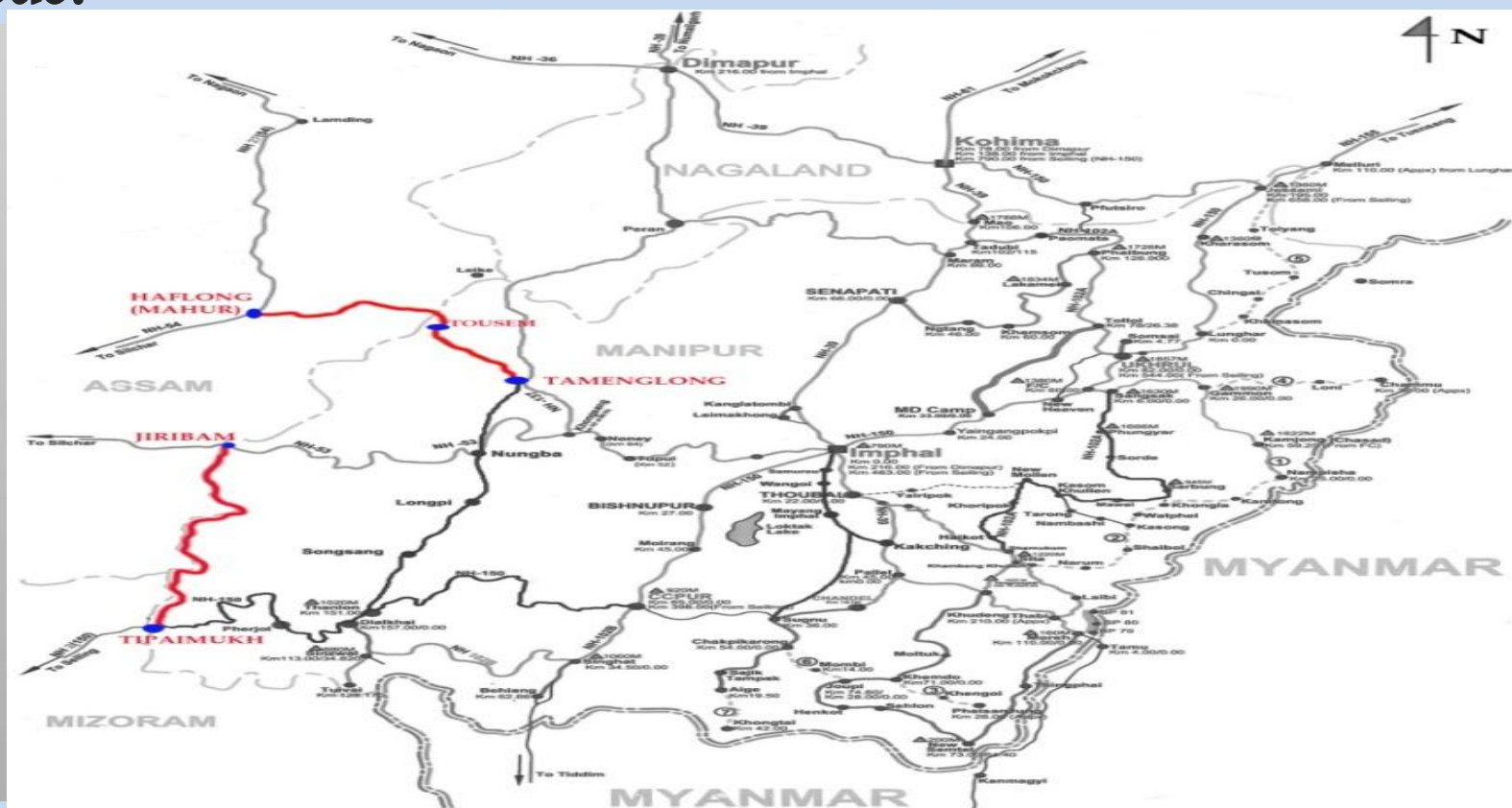


# NATIONAL HIGHWAY INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED

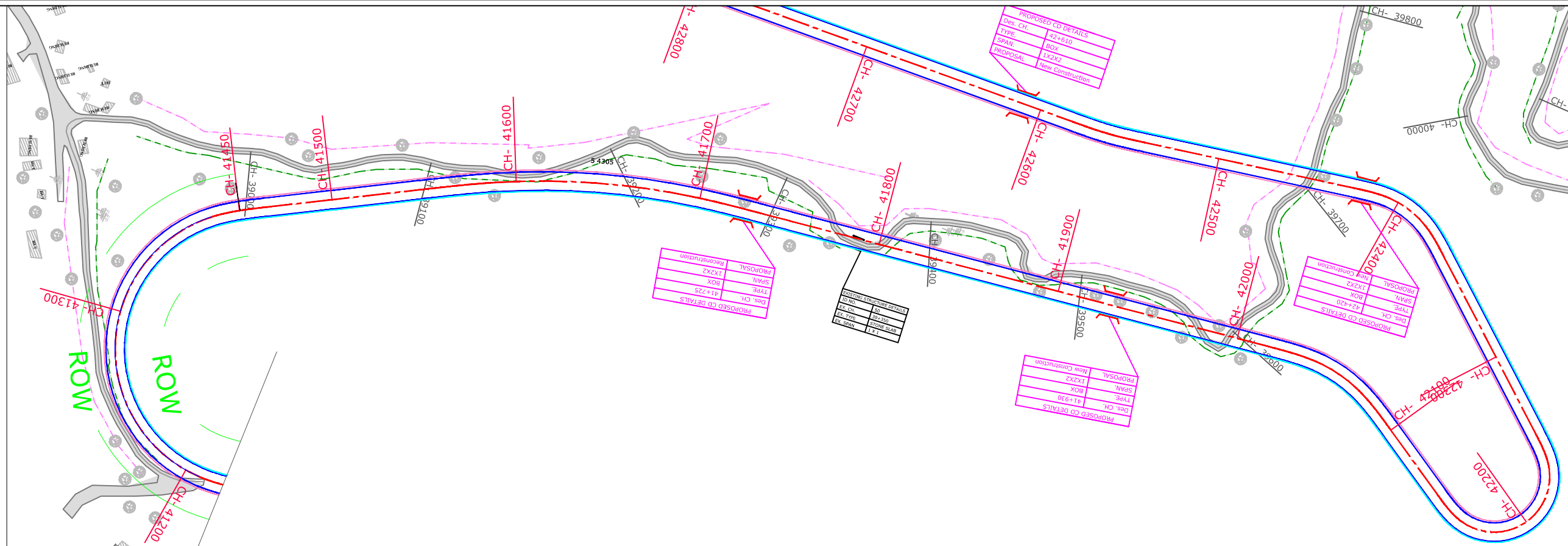
Consultancy Services for preparation of Feasibility Study and Detailed Project Report for Two Lane with Paved Shoulders of Tamenglong-Tousem-Liasang-Haflong Road in the State of Manipur and Assam on EPC mode.



## DRAFT DETAILED PROJECT REPORT VOL-VII DRAWING VOLUME PKG-5 - AZURAM- MAKRU RIVER SECTION (FROM KM 41+450 TO KM 55+400) LENGTH-13.95KM

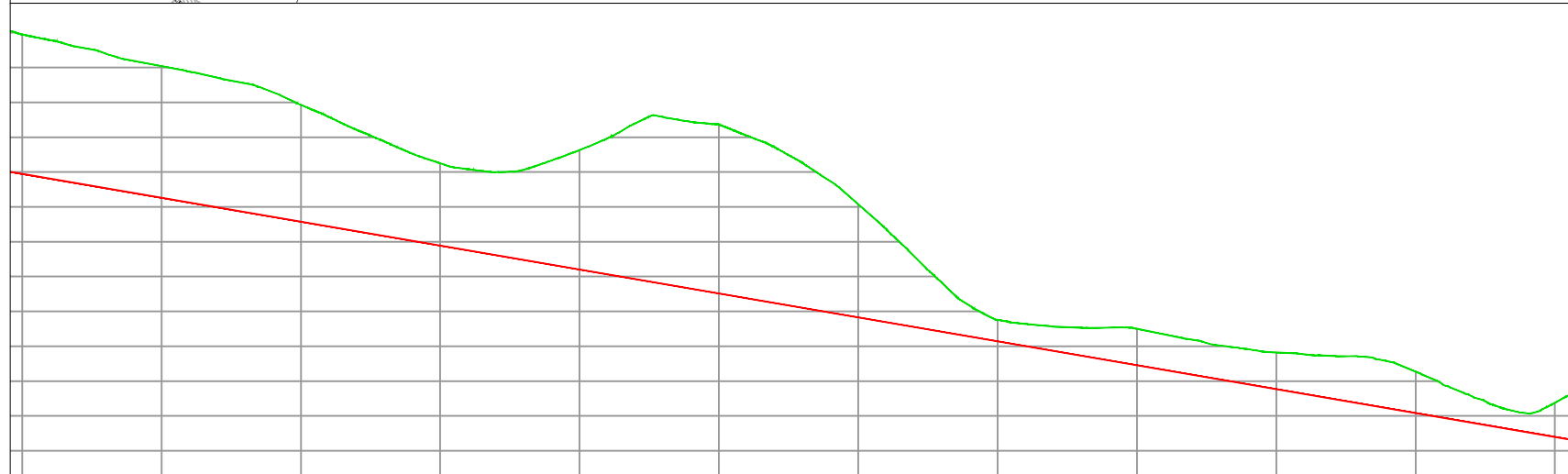
# PLAN & PROFILE

PLAN



Legend	
Building	
Shop Gate	
Hut	
Water Tank	
Well	
Temple	
TBM.	
Electric Pole	
Telephone Pole	
Ht line 11& 33 kva	
Nala	
Drain	
Sign Board	
RYL SP	
Tree Gamla	
Bambu	
Culvert	
Bridge	
Pond	
Handpump	
Tranformer	
Traverse Station	
Ground Level	
OFC	
Welcome Board	
River Canal	
Boundry Wall	
Existing BT Center Line	
Existing Road Carriageway	
Proposed Center Line	
Proposed CARRIGE WAY	
Proposed Shoulder	
Hms	
Kms RB	
IL BL	
TOWER	
PETROL PUMP	
Public Tap	
Proposed ROW	

PROFILE



NEW ROAD LEVEL	899.735 899.049 898.362 897.676 896.990 896.304 895.617 894.931 894.245 893.558 892.872 892.186 891.500 890.813 890.127 889.441 888.754 888.068 887.382 886.696 886.009 885.323 884.637 883.950 883.264 882.578 881.892 881.205 880.519 879.833 879.146 878.460 877.774 877.088 876.401 875.715 875.029 874.342 873.656 872.970 872.284 871.597 870.911 870.225 869.538 868.852 868.166 867.480 866.793 866.107 865.421 864.734 864.048 863.362 862.675 861.989
EXISTING GENERAL GROUND	919.765 918.941 917.966 916.992 915.948 914.883 913.792 912.605 911.409 910.187 908.942 907.679 906.407 905.128 903.843 902.552 901.256 900.005 898.754 887.506 886.258 885.009 883.761 882.513 881.265 880.017 878.769 877.521 876.273 875.025 873.777 872.529 871.281 870.033 868.785 867.537 866.289 865.041 863.793 862.545 861.297 860.049
Level Difference	-20.029 -19.892 -19.603 -19.316 -18.958 -18.883 -18.792 -18.605 -18.496 -17.892 -16.769 -15.731 -14.570 -13.562 -12.513 -11.815 -11.651 -11.928 -12.957 -14.983 -17.153 -19.520 -22.362 -23.938 -23.945 -24.225 -23.336 -22.356 -20.784 -18.839 -16.233 -13.364 -10.176 -7.031 -4.407 -3.078 -3.164 -3.501 -3.985 -4.703 -5.242 -5.090 -5.017 -4.876 -5.035 -5.254 -6.681 -6.129 -6.739 -6.732 -5.935 -4.698 -3.803 -2.908 -2.698 -4.905
Vertical Geometry	
Horizontal Geometry	
SUPERELEVATION	
CHAINAGE	41450.000 41460.000 41470.000 41480.000 41490.000 41500.000 41510.000 41520.000 41530.000 41540.000 41550.000 41560.000 41570.000 41580.000 41590.000 41600.000 41610.000 41620.000 41630.000 41640.000 41650.000 41660.000 41670.000 41680.000 41690.000 41700.000 41710.000 41720.000 41730.000 41740.000 41750.000 41760.000 41770.000 41780.000 41790.000 41800.000 41810.000 41820.000 41830.000 41840.000 41850.000 41860.000 41870.000 41880.000 41890.000 41900.000 41910.000 41920.000 41930.000 41940.000 41950.000 41960.000 41970.000 41980.000 41990.000 42000.000

CONSULTANTS :-

L.N. MALVIYA INFRA PROJECTS PVT. LTD.

T-10, III FLOOR, CITY CENTER, PRESS COMPLEX, PLOT NO.-1,  
M.P. NAGAR, ZONE-1, BHOPAL (M.P.)

Tel./Fax : 0755-4295421,  
Mob.: 09826452711, 09977004686  
E-mail : [lninfra@lninfra.com](mailto:lninfra@lninfra.com)

CLIENT :-

NATIONAL HIGHWAYS INFRASTRUCTURE  
DEVELOPMENT CORPORATION LIMITED (NHIDCL)

DRG. NO. :

1

DESIGNED BY.

APPROVED BY.

PROJECT TITLE :-

Consultancy Services for Preparation of Feasibility Study  
and Detailed Project Report For Two lane With Paved  
Shoulders of Tamenglong Haflong Road In The State of  
Manipur on EPC Mode.

