANT: CE TESTING COMPANY PVT. LTD. 124-A, N.S.C. Bose Road, Kolkata - 700092					DWG NO :- CET/4046/NHIDCL/NH-129A/P-D/FDPR/PEREN-TOWN/BC/NC/EC/S-C/GA				
DATE: MARCH, 2019					PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF PEREN-DIMAPUR SECTION ON NH 129A(NAGALAND) ON ENGINEERING, PROCUREMENT AND CONSTRUCTION MODE IN THE STATE OF MANIPUR (PACKAGE:-NHIDCL/DDPR/SN-DMP-PC/MANIPUR/2016)					SUBMISSION TYPE: DRAFT DETAILED PROJECT REPORT					REVISION MKD. - R0					SHEET NO. - 01 OF 01				
REVISIONS					PACKAGE:-I					DRAWN BY: S.SARKAR					DESIGNED BY: -					CHECKED BY: S.SADHU				
MKD.					DATE					DESCRIPTION					ISSUED BY: B.KONER									



SECTION 4-4
(SHOWING RETURN WALL 1)
SCALE-1:100



SL. No.	Design Chainage (Km)	Str. No.	Size Span x Height (M X M)	Earth Cushion Height (m)	Total Width (TW)	Carriageway (CW)	Finished Road Level (M)	Proposed Invert Level	Founding Level	Top Slab Thickness
1	121.347	122/2	2.0 X 2.0	1.7	11	10	1349.398	1344.748	1344.448	0.275
2	122.230	123/1	2.0 X 2.0	2.2	11	10	1302.160	1297.325	1297.025	0.275
3	122.380	123/2	2.0 X 2.0	2.1	11	10	1298.386	1293.363	1293.063	0.275
4	122.618	123/3	2.0 X 2.0	0.8	11	10	1292.395	1288.624	1288.324	0.275
5	123.010	124/1	2.0 X 2.0	1.4	11	10	1280.304	1275.897	1275.597	0.275

NOTES :

- ALL DIMENSIONS ARE IN MM. UNLESS OTHERWISE MENTIONED.
- GRADE OF CONCRETE :
BOX CELL STRUCTURE = M30
CURTAIN WALL-I = M20
LEVELLING COURSE (P.C.C.) = M15
RETURN WALL-I = M30
RCC WALL & KERB = M25
- GRADE OF STEEL Fe 500 AS PER I.S.-1786.
- CLASS 70R TRACKED PRODUCING WORST EFFECT ARE CONSIDERED FOR DESIGN.
- PROPERTIES OF BACKFILL SOIL $\gamma = 1.8 \text{ t/m}^3$, $\phi = 30^\circ$.
- 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.
- SOFT AND LOOSE PATCHES IN THE BEARING AREA ARE TO BE REPLACED BY COMPACTED GRANULAR FILLS WITH LAYERS NOT EXCEEDING 300mm.
- EARTH BELOW BOX SHALL BE WELL COMPACTED TO ACHIEVE MINIMUM 15 t/m^2 BEARING CAPACITY.
- SLOPE ON DECK SLAB WILL VARY AS PER ROAD SLOPE IN DIFFERENT CHAINAGES.
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CET/4046/NHIDCL/NH-129A/P-D/DPDR/PKG-I/BC/MISC

BOX CELL DESIGNATION No/ab/Ec	1/22/EC
a	2000
b	2000
c	600
e	300
f	250
g	250
p	300
dk	1200

MKD.	DATE	DESCRIPTION	CHKD.	APPRD.

SCALE: AS SHOWN
DATE: MARCH, 2019



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

PROJECT:
CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANE OF PEREN-DIMAPUR SECTION ON NH 129A(NAGALAND) ON ENGINEERING, PROCUREMENT AND CONSTRUCTION MODE IN THE STATE OF MANIPUR (PACKAGE: NHIDCL/DDPR/SN-DMP-PC/MANIPUR/2016)