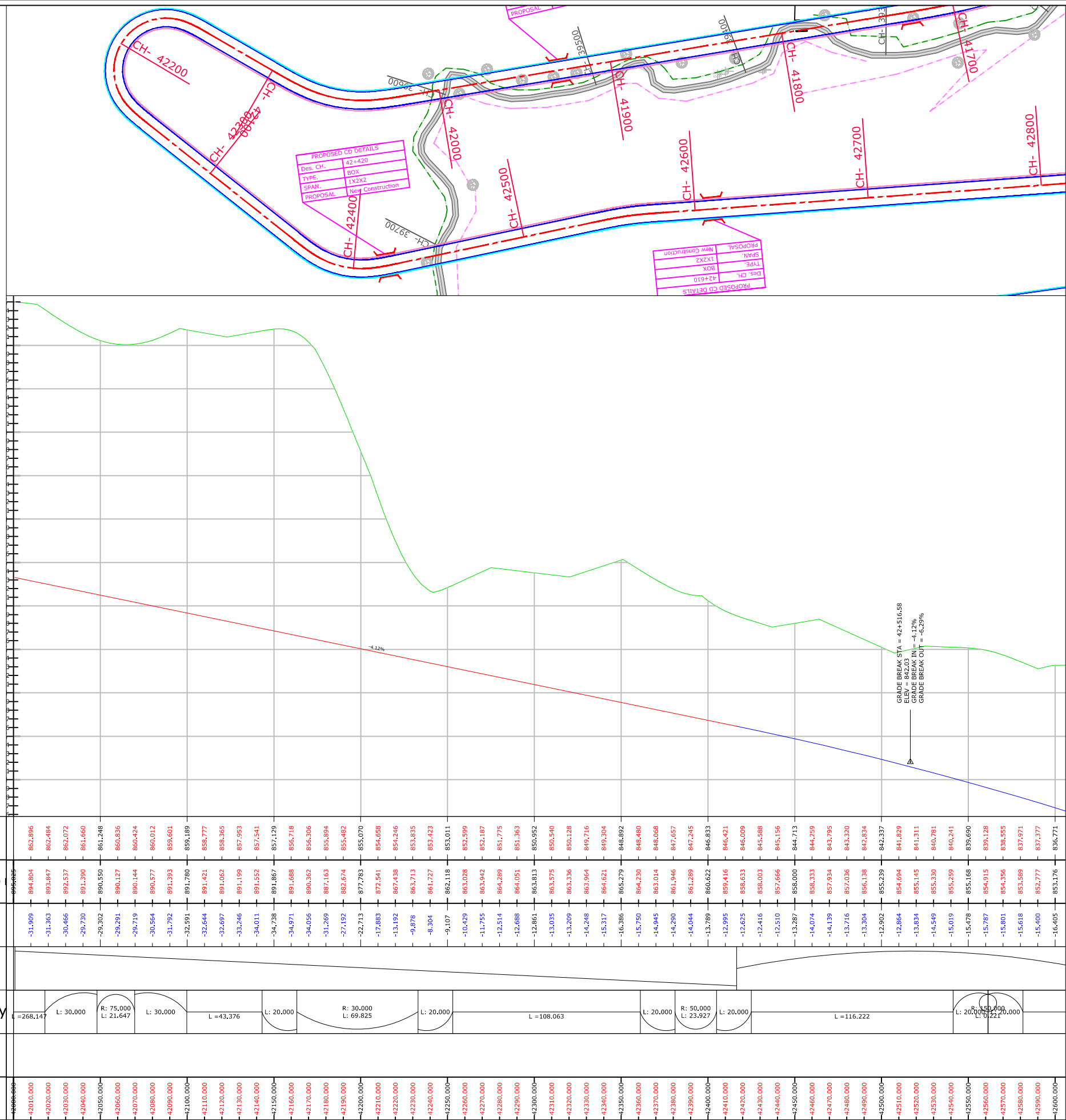
PLAN & PROFILE:-

FROM DES. CH 41+450 - 42+000

AZURAM-MAKRU RIVER SECTION  
(PACKAGE-5)

PLAN

PROFILE



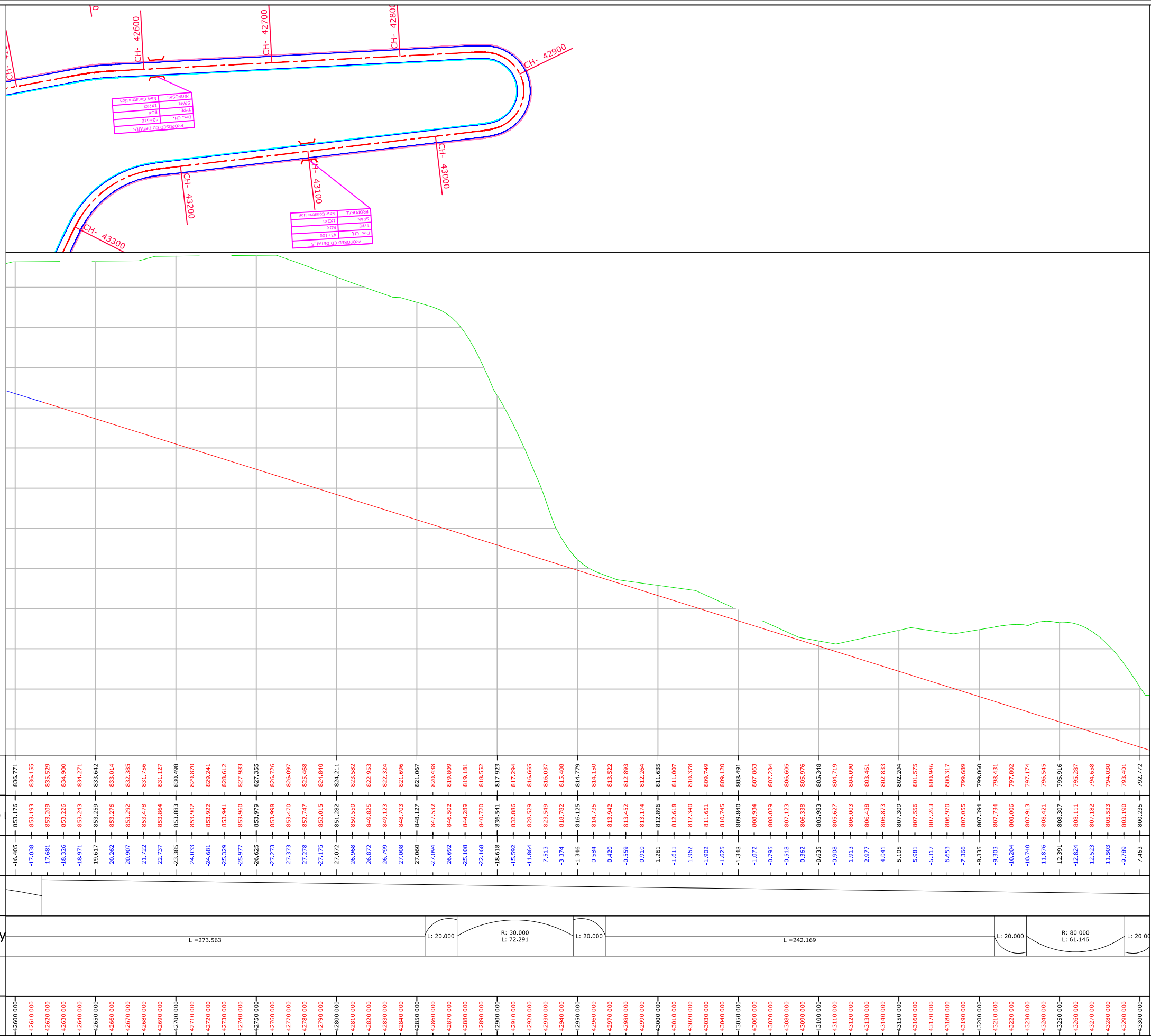
Legend	
Building	
Shop Gate	
Hut	
Water Tank Well	
Temple	
TBM.	
Electric Pole	
Telephone Pole	
Ht line 11& 33 kva	
Nala	
Drain	
Sign Board	
RYL SP	
Tree Gamla	
Bambu	
Culvert	
Bridge	
Pond	
Handpump	
Tranfarmer	
Traverse Station	
Ground Level	
OFC	
Welcome Board	
River Canal	
Boundry Wall	
Existing BT Center Line	
Existing Road Carriageway	
Proposed Center Line	
Proposed CARRIGE WAY	
Proposed Shoulder	
Hms	
Kms RB	
IL BL	
TOWER	
PETROL PUMP	
Public Tap	
Proposed ROW	

-- CONSULTANTS --		-- CLIENT --		DRG. NO. :	DESIGNED BY.	APPROVED BY.	-- PROJECT TITLE --		-- PLAN & PROFILE --	
L.N. MALVIYA INFRA PROJECTS PVT. LTD.		NATIONAL HIGHWAYS INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (NHIDCL)		2			Consultancy Services for Preparation of Feasibility Study and Detailed Project Report For Two lane With Paved Shoulders of Tamenglong Haflong Road In The State of Manipur on EPC Mode.		FROM DES. CH 42+000 - 42+600	
T-10, III FLOOR, CITY CENTER, PRESS COMPLEX, PLOT NO.-1, M.P. NAGAR, ZONE-I, BHOPAL (M.P.)		Tel./Fax : 0755-4295421, Mob.: 09826452711, 09977004686 E-mail : lninfra@lninfra.com							AZURAM-MAKRU RIVER SECTION (PACKAGE-5)	



PLAN

PROFILE

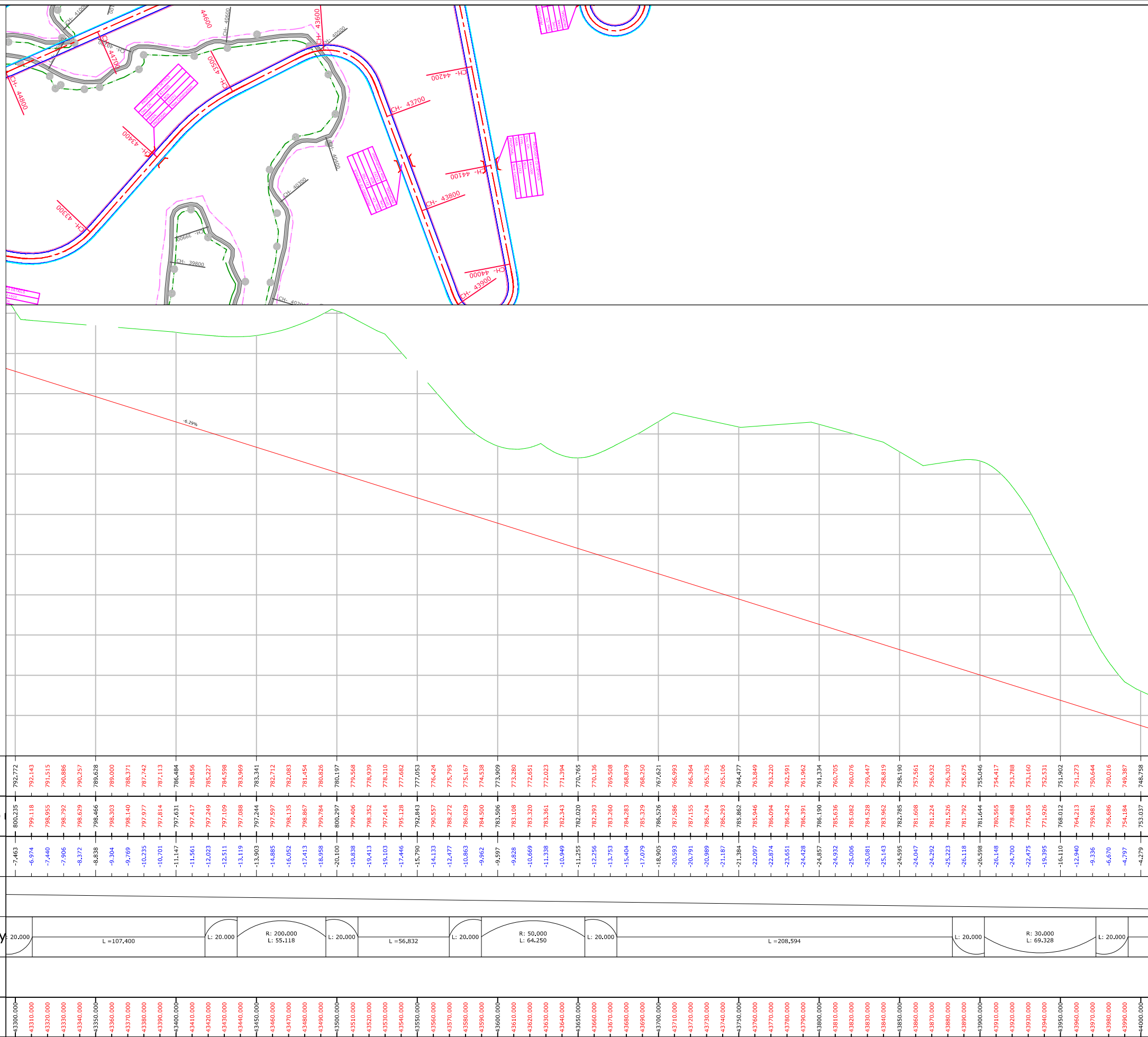


Legend	
Building	
Shop Gate	
Hut	
Water Tank Well	
Temple	
TBM.	
Electric Pole	
Telephone Pole	
Ht line 11& 33 kva	
Nala	
Drain	
Sign Board RYL SP	
Tree Gamla Bambu	
Culvert Bridge	
Pond	
Handpump	
Tranformer	
Traverse Station	
Ground Level	
OFC	
Welcome Board	
River Canal	
Boundry Wall	
Existing BT Center Line	
Existing Road Carriageway	
Proposed Center Line	
Proposed CARRIGE WAY	
Proposed Shoulder	
Hms	
Kms RB	
IL BL	
TOWER	
PETROL PUMP	
Public Tap	
Proposed ROW	

-- CONSULTANTS --		-- CLIENT --		DRG. NO. :	DESIGNED BY.	APPROVED BY.	-- PROJECT TITLE --		-- PLAN & PROFILE --	
L.N. MALVIYA INFRA PROJECTS PVT. LTD. T-10, III FLOOR, CITY CENTER, PRESS COMPLEX, PLOT NO.-1, M.P. NAGAR, ZONE-1, BHOPAL (M.P.)  Tel./Fax : 0755-4295421, Mob.: 09826452711, 099777004686 E-mail : lninfraprojects@gmail.com		NATIONAL HIGHWAYS INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (NHIDCL) 		3			Consultancy Services for Preparation of Feasibility Study and Detailed Project Report For Two lane With Paved Shoulders of Tamenglong Haflong Road In The State of Manipur on EPC Mode.		FROM DES. CH 42+600 - 43+300 AZURAM- MAKRU RIVER SECTION (PACKAGE-5)	

PLAN

PROFILE



Legend	
Building	
Shop Gate	
Hut	
Water Tank	
Well	
Temple	
TBM.	
Electric Pole	
Telephone Pole	
Ht line 11& 33 kva	
Nala	
Drain	
Sign Board	
RYL SP	
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Boundry Wall	
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Proposed CARRIGE WAY	
Proposed Shoulder	
Hms	
Kms RB	
IL BL	
TOWER	
PETROL PUMP	
Public Tap	
Proposed ROW	

CONSULTANTS

L.N. MALVIYA INFRA PROJECTS PVT. LTD.