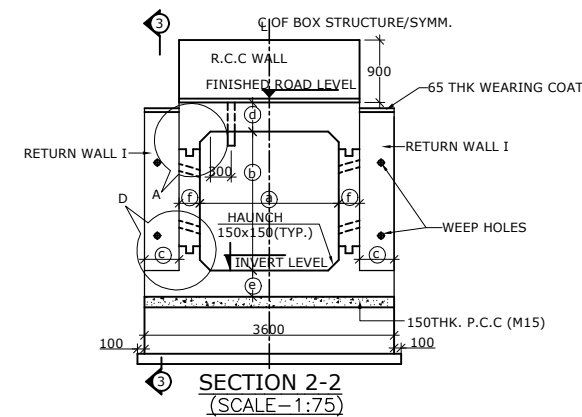
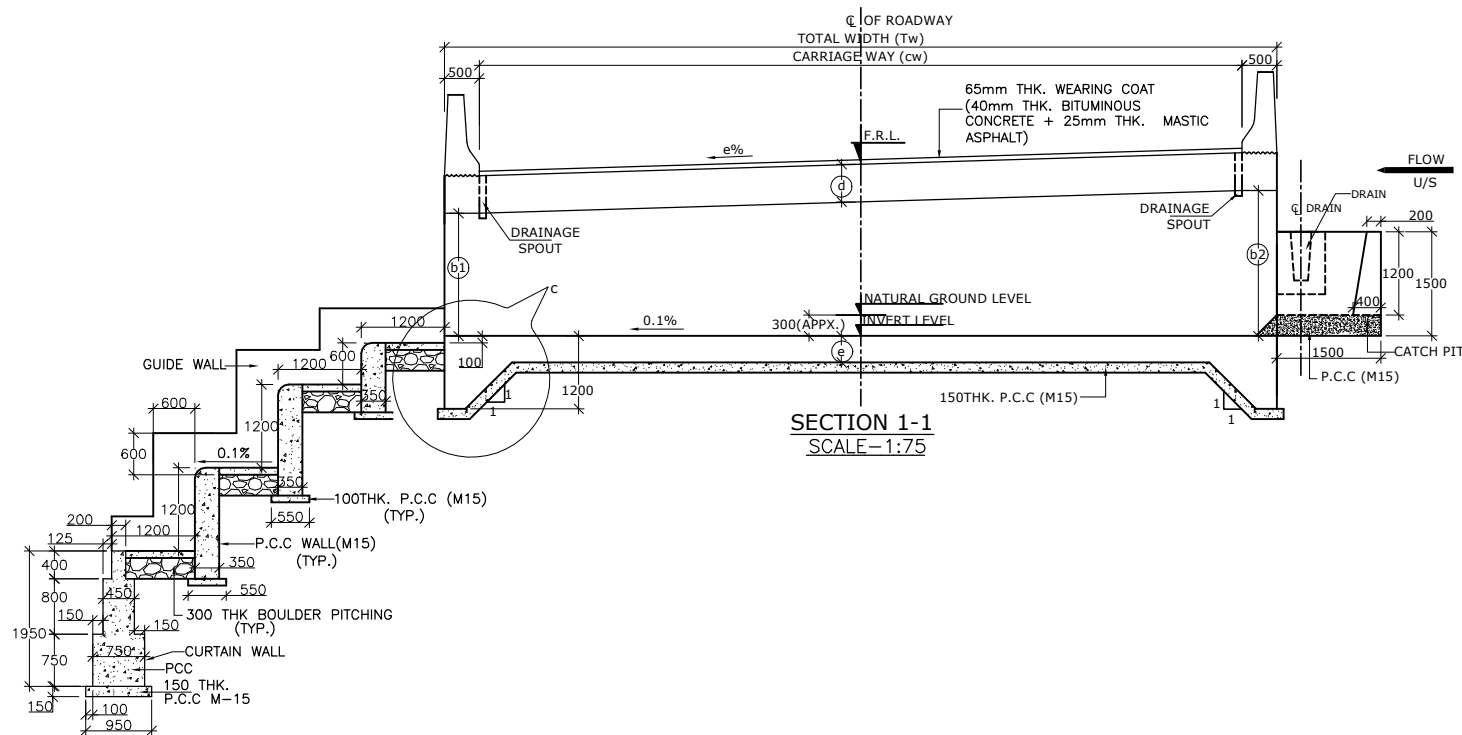
TITLE : GENERAL ARRANGEMENT OF SINGLE CELL R.C.C BOX CULVERT WITH CATCHPIT STEPPED PROTECTION & EARTH CUSHION (SUPER ELEVATION)

SUBMISSION TYPE :
DRAFT DETAILED PROJECT REPORT

PACKAGE:-I

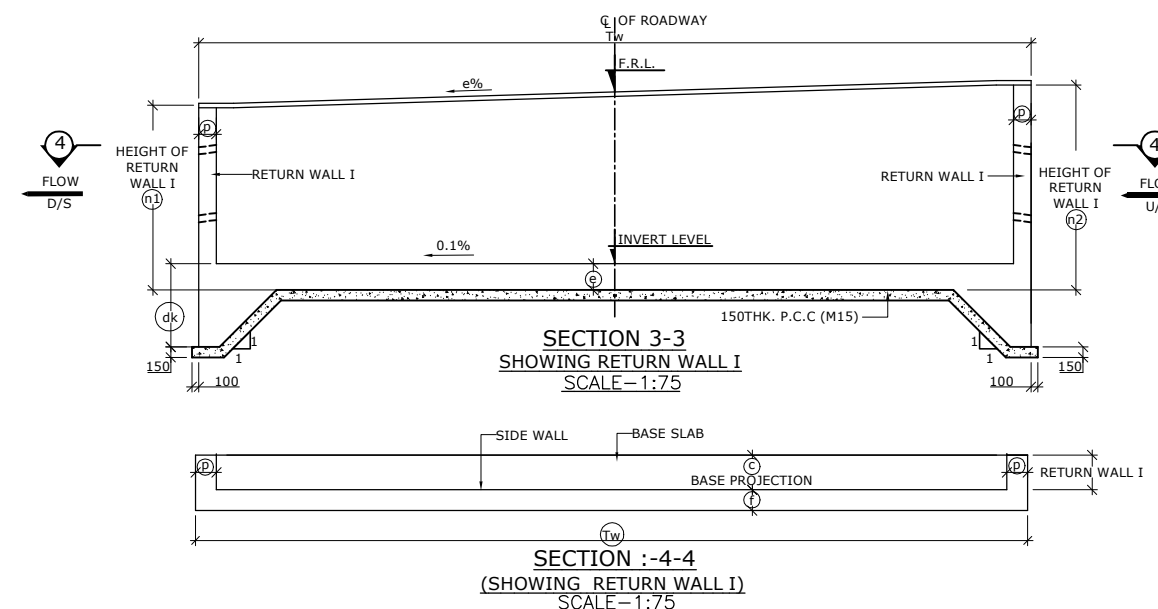
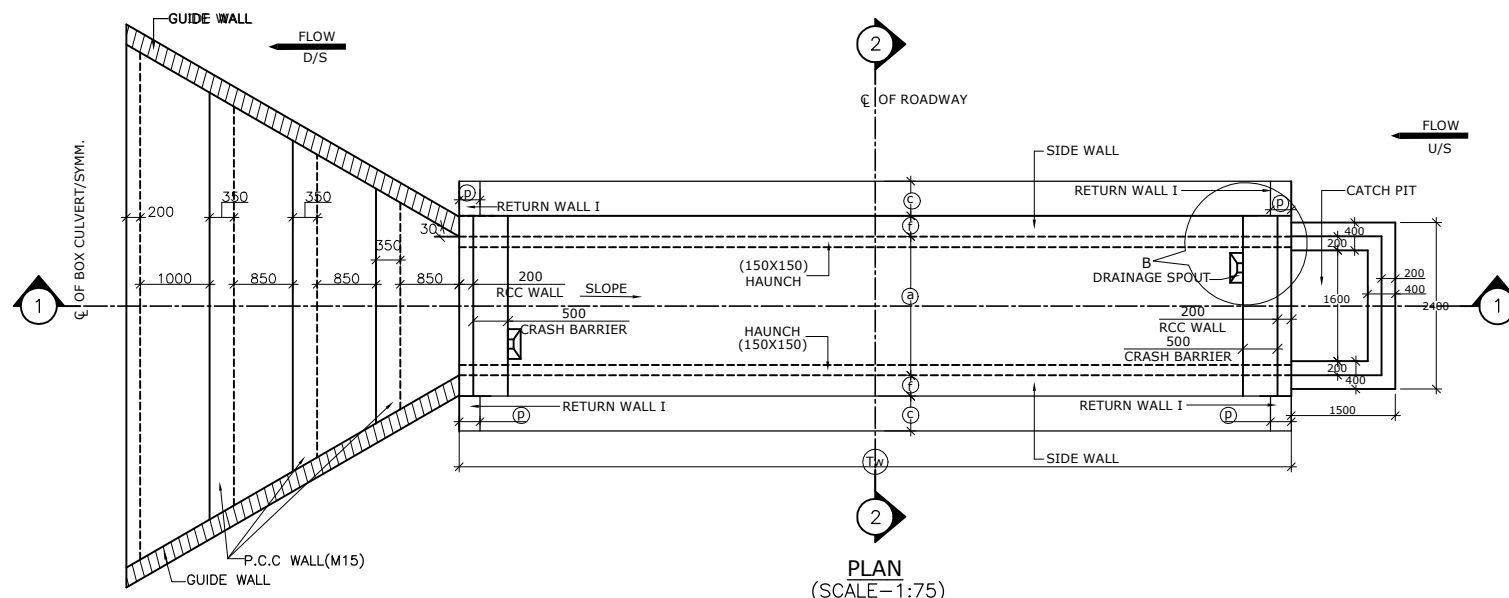
CONSULTANT :
CETEST CE TESTING COMPANY PVT. LTD.
Engineering Consultants
124-A, N.S.C. Bose Road
Kolkata - 700092