T-10, III FLOOR, CITY CENTER, PRESS COMPLEX, PLOT NO.-1, M.P. NAGAR, ZONE-I, BHOPAL (M.P.)

Tel./Fax : 0755-4295421, Mob.: 09826452711, 09977004686 E-mail : lninfraprojects@gmail.com

CLIENT

NATIONAL HIGHWAYS INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (NHIDCL)

DRG. NO. :

4

DESIGNED BY.

APPROVED BY.

PROJECT TITLE

CONSULTANCY SERVICES FOR PREPARATION OF FEASIBILITY STUDY AND DETAILED PROJECT REPORT FOR TWO LANE WITH PAVED SHOULDERS OF TAMENGLONG HAFLONG ROAD IN THE STATE OF MANIPUR ON EPC MODE.

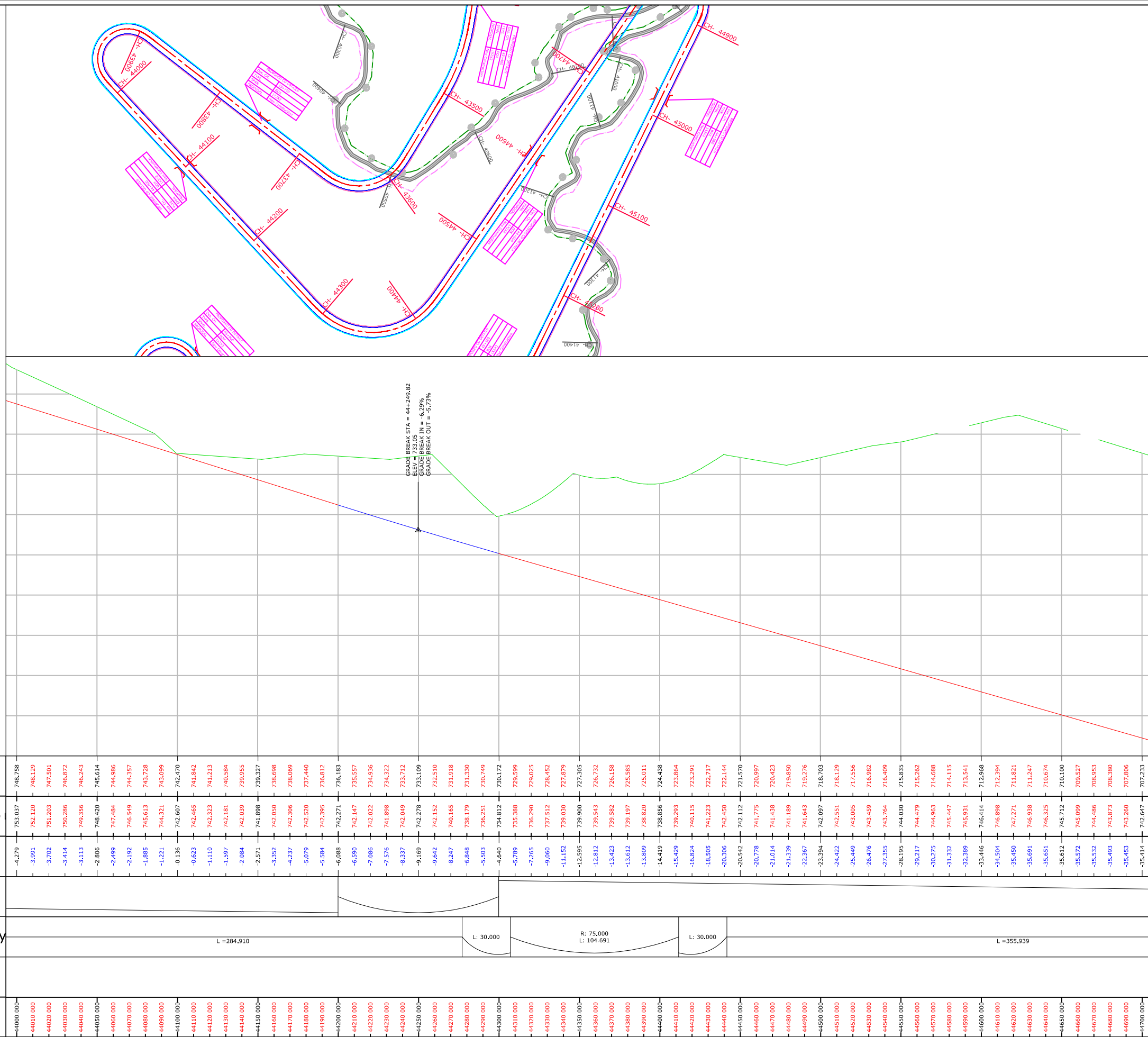
PLAN & PROFILE

FROM DES. CH 43+300 - 44+000

AZURAM-MAKRU RIVER SECTION (PACKAGE-5)

PLAN

PROFILE

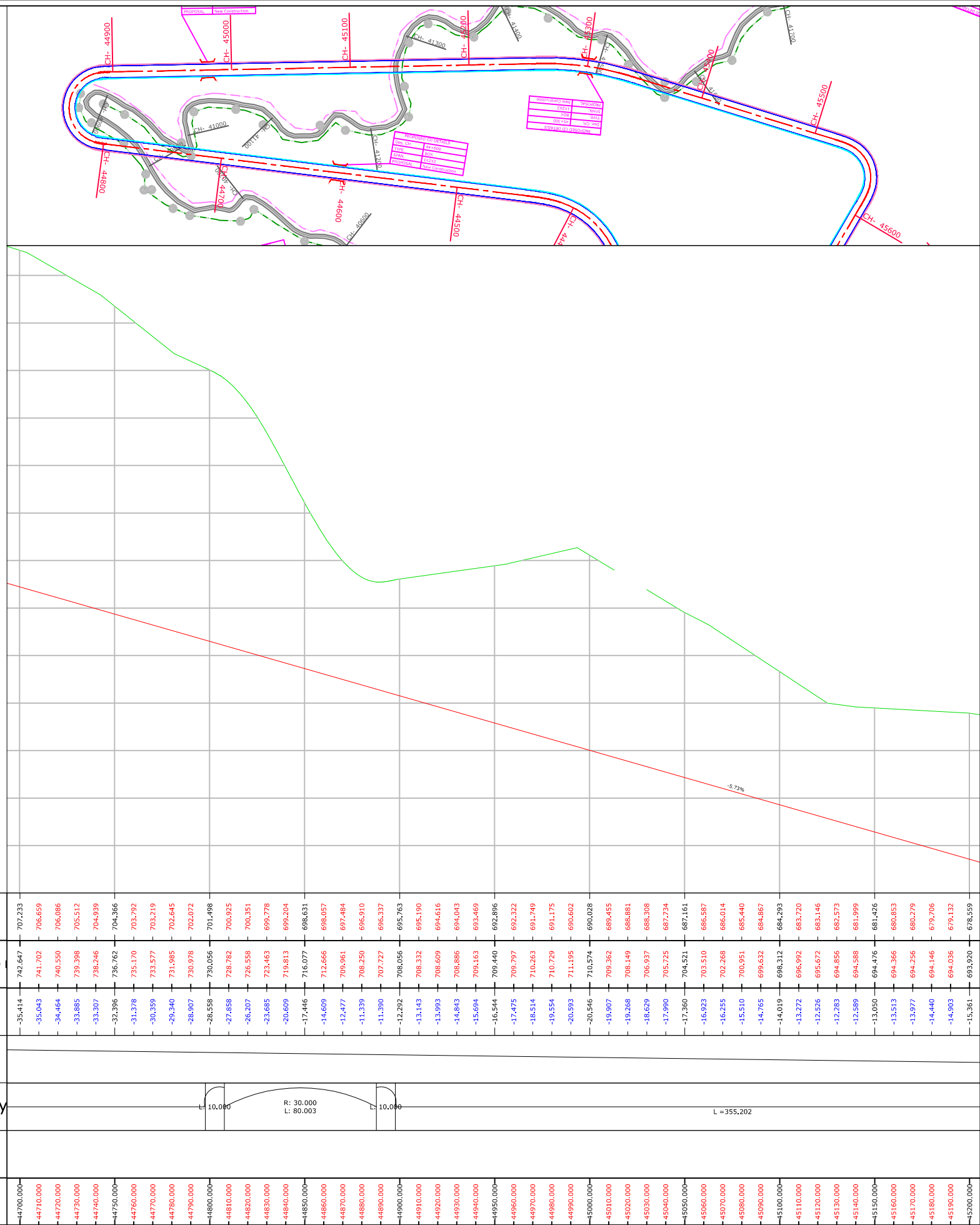


Legend	
Building	
Shop Gate	
Hut	
Water Tank	
Well	
Temple	
TBM.	
Electric Pole	
Telephone Pole	
Ht line 11& 33 kva	
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Proposed Shoulder	
Hms	
Kms RB	
IL BL	
TOWER	
PETROL PUMP	
Public Tap	
Proposed ROW	



-- CONSULTANTS --		-- CLIENT --		DRG. NO. :	DESIGNED BY.	APPROVED BY.	-- PROJECT TITLE --		--PLAN & PROFILE--	
L.N. MALVIYA INFRA PROJECTS PVT. LTD. T-10, III FLOOR, CITY CENTER, PRESS COMPLEX, PLOT NO.-1, M.P. NAGAR, ZONE-I, BHOPAL (M.P.)  Tel./Fax : 0755-4295421, Mob.: 09826452711, 09977004686 E-mail : lninfraprojects@gmail.com		NATIONAL HIGHWAYS INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (NHIDCL) 		5			Consultancy Services for Preparation of Feasibility Study and Detailed Project Report For Two lane With Paved Shoulders of Tamenglong Haflong Road In The State of Manipur on EPC Mode.		FROM DES. CH 44+000 - 44+700 AZURAM- MAKRU RIVER SECTION (PACKAGE-5)	