DWG NO :- CET/4046/NHIDCL/NH-129A/P-D/DPDR/PEREN TOWN/BC/SE/EC/S-C/GA	REVISION MKD. - R0	SHEET NO. - 01 OF 01
DRAWN BY S.SARKAR	DESIGNED BY	CHECKED BY S.SADHU
		ISSUED BY B.KONER

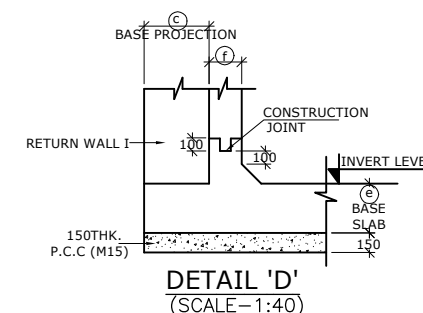
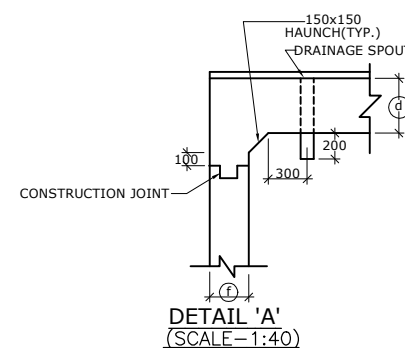
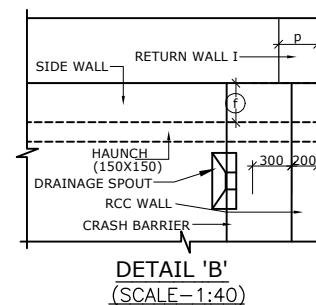
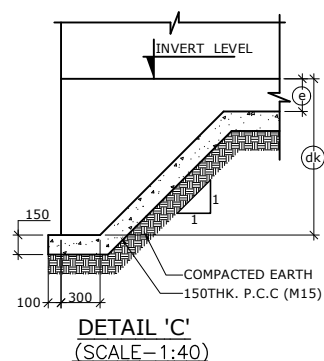


BOX CELL DESIGNATION No./ab/Ec	1/22/0	1/33/0
a	2000	3000
b1	2000	3000
b2	2700	3700
c	500	1300
d	350	420
e	380	420
f	300	420
p	300	300

SL. No.	Design Chainage (Km)	Str. No.	Size Span x Height (M X M)	Total Width (TW)	Carriageway (CW)	Finished Road Level (M)	Proposed Invert Level	Founding Level	Top Slab Thickness
1	121.645	122/3	3.0 X 3.0	11	10	1331.892	1327.707	1327.287	0.420
2	122.955	123/4	2.0 X 2.0	11	10	1281.717	1278.602	1278.222	0.350