PLAN

PROFILE



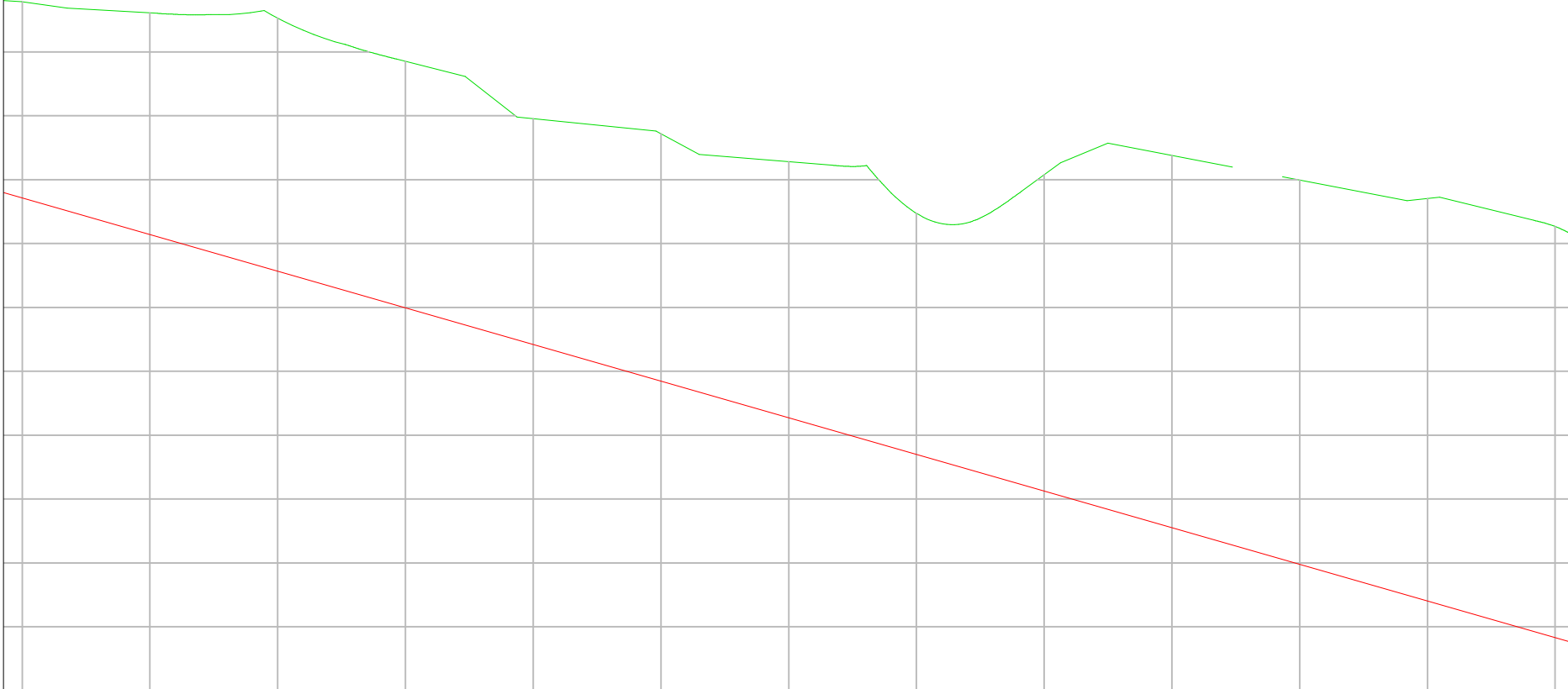
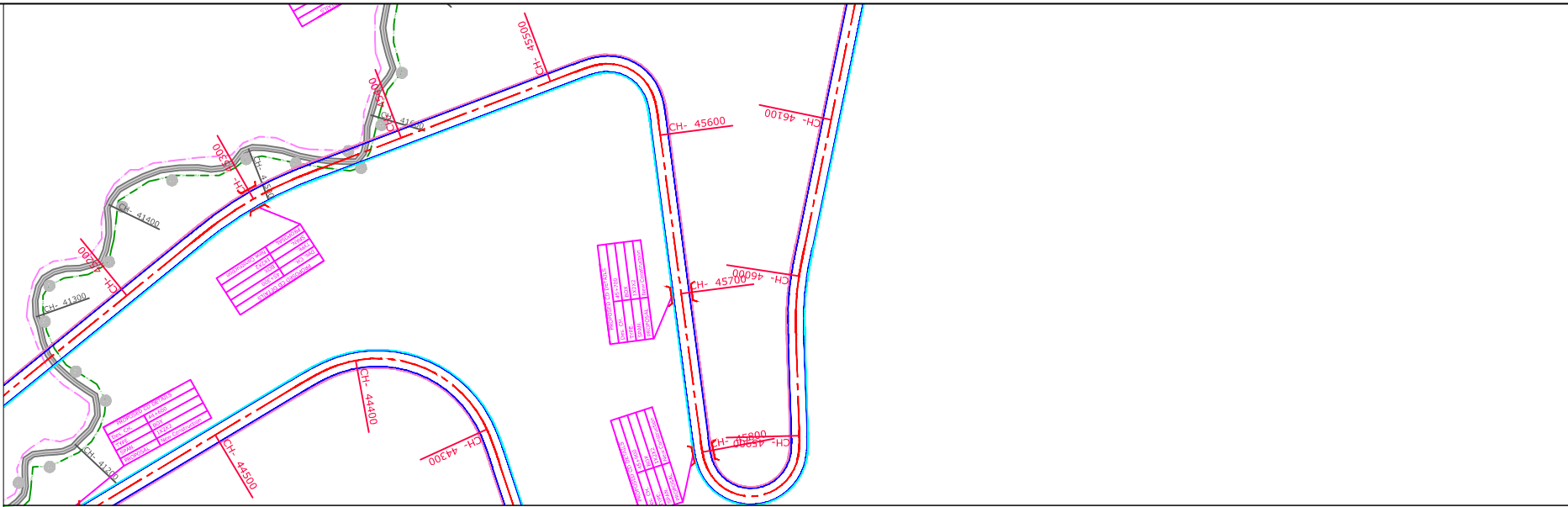
Legend	
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-- CONSULTANTS --		-- CLIENT --		DRG. NO. :	DESIGNED BY.	APPROVED BY.	-- PROJECT TITLE --	--PLAN & PROFILE--	
<b>L.N. MALVIYA INFRA PROJECTS PVT. LTD.</b> T-10, III FLOOR, CITY CENTER, PRESS COMPLEX, PLOT NO.-1, M.P. NAGAR, ZONE-I, BHOPAL (M.P.)  Tel./Fax : 0755-4295421, Mob.: 09826452711, 09977004686 E-mail : <a href="mailto:lninfra@projects@gmail.com">lninfra@projects@gmail.com</a>		<b>NATIONAL HIGHWAYS INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (NHIDCL)</b>  NATIONAL HIGHWAYS INFRASTRUCTURE - BUILDING THE NATION		6			Consultancy Services for Preparation of Feasibility Study and Detailed Project Report For Two lane With Paved Shoulders of Tamenglong Haflong Road In The State of Manipur on EPC Mode.	FROM DES. CH 44+700 - 45+200	
								<b>AZURAM-MAKRU RIVER SECTION (PACKAGE-5)</b>	



PLAN

PROFILE



NEW ROAD LEVEL	678.559	693.920	693.637	677.985	677.412	693.394	677.412	693.279	676.838	693.163	676.265	693.047	675.691	692.938	675.118	692.899	674.544	692.925	673.971	693.085	673.397	692.646	672.824	691.684	672.250	690.947	671.677	690.342	671.103	689.768	670.530	689.261	669.956	688.758	669.383	688.255	668.809	687.043	666.236	685.467	667.662	684.783	667.089	684.563	666.515	684.364	665.942	684.164	665.368	683.964	664.795	683.590	664.221	683.512	663.648	683.074	663.074	682.501	662.501	681.937	661.937	681.402	661.354	681.237	660.780	681.075	660.207	680.868	660.633	680.681	660.088	680.533	679.897	659.060	679.370	658.487	678.554	657.913	677.631	657.340	676.543	656.766	675.918	656.193	674.764	655.619	673.619	655.046	672.445	654.472	671.261	653.899	670.075	653.325	668.890	652.752	667.594	652.178	666.304	651.605	664.811	651.031	663.306	650.458	661.804	649.884	660.297	649.311	658.787	648.737	657.280	648.184	655.773	647.590	654.266	647.017	652.759	646.443	651.252	645.870	649.743	645.296	648.216	644.723	647.188	644.149																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
EXISTING GENERAL GROUND	693.920	693.637	693.394	677.985	677.412	693.279	676.838	693.163	676.265	693.047	675.691	692.938	675.118	692.899	674.544	692.925	673.971	693.085	673.397	692.646	672.824	691.684	672.250	690.947	671.677	690.342	671.103	689.768	670.530	689.261	669.956	688.758	669.383	688.255	668.809	687.043	666.236	685.467	667.662	684.783	667.089	684.563	666.515	684.364	665.942	684.164	665.368	683.964	664.795	683.590	664.221	683.512	663.648	683.074	663.074	682.501	662.501	681.937	661.937	681.402	661.354	681.237	660.780	681.075	660.207	680.868	660.633	680.681	660.088	680.533	679.897	659.060	679.370	658.487	678.554	657.913	677.631	657.340	676.543	656.766	675.918	656.193	674.764	655.619	673.619	655.046	672.445	654.472	671.261	653.899	670.075	653.325	668.890	652.752	667.594	652.178	666.304	651.605	664.811	651.031	663.306	650.458	661.804	649.884	660.297	649.311	658.787	648.737	657.280	648.184	655.773	647.590	654.266	647.017	652.759	646.443	651.252	645.870	649.743	645.296	648.216	644.723	647.188	644.149																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
Level Difference	-15.361	-15.652	-15.983	-16.441	-16.898	-17.356	-17.820	-18.355	-18.954	-19.688	-19.822	-19.434	-19.271	-19.239	-19.239	-19.205	-19.375	-19.445	-18.807	-17.805	-17.674	-18.048	-18.422	-18.796	-19.169	-19.369	-18.864	-18.821	-19.230	-19.639	-20.048	-20.457	-20.868	-21.455	-19.937	-18.883	-18.641	-19.292	-20.777	-22.726	-24.764	-26.574	-27.973	-28.762	-28.950	-29.138	-29.326	-29.514	-29.702	-29.890	-30.078	-30.266	-30.454	-30.642	-30.830	-31.018	-31.206	-31.394	-31.582	-31.770	-31.958	-32.146	-32.334	-32.522	-32.710	-32.898	-33.086	-33.274	-33.462	-33.650	-33.838	-34.026	-34.214	-34.402	-34.590	-34.778	-34.966	-35.154	-35.342	-35.530	-35.718	-35.906	-36.094	-36.282	-36.470	-36.658	-36.846	-37.034	-37.222	-37.410	-37.598	-37.786	-37.974	-38.162	-38.350	-38.538	-38.726	-38.914	-39.102	-39.290	-39.478	-39.666	-39.854	-40.042	-40.230	-40.418	-40.606	-40.794	-40.982	-41.170	-41.358	-41.546	-41.734	-41.922	-42.110	-42.298	-42.486	-42.674	-42.862	-43.050	-43.238	-43.426	-43.614	-43.802	-43.990	-44.178	-44.366	-44.554	-44.742	-44.930	-45.118	-45.306	-45.494	-45.682	-45.870	-46.058	-46.246	-46.434	-46.622	-46.810	-47.000	-47.188	-47.376	-47.564	-47.752	-47.940	-48.128	-48.316	-48.504	-48.692	-48.880	-49.068	-49.256	-49.444	-49.632	-49.820	-50.008	-50.196	-50.384	-50.572	-50.760	-50.948	-51.136	-51.324	-51.512	-51.700	-51.888	-52.076	-52.264	-52.452	-52.640	-52.828	-53.016	-53.204	-53.392	-53.580	-53.768	-53.956	-54.144	-54.332	-54.520	-54.708	-54.896	-55.084	-55.272	-55.460	-55.648	-55.836	-56.024	-56.212	-56.400	-56.588	-56.776	-56.964	-57.152	-57.340	-57.528	-57.716	-57.904	-58.092	-58.280	-58.468	-58.656	-58.844	-59.032	-59.220	-59.408	-59.596	-59.784	-59.972	-60.160	-60.348	-60.536	-60.724	-60.912	-61.100	-61.288	-61.476	-61.664	-61.852	-62.040	-62.228	-62.416	-62.604	-62.792	-62.980	-63.168	-63.356	-63.544	-63.732	-63.920	-64.108	-64.296	-64.484	-64.672	-64.860	-65.048	-65.236	-65.424	-65.612	-65.800	-65.988	-66.176	-66.364	-66.552	-66.740	-66.928	-67.116	-67.304	-67.492	-67.680	-67.868	-68.056	-68.244	-68.432	-68.620	-68.808	-69.000	-69.188	-69.376	-69.564	-69.752	-69.940	-70.128	-70.316	-70.504	-70.692	-70.880	-71.068	-71.256	-71.444	-71.632	-71.820	-72.008	-72.196	-72.384	-72.572	-72.760	-72.948	-73.136	-73.324	-73.512	-73.700	-73.888	-74.076	-74.264	-74.452	-74.640	-74.828	-75.016	-75.204	-75.392	-75.580	-75.768	-75.956	-76.144	-76.332	-76.520	-76.708	-76.896	-77.084	-77.272	-77.460	-77.648	-77.836	-78.024	-78.212	-78.400	-78.588	-78.776	-78.964	-79.152	-79.340	-79.528	-79.716	-79.904	-80.092	-80.280	-80.468	-80.656	-80.844	-81.032	-81.220	-81.408	-81.596	-81.784	-81.972	-82.160	-82.348	-82.536	-82.724	-82.912	-83.100	-83.288	-83.476	-83.664	-83.852	-84.040	-84.228	-84.416	-84.604	-84.792	-84.980	-85.168	-85.356	-85.544	-85.732	-85.920	-86.108	-86.296	-86.484	-86.672	-86.860	-87.048	-87.236	-87.424	-87.612	-87.800	-87.988	-88.176	-88.364	-88.552	-88.740	-88.928	-89.116	-89.304	-89.492	-89.680	-89.868	-90.056	-90.244	-90.432	-90.620	-90.808	-90.996	-91.184	-91.372	-91.560	-91.748	-91.936	-92.124	-92.312	-92.500	-92.688	-92.876	-93.064	-93.252	-93.440	-93.628	-93.816	-94.004	-94.192	-94.380	-94.568	-94.756	-94.944	-95.132	-95.320	-95.508	-95.696	-95.884	-96.072	-96.260	-96.448	-96.636	-96.824	-97.012	-97.200	-97.388	-97.576	-97.764	-97.952	-98.140	-98.328	-98.516	-98.704	-98.892	-99.080	-99.268	-99.456	-99.644	-99.832	-100.020	-100.208	-100.396	-100.584	-100.772	-100.960	-101.148	-101.336	-101.524	-101.712	-101.900	-102.088	-102.276	-102.464	-102.652	-102.840	-103.028	-103.216	-103.404	-103.592	-103.780	-103.968	-104.156	-104.344	-104.532	-104.720	-104.908	-105.096	-105.284	-105.472	-105.660	-105.848	-106.036	-106.224	-106.412	-106.600	-106.788	-106.976	-107.164	-107.352	-107.540	-107.728	-107.916	-108.104	-108.292	-108.480	-108.668	-108.856	-109.044	-109.232	-109.420	-109.608	-109.796	-109.984	-110.172	-110.360	-110.548	-110.736	-110.924	-111.112	-111.300	-111.488	-111.676	-111.864	-112.052	-112.240	-112.428	-112.616	-112.804	-112.992	-113.180	-113.368	-113.556	-113.744	-113.932	-114.120	-114.308	-114.496	-114.684	-114.872	-115.060	-115.248	-115.436	-115.624	-115.812	-116.000	-116.188	-116.376	-116.564	-116.752	-116.940	-117.128	-117.316	-117.504	-117.692	-117.880	-118.068	-118.256	-118.444	-118.632	-118.820	-119.008	-119.196	-119.384	-119.572	-119.760	-119.948	-120.136	-120.324	-120.512	-120.700	-120.888	-121.076	-121.264	-121.452	-121.640	-121.828	-122.016	-122.204	-122.392	-122.580	-122.768	-122.956	-123.144	-123.332	-123.520	-123.708	-123.896	-124.084	-124.272	-124.460	-124.648	-124.836	-125.024	-125.212	-125.400	-125.588	-125.776	-125.964	-126.152	-126.340	-126.528	-126.716	-126.904	-127.092	-127.280	-127.468	-127.656	-127.844	-128.032	-128.220	-128.408	-128.596	-128.784	-128.972	-129.160	-129.348	-129.536	-129.724	-129.912	-130.100	-130.288	-130.476	-130.664	-130.852	-131.040	-131.228	-131.416	-131.604	-131.792	-131.980	-132.168	-132.356	-132.544	-132.732	-132.920	-133.108	-133.296	-133.484	-133.672	-133.860	-134.048	-134.236	-134.424	-134.612	-134.800	-134.988	-135.176	-135.364	-135.552	-135.740	-135.928	-136.116	-136.304	-136.492	-136.680	-136.868	-137.056	-137.244	-137.432	-137.620	-137.808	-138.000	-138.188	-138.376	-138.564	-138.752	-138.940	-139.128	-139.316	-139.504	-139.692	-139.880	-140.068	-140.256	-140.444	-140.632	-140.820	-141.008	-141.196	-141.384	-141.572	-141.760	-141.948	-142.136	-142.324	-142.512	-142.700	-142.888	-143.076	-143.264	-143.452	-143.640	-143.828	-144.016	-144.204	-144.392	-144.580	-144.768	-144.956	-145.144

PLAN

PROFILE



Level Datum=605

NEW ROAD LEVEL	644.149 643.576 643.002 642.429 641.855 641.282 640.708 640.132 639.553 638.973 638.390 637.805 637.218 636.628 636.037 635.443 634.847 634.249 633.648 633.045 632.440 631.833 631.224 630.612 630.003 629.399 628.794 628.188 627.583 626.978 626.373 625.768 625.163 624.558 623.953 623.348 622.743 622.138 621.533 620.928 620.323 620.117 619.499 618.881 618.264 617.646 617.028 616.410 615.793 615.175 614.557 613.940
EXISTING GENERAL GROUND	676.337 675.153 671.950 667.321 661.683 655.620 649.799 644.873 641.366 639.615 639.151 639.050 638.646 637.669 636.734 636.620 636.507 636.628 637.933 638.895 639.409 639.062 638.573 638.646 638.066 637.603 637.670 637.738 637.805 637.872 637.939 637.977 637.038 636.599 636.264 636.322 625.059 634.814 633.657 632.735 632.659 631.966 631.549 630.504 628.554 626.901 625.553 624.386 623.492 623.341 623.277
Level Difference	-32.188 -31.577 -28.947 -24.892 -19.828 -14.338 -9.091 -4.742 -1.813 -0.643 -0.761 -1.245 -1.428 -1.041 -0.697 -1.178 -1.660 -2.379 -4.285 -5.849 -6.968 -7.229 -7.349 -7.453 -7.605 -8.288 -8.972 -9.657 -9.947 -10.126 -10.305 -10.587 -11.263 -11.939 -12.614 -13.048 -13.279 -13.510 -13.452 -12.932 -12.542 -12.469 -12.768 -12.240 -10.908 -9.873 -9.142 -8.593 -8.317 -8.784 -9.337
Vertical Geometry	
Horizontal Geometry	R: 20,000 R: 30,000 L: 71.260 L: 20,000 L = 55.533 L: 20,000 R: 170,000 L: 20.159 L: 20,000 L = 163.731 L: 20,000 R: 125. L: 199.
SUPERLEVATION	
CHAINAGE	45800.000 45810.000 45820.000 45830.000 45840.000 45850.000 45860.000 45870.000 45880.000 45890.000 45900.000 45910.000 45920.000 45930.000 45940.000 45950.000 45960.000 45970.000 45980.000 45990.000 46000.000 46010.000 46020.000 46030.000 46040.000 46050.000 46060.000 46070.000 46080.000 46090.000 46100.000 46110.000 46120.000 46130.000 46140.000 46150.000 46160.000 46170.000 46180.000 46190.000 46200.000 46210.000 46220.000 46230.000 46240.000 46250.000 46260.000 46270.000 46280.000 46290.000 46300.000

Legend

Building	
Shop Gate	
Hut	
Water Tank Well	
Temple	
TBM.	
Electric Pole	
Telephone Pole	
Ht line 11& 33 kva	
Nala	
Drain	
Sign Board RYL SP	
Tree Gamla Bambu	
Culvert Bridge	
Pond	
Handpump	
Tranformer	
Traverse Station	
Ground Level	
OFC	
Welcome Board	
River Canal	
Boundry Wall	
Existing BT Center Line	
Existing Road Carriageway	
Proposed Center Line	
Proposed CARRIGE WAY	
Proposed Shoulder	
Hms	
Kms RB	
IL BL	
TOWER	
PETROL PUMP	
Public Tap	
Proposed ROW	

--: CONSULTANTS --:

L.N. MALVIYA INFRA PROJECTS PVT. LTD.

T-10, III FLOOR, CITY CENTER, PRESS COMPLEX, PLOT NO.-1,  
M.P. NAGAR, ZONE-I, BHOPAL (M.P.)



Tel./Fax : 0755-4295421,  
Mob.: 09826452711, 09977004686  
E-mail : lninfraprojects@gmail.com

--: CLIENT --:

NATIONAL HIGHWAYS INFRASTRUCTURE  
DEVELOPMENT CORPORATION LIMITED (NHIDCL)



8

DRG. NO. :

DESIGNED BY.

APPROVED BY.

--: PROJECT TITLE --:

Consultancy Services for Preparation of Feasibility Study  
and Detailed Project Report For Two lane With Paved  
Shoulders of Tamenglong Haflong Road In The State of  
Manipur on EPC Mode.

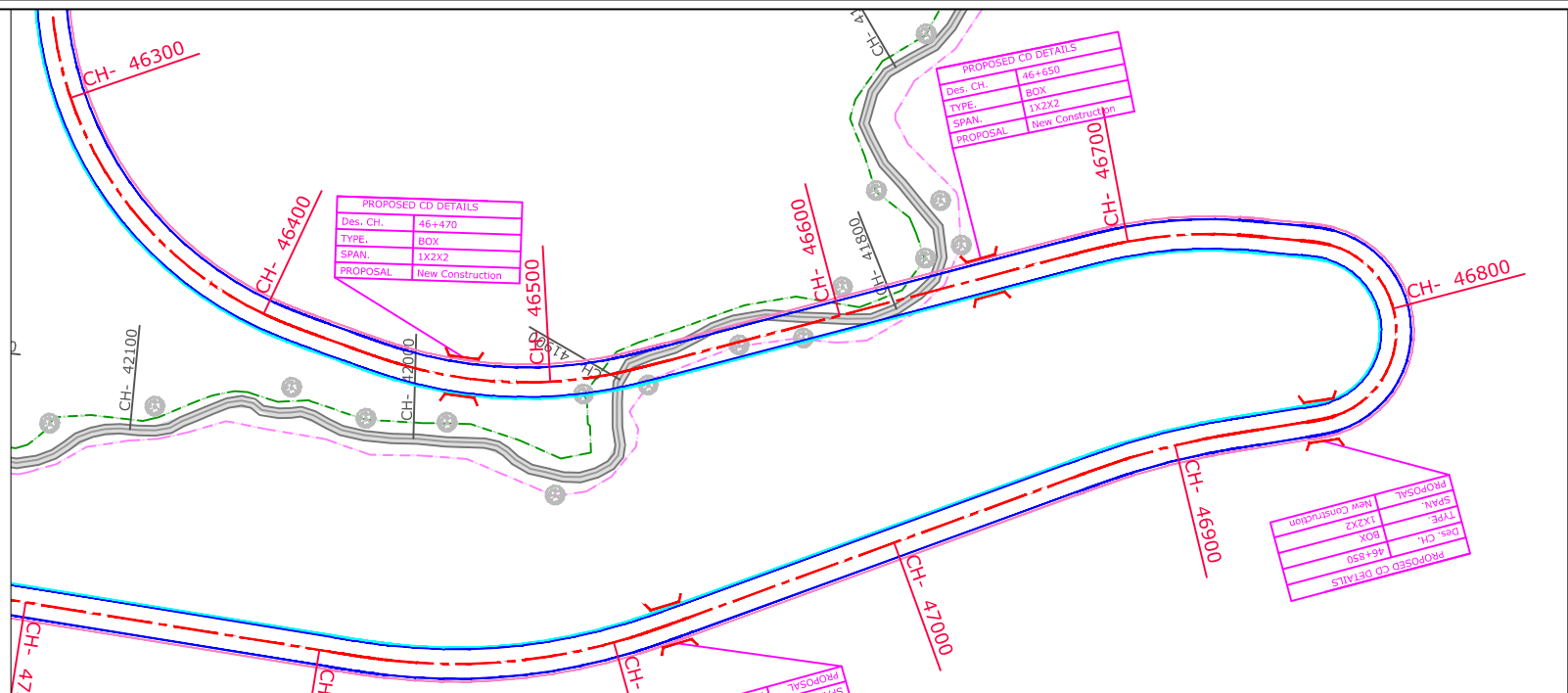
--:PLAN & PROFILE--:

FROM DES. CH 45+800 - 46+300

AZURAM- MAKRU RIVER SECTION  
(PACKAGE-5)