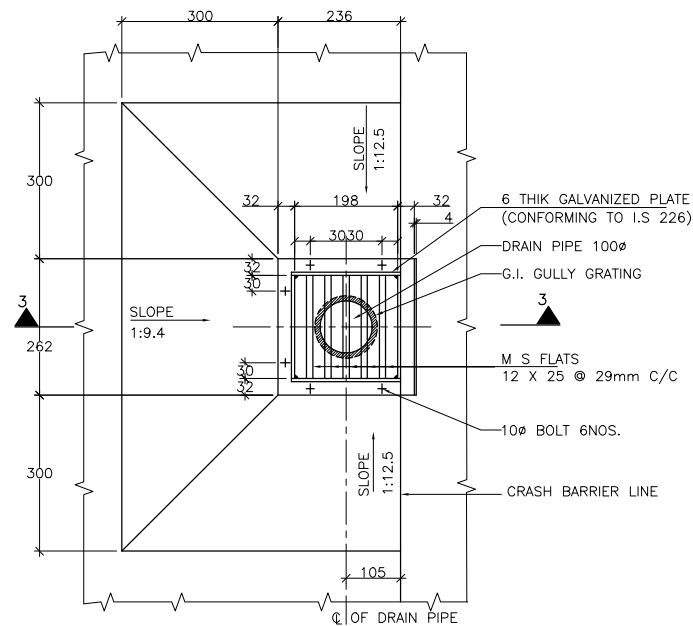


SECTION :-4-4 (SHOWING RETURN WALL I) SCALE-1:75

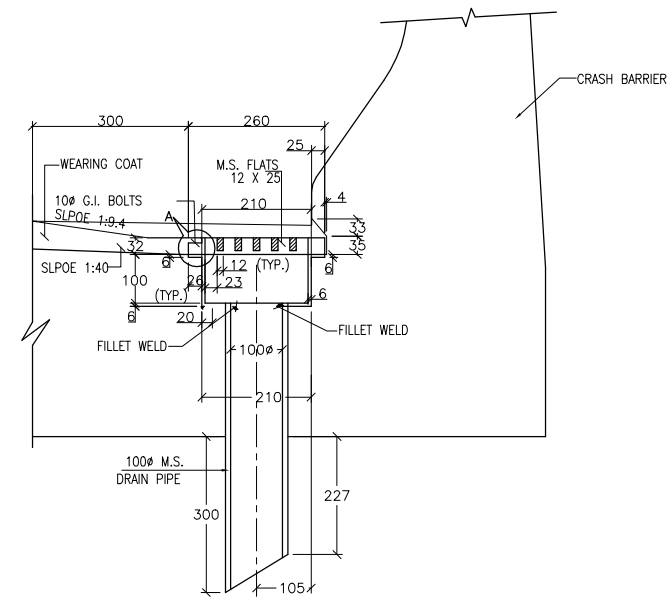


- NOTES :**
- ALL DIMENSIONS ARE IN MM. UNLESS OTHERWISE MENTIONED.
 - GRADE OF CONCRETE :
BOX CELL STRUCTURE = M30
CURTAIN WALL = M20
LEVELLING COURSE (P.C.C.) = M15
RETURN WALL-I = M30
RCC WALL & KERB = M25
 - GRADE OF STEEL Fe 500 AS PER I.S.-1786.
 - CLASS 70R TRACKED PRODUCING WORST EFFECT ARE CONSIDERED FOR DESIGN.
 - PROPERTIES OF BACKFILL SOIL $q=1.8t/m^3$, $\phi=30^\circ$.
 - 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.
 - SOFT AND LOOSE PATCHES IN THE BEARING AREA ARE TO BE REPLACED BY COMPACTED GRANULAR FILLS WITH LAYERS NOT EXCEEDING 300mm.
 - EARTH BELOW BOX SHALL BE WELL COMPACTED TO ACHIEVE BEARING CAPACITY.
 - SLOPE ON DECK SLAB WILL VARY AS PER ROAD SLOPE IN DIFFERENT CHAINAGES.
 - 'DK' IS DEPTH OF KEY AT BASE SLAB
FOR BASE SLAB THICKNESS
UPTO 900mm
GREATER THAN 900 mm
VALUE OF 'DK'
1200 mm
e+300 mm
e = BASE SLAB THICKNESS
 - THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CET/4046/NHIDCL/NH-129A/P-D/DDPR/PKG-I/BC/MISC (SHEET NO.-01)

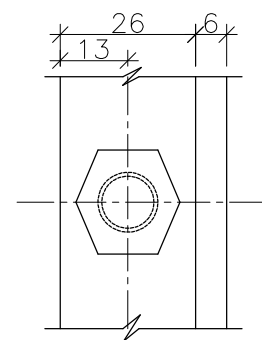
SCALE: AS SHOWN					CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building, 3rd Floor, 4, Parliament Street, New Delhi - 110001					TITLE: GENERAL ARRANGEMENT OF SINGLE CELL R.C.C. BOX CULVERT WITH CATCHPIT & STEPPED PROTECTION (SUPER ELEVATION)					CONSULTANT : CETEST Engineering Consultants 124-A, N.S.C. Bose Road, Kolkata - 700092					DWG NO :- CET/4046/NHIDCL/NH-129A/P-D/FDPR/PEREN TOWN/BC/SE/S-C/GA				
PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF PEREN-DIMAPUR SECTION ON NH 129A(NAGALAND) ON ENGINEERING, PROCUREMENT AND CONSTRUCTION MODE IN THE STATE OF MANIPUR (PACKAGE:-NHIDCL/DDPR/SN-DMP-PC/MANIPUR/2016)					SUBMISSION TYPE : DRAFT DETAILED PROJECT REPORT					PACKAGE-I					REVISION MKD. - R0					SHEET NO. - 01 OF 01				
DATE: MARCH, 2019					DRAWN BY: S.SARKAR					DESIGNED BY: -					CHECKED BY: S.SADHU					ISSUED BY: B.KONER				
REVISIONS																								
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.																				



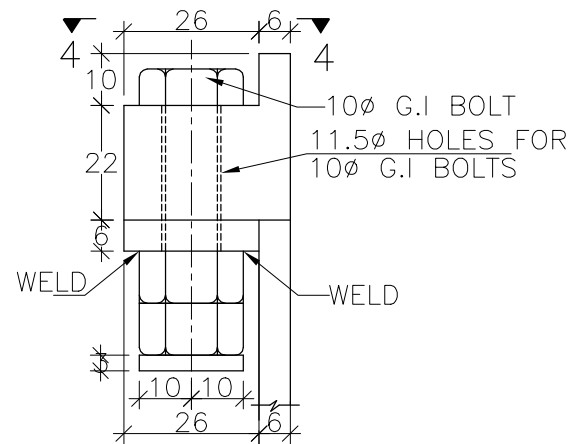
PLAN
DETAIL OF DRAINAGE
SPOUT AND COLLECTION PIT
SCALE- 1:10



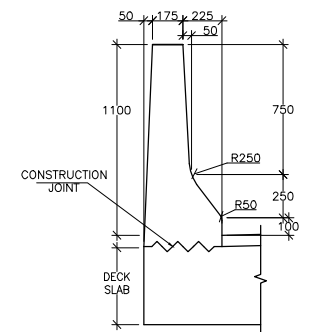
SECTION 3-3
SCALE- 1:10



PLAN AT 4-4
SCALE- 1:2



DETAIL - A
SCALE- 1:2



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

NOTES :

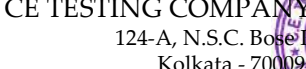
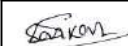
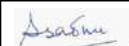
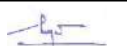
1. ALL DIMENSIONS ARE IN mm. UNLESS OTHERWISE NOTED.

NOTES OF DRAINAGE SPOUT

- ONLY FIGURED DIMENSIONS ARE TO BE FOLLOWED.
- ALL STEEL WORK SHALL BE AS PER IS - 2062.
- 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.
- THE REINFORCEMENT OF TOP SLAB OF SHALL BE SUITABLY MODIFIED TO ACCOMMODATE THE DRAINAGE SPOUT.
- THE DRAINAGE SPOUT SHALL BE GALVANIZED AFTER WELDING THE PLATES & FLATS.

REFERENCE DRAWINGS :

- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL RELEVANT GA DRAWINGS.

					SCALE: AS SHOWN		CLIENT: NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. PTI Building, 3rd Floor, 4, Parliament Street, New Delhi - 110001	TITLE : DETAILS OF DRAINAGE SPOUT AND CRASH BARRIER	CONSULTANT :  CE TESTING COMPANY PVT. LTD. 124-A, N.S.C. Bose Road Kolkata - 700092 	DWG NO :- CET/4046/NHIDCL/NH-129A/P-D/FDPR/PEREN TOWN/BC/MISC							
					DATE: MARCH, 2019	PROJECT: CONSULTANCY SERVICES FOR CARRYING OUT FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES IN RESPECT OF 2 LANING OF PEREN-DIMAPUR SECTION ON NH 129A (NAGALAND) ON ENGINEERING, PROCUREMENT AND CONSTRUCTION MODE IN THE STATE OF MANIPUR (PACKAGE:-NHIDCL/DDPR/SN-DMP-PC/MANIPUR/2016)		SUBMISSION TYPE : DRAFT DETAILED PROJECT REPORT		REVISION MKD. - R0		SHEET NO. - 01 OF 01					
MKD.	DATE	DESCRIPTION	CHKD.	APPRD.													
REVISIONS					PACKAGE-I					DRAWN BY  S.SARKAR		DESIGNED BY -		CHECKED BY  S.SADHU		ISSUED BY  B.KONER	