PLAN

PROFILE



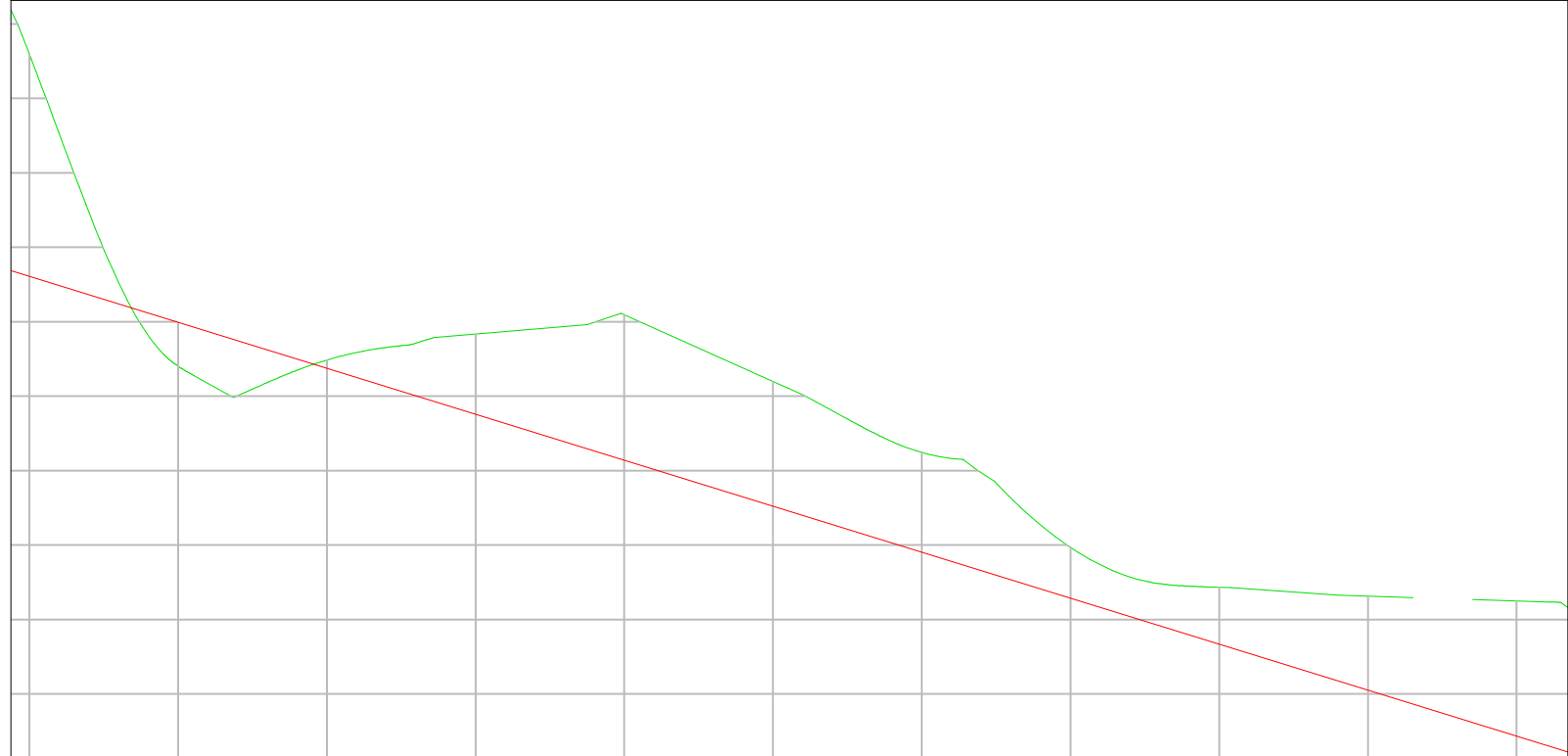
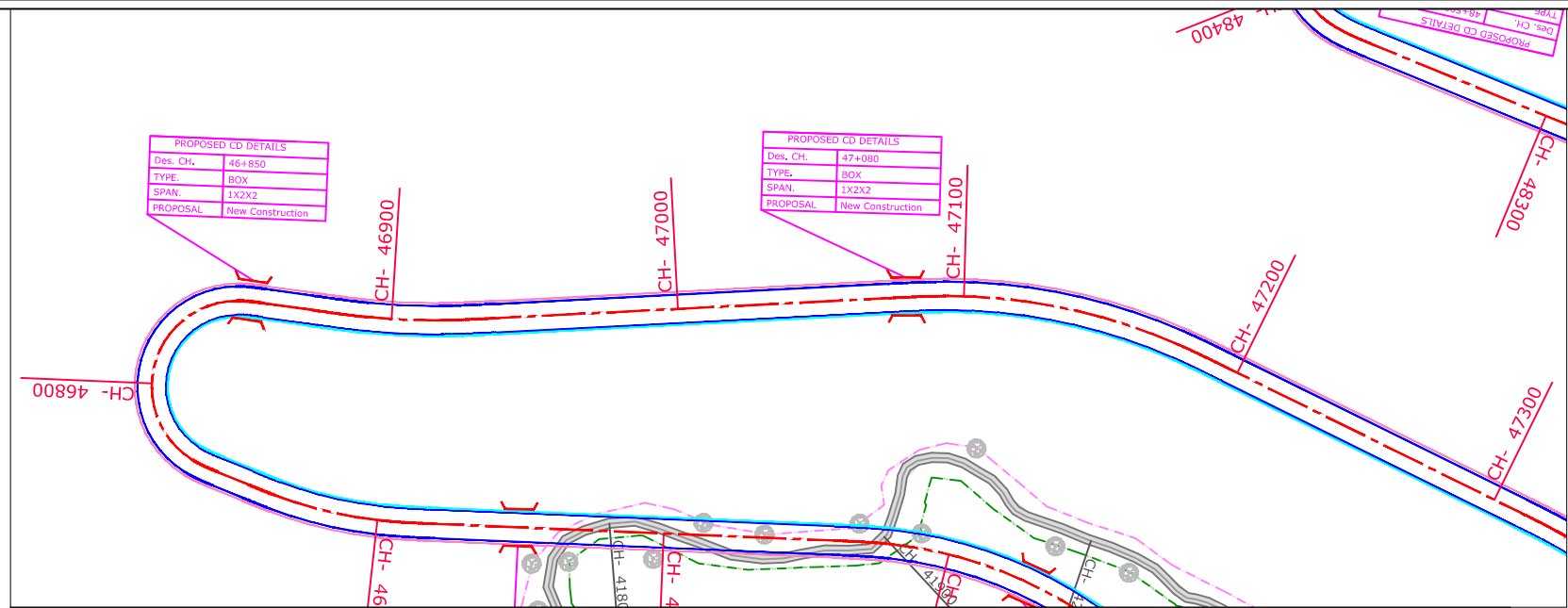
NEW ROAD LEVEL	613.940 613.322 612.704 612.086 611.469 610.851 610.233 609.615 608.998 608.380 607.762 607.144 606.527 605.909 605.291 604.674 604.056 603.438 602.820 602.203 601.585 600.967 600.349 599.732 599.114 598.496 597.879 597.261 596.643 596.025 595.408 594.790 594.172 593.554 592.937 592.319 591.701 591.083 590.466 589.848 589.230 588.613 587.995 587.377 586.759 586.142 585.524 584.906 584.288 583.671 583.053 582.435
EXISTING GENERAL GROUND	623.277 623.553 624.166 625.254 626.196 625.940 624.519 624.545 624.805 625.353 624.985 625.001 625.265 625.583 624.892 623.536 622.686 622.073 621.799 621.867 622.275 623.022 622.810 621.659 620.551 619.670 618.689 617.708 616.727 615.730 614.726 613.729 612.744 611.758 610.772 609.769 608.759 607.749 607.009 608.101 608.999 609.729 610.240 610.412 610.242 609.856 609.376 608.299 605.877 602.443 597.964 592.634
Level Difference	-9.337 -10.231 -11.464 -13.168 -14.728 -14.189 -14.386 -14.930 -15.808 -16.973 -17.222 -17.857 -18.738 -19.674 -19.600 -18.963 -18.630 -18.634 -18.979 -19.664 -20.690 -22.035 -22.461 -21.927 -21.537 -21.174 -20.811 -20.447 -20.084 -19.705 -19.319 -18.940 -18.571 -18.203 -17.835 -17.450 -17.058 -16.665 -16.543 -16.253 -15.769 -21.116 -22.245 -23.035 -23.483 -23.714 -23.855 -23.393 -21.589 -18.773 -14.911 -10.199
Vertical Geometry	
Horizontal Geometry	L: 125.000 L: 199.245 L: 20.000 L: 8.000 L: 20.000 R: 150.000 L: 70.652 L: 20.000 L = 138.821 L: 20.000 R: 150.000 L: 37.607 L: 10.000 L: 11.000 L: 10.000 R: 30.000 L: 76.698
SUPERLEVATION	
CHAINAGE	46300.000 46310.000 46320.000 46330.000 46340.000 46350.000 46360.000 46370.000 46380.000 46390.000 46400.000 46410.000 46420.000 46430.000 46440.000 46450.000 46460.000 46470.000 46480.000 46490.000 46500.000 46510.000 46520.000 46530.000 46540.000 46550.000 46560.000 46570.000 46580.000 46590.000 46600.000 46610.000 46620.000 46630.000 46640.000 46650.000 46660.000 46670.000 46680.000 46690.000 46700.000 46710.000 46720.000 46730.000 46740.000 46750.000 46760.000 46770.000 46780.000 46790.000 46800.000 46810.000

Legend	
Building	
Shop Gate	
Hut	
Water Tank Well	
Temple	
TBM.	
Electric Pole	
Telephone Pole	
Ht line 11& 33 kva	
Nala	
Drain	
Sign Board RYL SP	
Tree Gamla Bambu	
Culvert Bridge	
Pond	
Handpump	
Tranformer	
Traverse Station	
Ground Level	
OFC	
Welcome Board	
River Canal	
Boundry Wall	
Existing BT Center Line	
Existing Road Carriageway	
Proposed Center Line	
Proposed CARRIGE WAY	
Proposed Shoulder	
Hms	
Kms RB	
IL BL	
TOWER	
PETROL PUMP	
Public Tap	
Proposed ROW	

--: CONSULTANTS --:		--: CLIENT --:		DRG. NO. :	DESIGNED BY.	APPROVED BY.	--: PROJECT TITLE --:	--:PLAN & PROFILE--:	
L.N. MALVIYA INFRA PROJECTS PVT. LTD. T-10, III FLOOR, CITY CENTER, PRESS COMPLEX, PLOT NO.-1, M.P. NAGAR, ZONE-I, BHOPAL (M.P.)  Tel./Fax : 0755-4295421, Mob.: 09826452711, 09977004686 E-mail : lninfraprojects@gmail.com		NATIONAL HIGHWAYS INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (NHIDCL) 		9			Consultancy Services for Preparation of Feasibility Study and Detailed Project Report For Two lane With Paved Shoulders of Tamenglong Haflong Road In The State of Manipur on EPC Mode.	FROM DES. CH 46+300 - 46+800 AZURAM- MAKRU RIVER SECTION (PACKAGE-5)	

PLAN

PROFILE



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## PROFILE



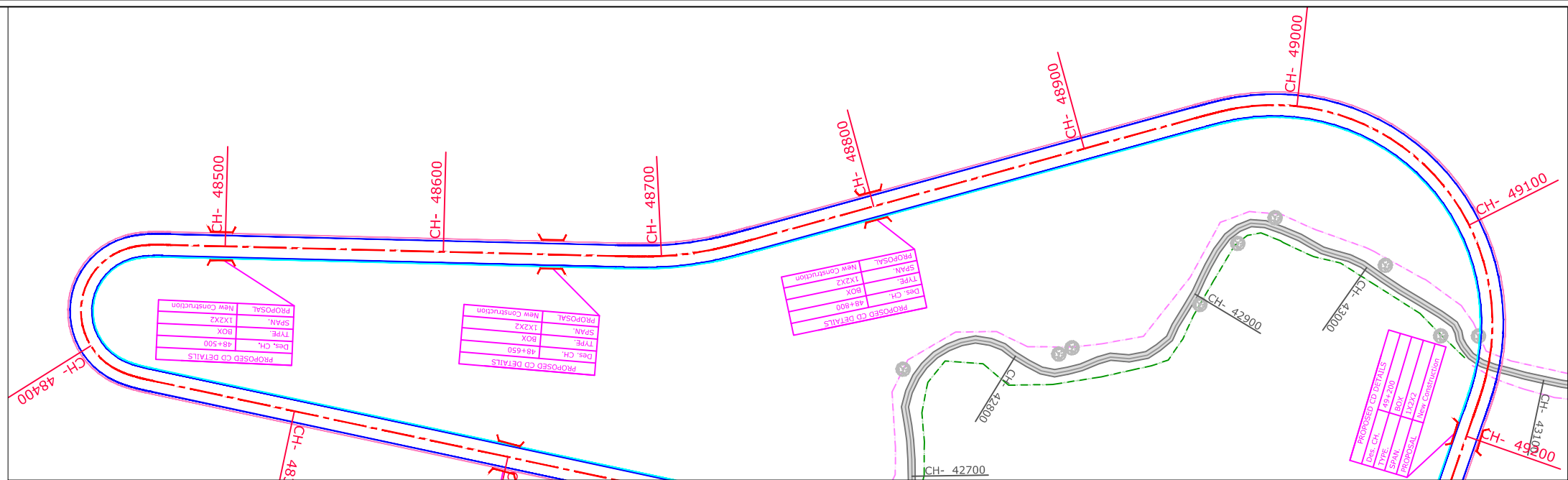
## PROFILE

## PROFILE



PLAN

PROFILE



NEW ROAD LEVEL	484.216 488.729 485.377 481.760 481.745 481.127 480.510 479.892 479.274 478.656 478.039 477.421 476.803 476.186 475.568 474.950 474.332 473.715 473.097 472.479 471.861 471.244 470.626 470.008 469.390 468.773 468.155 467.537 466.920 466.302 465.684 465.066 464.449 463.831 463.213 462.595 461.978 461.360 460.742 460.125 459.507 458.889 458.271 457.654 457.036 456.418 455.800 455.183 454.565 453.947 453.329 452.712 452.094 451.476 450.859 450.241 449.623 449.005 448.388 447.770 447.152 446.534 445.917 445.299 444.681 444.063 443.446 442.828 442.210 441.593 440.975
EXISTING GENERAL GROUND	491.525 488.729 485.377 481.760 481.745 481.127 480.510 479.892 479.274 478.656 478.039 477.421 476.803 476.186 475.568 474.950 474.332 473.715 473.097 472.479 471.861 471.244 470.626 470.008 469.390 468.773 468.155 467.537 466.920 466.302 465.684 465.066 464.449 463.831 463.213 462.595 461.978 461.360 460.742 460.125 459.507 458.889 458.271 457.654 457.036 456.418 455.800 455.183 454.565 453.947 453.329 452.712 452.094 451.476 450.859 450.241 449.623 449.005 448.388 447.770 447.152 446.534 445.917 445.299 444.681 444.063 443.446 442.828 442.210 441.593 440.975
Level Difference	-7.309 -5.131 -2.396 0.603 3.486 5.870 7.192 7.825 8.218 8.603 8.987 9.372 9.756 9.882 9.437 8.991 8.545 8.100 7.495 6.785 6.076 5.372 4.910 4.448 3.986 3.524 3.186 3.050 2.914 2.801 2.798 2.818 2.932 3.245 3.691 3.117 2.437 1.793 1.165 0.538 -0.089 -0.717 -1.398 -2.078 -2.719 -3.347 -3.974 -4.602 -5.085 -4.658 -4.534 -4.515 -4.495 -4.476 -4.457 -3.379 -3.510 -3.717 -4.099 -4.690 -5.497 -6.106 -6.103 -6.269 -6.609 -7.128 -7.824 -8.699 -9.747 -10.968 -11.219
Vertical Geometry	
Horizontal Geometry	R: 30.000 L: 66.667 L: 20.000 L = 204.348 L: 20.000 R: 150.000 L: 23.831 L: 20.000 L = 210.057 L: 20.000 R: 100.000 L: 197.413
SUPERLEVATION	
CHAINAGE	8400.000 8410.000 8420.000 8430.000 8440.000 8450.000 8460.000 8470.000 8480.000 8490.000 8500.000 8510.000 8520.000 8530.000 8540.000 8550.000 8560.000 8570.000 8580.000 8590.000 8600.000 8610.000 8620.000 8630.000 8640.000 8650.000 8660.000 8670.000 8680.000 8690.000 8700.000 8710.000 8720.000 8730.000 8740.000 8750.000 8760.000 8770.000 8780.000 8790.000 8800.000 8810.000 8820.000 8830.000 8840.000 8850.000 8860.000 8870.000 8880.000 8890.000 8900.000 8910.000 8920.000 8930.000 8940.000 8950.000 8960.000 8970.000 8980.000 8990.000 9000.000 9010.000 9020.000 9030.000 9040.000 9050.000 9060.000 9070.000 9080.000 9090.000 9100.000

Legend	
Building	
Shop Gate	
Hut	
Water Tank Well	
Temple	
TBM.	
Electric Pole	
Telephone Pole	
Ht line 11& 33 kva	
Nala	
Drain	
Sign Board RYL SP	
Tree Gamla Bambu	
Culvert Bridge	
Pond	
Handpump	
Tranformer	
Traverse Station	
Ground Level	
OFC	
Welcome Board	
River Canal	
Boundry Wall	
Existing BT Center Line	
Existing Road Carriageway	
Proposed Center Line	
Proposed CARRIGE WAY	
Proposed Shoulder	
Hms	
Kms RB	
IL BL	
TOWER	
PETROL PUMP	
Public Tap	
Proposed ROW	

-- CONSULTANTS --		-- CLIENT --		DRG. NO. :	DESIGNED BY.	APPROVED BY.	-- PROJECT TITLE --		-- PLAN & PROFILE --	
L.N. MALVIYA INFRA PROJECTS PVT. LTD. T-10, III FLOOR, CITY CENTER, PRESS COMPLEX, PLOT NO.-1, M.P. NAGAR, ZONE-I, BHOPAL (M.P.) Tel./Fax : 0755-4295421, Mob.: 09826452711, 09977004686 E-mail : lninfra@projects@gmail.com		NATIONAL HIGHWAYS INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (NHIDCL)		13			Consultancy Services for Preparation of Feasibility Study and Detailed Project Report For Two lane With Paved Shoulders of Tamenglong Haflong Road In The State of Manipur on EPC Mode.		FROM DES. CH 48+400 - 49+100 AZURAM-MAKRU RIVER SECTION (PACKAGE-5)	

## PROFILE

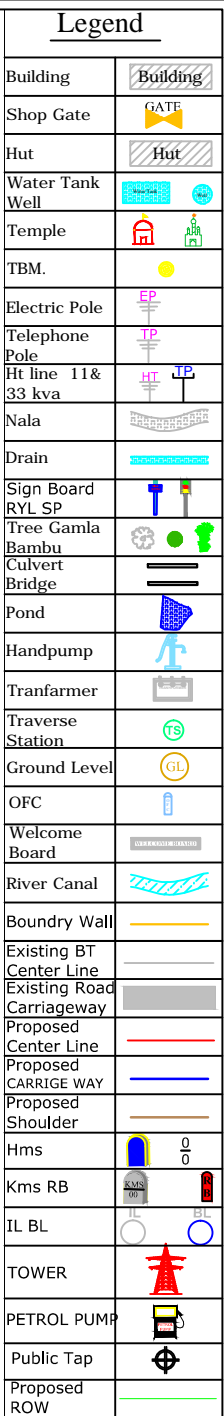


## PROFILE

## PROFILE



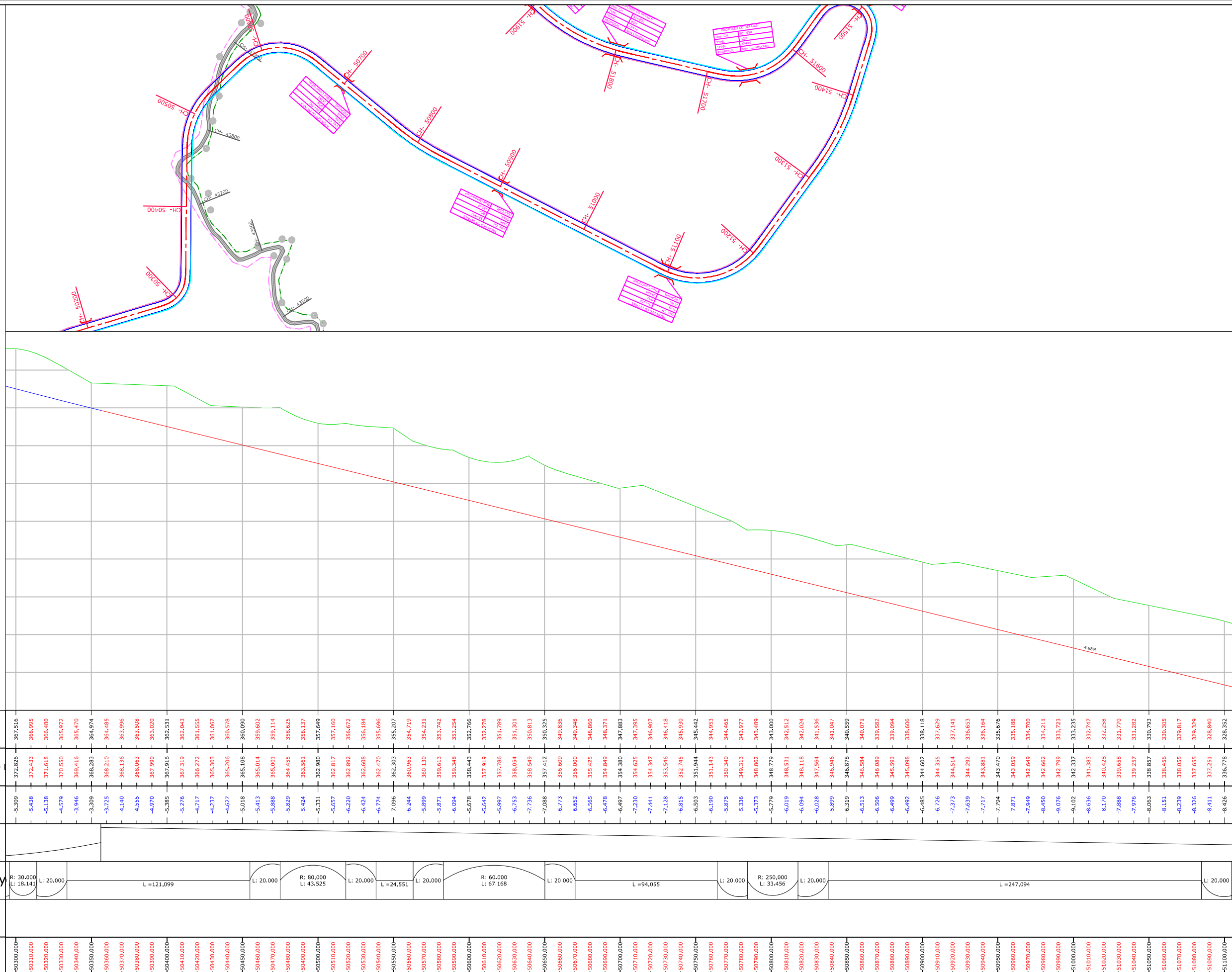
## PROFILE



<p align="center">-: CONSULTANTS :-</p>	<p align="center">-: CLIENT :-</p>	<p align="center">DRG. NO. :</p>	<p align="center">DESIGNED BY.</p>	<p align="center">APPROVED BY.</p>	<p align="center">-: PROJECT TITLE :-</p>	<p align="center">-:PLAN &amp; PROFILE:-</p>
<p><b>L.N. MALVIYA INFRA PROJECTS PVT. LTD.</b></p> <p>T-10, III FLOOR, CITY CENTER, PRESS COMPLEX, PLOT NO.-1, M.P. NAGAR, ZONE-I, BHOPAL (M.P.)</p> <div data-bbox="92 1957 350 1961"> </div> <p>Tel/Fax : 0755-4295421, Mob.: 09826452711, 09977004686 E-mail : <a href="mailto:lninfraprojects@gmail.com">lninfraprojects@gmail.com</a></p>	<p align="center"><b>NATIONAL HIGHWAYS INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (NHIDCL)</b></p> <div data-bbox="578 1957 866 1961"> </div>	<p align="center" style="font-size: 48px;">15</p>			<p>Consultancy Services for Preparation of Feasibility Study and Detailed Project Report For Two lane With Paved Shoulders of Tamenglong Haflong Road In The State of Manipur on EPC Mode.</p>	<p align="center">FROM DES. CH 49+700 - 50+300</p> <p align="center"><b>AZURAM- MAKRU RIVER SECTION (PACKAGE-5)</b></p>

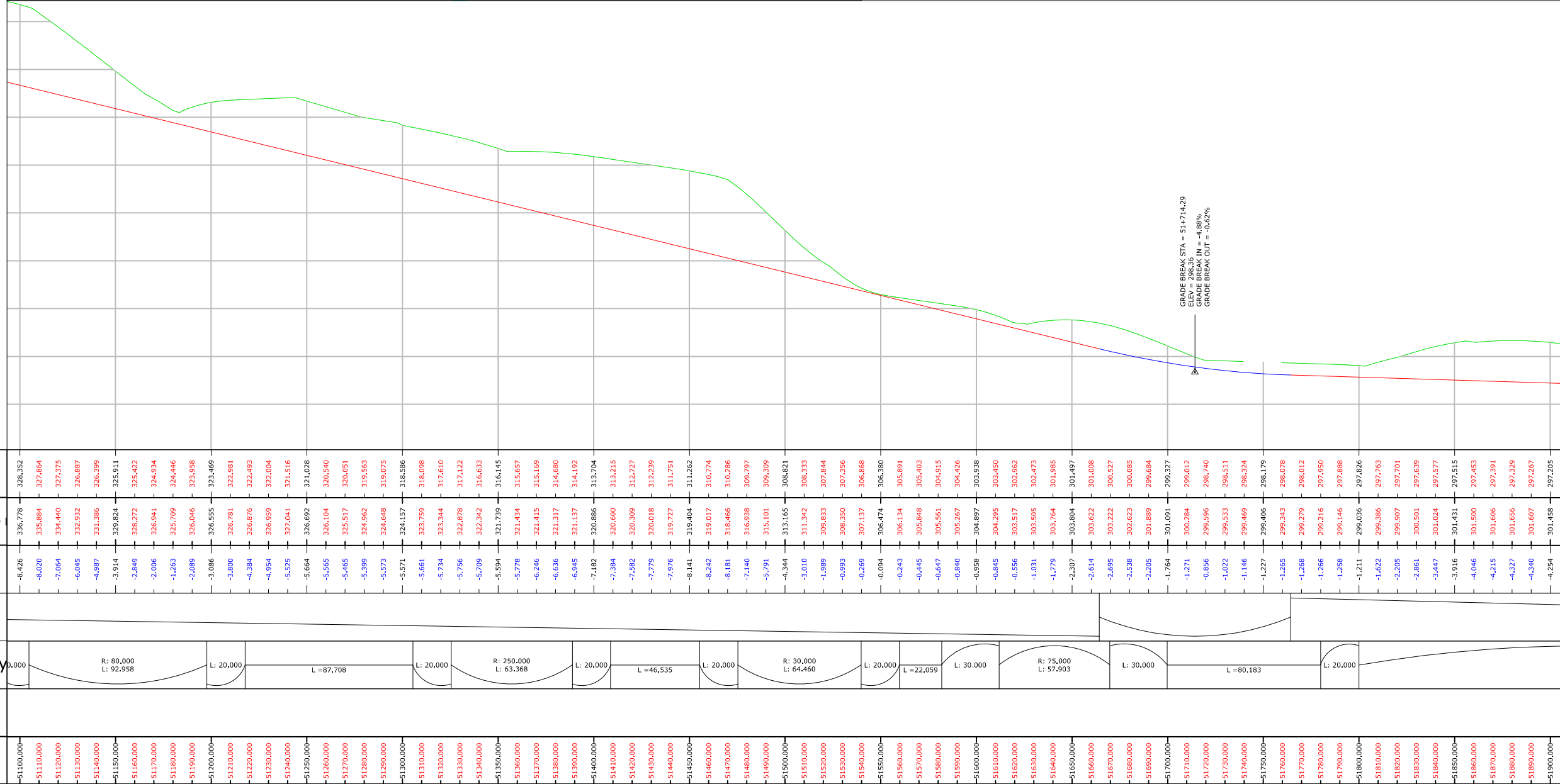
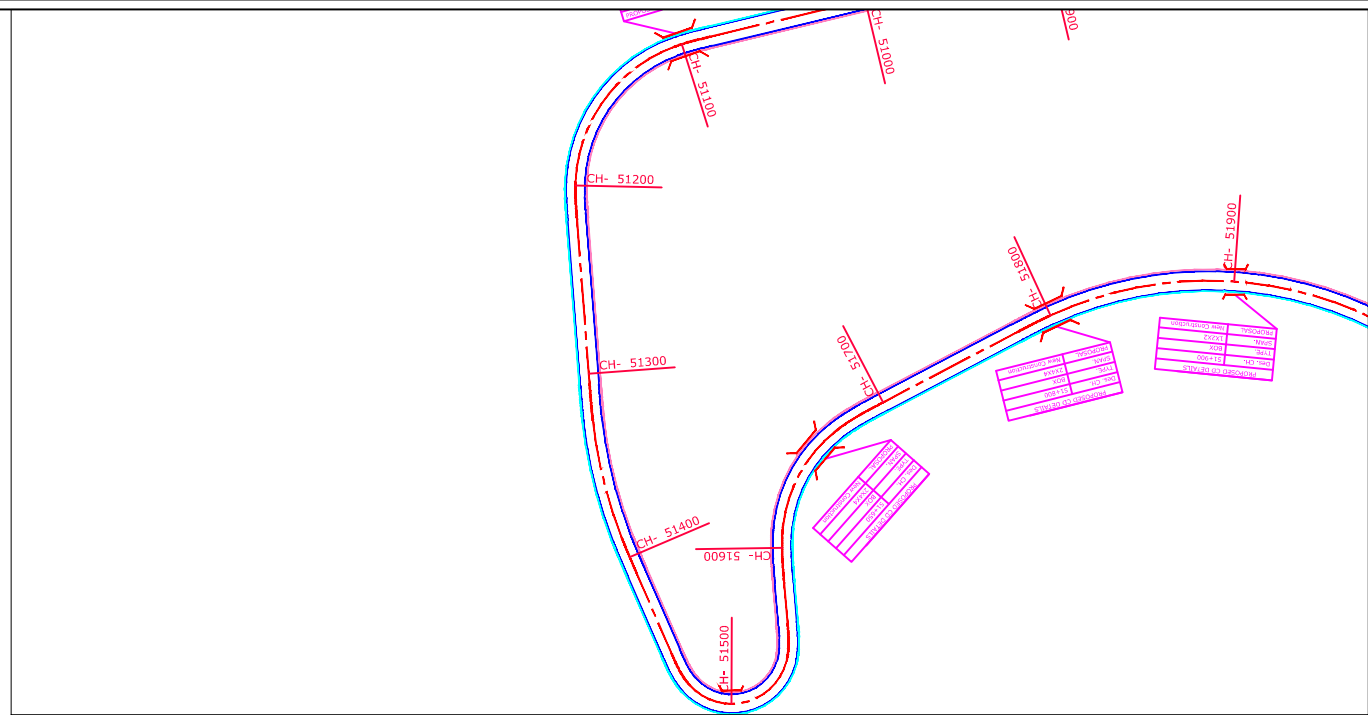
PLAN

PROFILE



Legend	
Building	
Shop Gate	
Hut	
Water Tank Well	
Temple	
TBM.	
Electric Pole	
Telephone Pole	
Ht line 11& 33 kva	
Nala	
Drain	
Sign Board RYL SP	
Tree Gamla Bambu	
Culvert	
Bridge	
Pond	
Handpump	
Tranformer	
Traverse Station	
Ground Level	
OFC	
Welcome Board	
River Canal	
Boundry Wall	
Existing BT Center Line	
Existing Road Carriageway	
Proposed Center Line	
Proposed CARRIGE WAY	
Proposed Shoulder	
Hms	
Kms RB	
IL BL	
TOWER	
PETROL PUMP	
Public Tap	
Proposed ROW	

--: CONSULTANTS --:		--: CLIENT --:		DRG. NO. :	DESIGNED BY.	APPROVED BY.	--: PROJECT TITLE --:		--:PLAN & PROFILE--:	
L.N. MALVIYA INFRA PROJECTS PVT. LTD. T-10, III FLOOR, CITY CENTER, PRESS COMPLEX, PLOT NO.-1, M.P. NAGAR, ZONE-I, BHOPAL (M.P.)  Tel./Fax : 0755-4295421, Mob.: 09826452711, 09977004686 E-mail : lninfraprojects@gmail.com		NATIONAL HIGHWAYS INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (NHIDCL) 		16			Consultancy Services for Preparation of Feasibility Study and Detailed Project Report For Two lane With Paved Shoulders of Tamenglong Haflong Road In The State of Manipur on EPC Mode.		FROM DES. CH 50+300 - 51+100  AZURAM- MAKRU RIVER SECTION (PACKAGE-5)	



Legend	
Building	
Shop Gate	
Hut	
Water Tank Well	
Temple	
TBM.	
Electric Pole	
Telephone Pole	
Ht line 11& 33 kva	
Nala	
Drain	
Sign Board RYL SP	
Tree Gamla Bambu	
Culvert	
Bridge	
Pond	
Handpump	
Tranformer	
Traverse Station	
Ground Level	
OFC	
Welcome Board	
River Canal	
Boundry Wall	
Existing BT Center Line	
Existing Road Carriageway	
Proposed Center Line	
Proposed CARRIGE WAY	
Proposed Shoulder	
Hms	
Kms RB	
IL BL	
TOWER	
PETROL PUMP	
Public Tap	
Proposed ROW	

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CLIENT

NATIONAL HIGHWAYS INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (NHIDCL)

BUILDRON INFRASTRUCTURE - BUILDING THE NATION

DRG. NO. :

17

DESIGNED BY.

APPROVED BY.

PROJECT TITLE

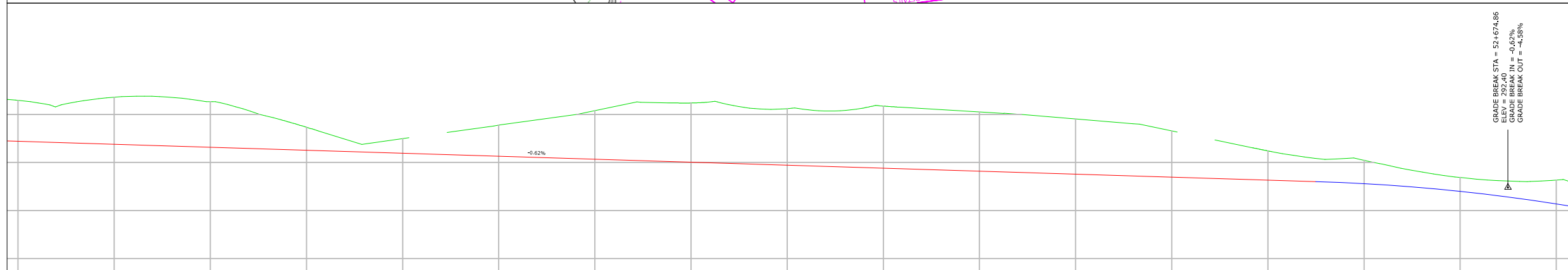
Consultancy Services for Preparation of Feasibility Study and Detailed Project Report For Two lane With Paved Shoulders of Tamenglong Haflong Road In The State of Manipur on EPC Mode.






































PLAN & PROFILE

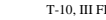

FROM DES. CH 51+100 - 51+900

AZURAM- MAKRU RIVER SECTION (PACKAGE-5)

## PROFILE

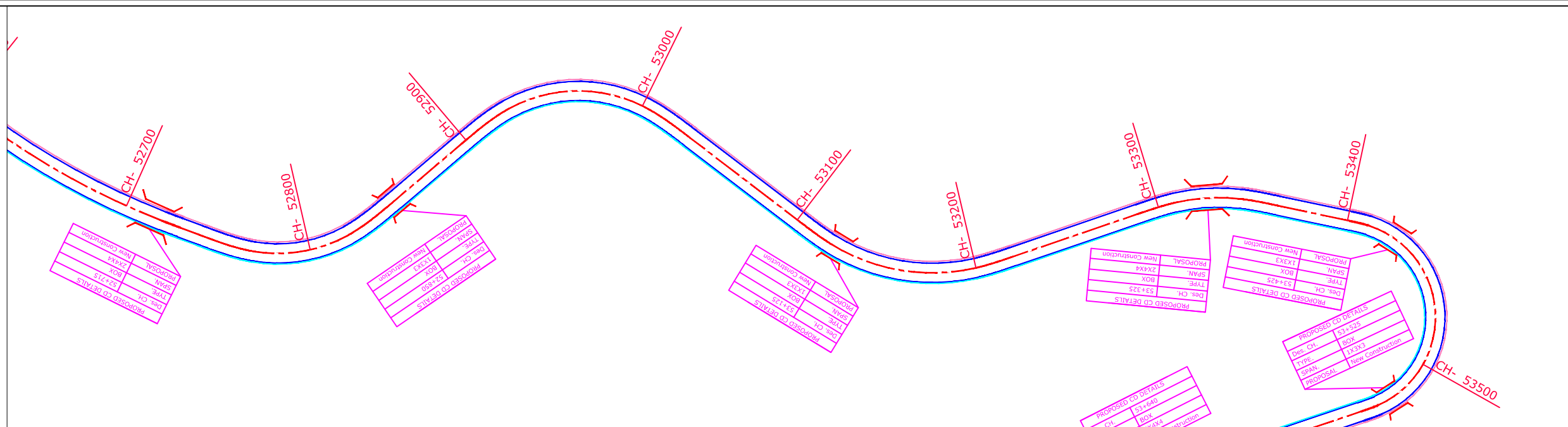
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Legend	
Building	
Shop Gate	
Hut	
Water Tank Well	
Temple	
TBM.	
Electric Pole	
Telephone Pole	
Ht line 11& 33 kva	
Nala	
Drain	
Sign Board RYL SP	
Tree Gamla	
Bambu	
Culvert	
Bridge	
Pond	
Handpump	
Tranformer	
Traverse Station	
Ground Level	
OFC	
Welcome Board	
River Canal	
Boundry Wall	
Existing BT Center Line	
Existing Road Carriageway	
Proposed Center Line	
Proposed CARRIGE WAY	
Proposed Shoulder	
Hms	
Kms RB	
IL BL	
TOWER	
PETROL PUMP	
Public Tap	
Proposed ROW	

<p align="center">-: CONSULTANTS :-</p> <p><b>L.N. MALVIYA INFRA PROJECTS PVT. LTD.</b></p> <p>T-10, III FLOOR, CITY CENTER, PRESS COMPLEX, PLOT NO.-1, M.P. NAGAR, ZONE-I, BHOPAL (M.P.)</p> <p>Tel./Fax : 0755-4295421, Mob.: 09826452711, 09977004686 E-mail : <a href="mailto:lninfraprojects@gmail.com">lninfraprojects@gmail.com</a></p> 	<p align="center">-: CLIENT :-</p> <p align="center"><b>NATIONAL HIGHWAYS INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (NHIDCL)</b></p> 	<p align="center">DRG. NO. :</p> <p align="center"><b>18</b></p>	<p align="center">DESIGNED BY.</p>	<p align="center">APPROVED BY.</p>	<p align="center">-: PROJECT TITLE :-</p> <p>Consultancy Services for Preparation of Feasibility Study and Detailed Project Report For Two lane With Paved Shoulders of Tamenglong Haflong Road In The State of Manipur on EPC Mode.</p>	<p align="center">-:PLAN &amp; PROFILE:-</p> <p align="center">FROM DES. CH 51+900 - 52+700</p> <p align="center"><b>AZURAM- MAKRU RIVER SECTION (PACKAGE-5)</b></p>
--	---	--	------------------------------------	------------------------------------	--	--



PLAN



PROFILE

Level Datum= 245



NEW ROAD LEVEL	290.691	290.372	290.032	289.673	289.295	288.896	288.478	288.040	287.585	287.117	286.669	286.212	285.754	285.297	284.839	284.382	283.924	283.466	283.009	282.551	282.094	281.636	281.179	280.721	280.264	279.806	279.348	278.891	278.433	277.976	277.518	277.061	276.603	276.145	275.688	275.230	274.773	274.315	273.858	273.400	272.942	272.485	272.027	271.570	271.112	270.655	270.197	269.739	269.282	268.824	268.367	267.909	267.452	266.994	266.536	266.079	265.621	265.164	264.706	264.249	263.791	263.333	262.876	262.418	261.961	261.503	261.046	260.588	260.130	259.673	259.215	258.758	258.300	257.843	257.385	256.927	256.470	256.012	255.555	255.097	254.640																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
EXISTING GENERAL GROUND	293.174	292.819	292.227	291.915	291.726	291.548	291.355	290.184	289.146	288.269	287.947	288.107	288.163	288.034	288.035	287.856	287.318	286.780	286.241	285.703	285.165	284.607	283.977	283.003	281.890	280.679	279.753	279.004	278.891	278.433	277.537	277.501	277.449	277.270	277.031	276.784	276.536	276.284	275.912	275.540	275.315	275.172	275.033	274.972	274.534	273.909	273.403	273.025	272.777	272.597	272.250	270.696	269.765	269.189	268.698	268.221	267.745	267.296	266.880	266.409	265.938	265.466	264.975	264.469	263.966	263.489	262.999	262.502	262.115	261.834	261.588	261.330	261.046	260.758	260.466	260.170	259.866	259.555	259.245	258.934	258.623	258.312	258.001	257.690	257.379	257.068	256.757	256.446	256.135	255.824	255.513	255.202	254.891	254.580	254.269	253.958	253.647	253.336	253.025	252.714	252.403	252.092	251.781	251.470	251.159	250.848	250.537	250.226	249.915	249.604	249.293	248.982	248.671	248.360	248.049	247.738	247.427	247.116	246.805	246.494	246.183	245.872	245.561	245.250	244.939	244.628	244.317	244.006	243.695	243.384	243.073	242.762	242.451	242.140	241.829	241.518	241.207	240.896	240.585	240.274	240.000	239.726	239.452	239.178	238.904	238.630	238.356	238.082	237.808	237.534	237.260	236.986	236.712	236.438	236.164	235.890	235.616	235.342	235.068	234.794	234.520	234.246	233.972	233.698	233.424	233.150	232.876	232.602	232.328	232.054	231.780	231.506	231.232	230.958	230.684	230.410	230.136	229.862	229.588	229.314	229.040	228.766	228.492	228.218	227.944	227.670	227.396	227.122	226.848	226.574	226.300	226.026	225.752	225.478	225.204	224.930	224.656	224.382	224.108	223.834	223.560	223.286	223.012	222.738	222.464	222.190	221.916	221.642	221.368	221.094	220.820	220.546	220.272	220.000	219.726	219.452	219.178	218.904	218.630	218.356	218.082	217.808	217.534	217.260	216.986	216.712	216.438	216.164	215.890	215.616	215.342	215.068	214.794	214.520	214.246	213.972	213.698	213.424	213.150	212.876	212.602	212.328	212.054	211.780	211.506	211.232	210.958	210.684	210.410	210.136	210.000	209.726	209.452	209.178	208.904	208.630	208.356	208.082	207.808	207.534	207.260	206.986	206.712	206.438	206.164	205.890	205.616	205.342	205.068	204.794	204.520	204.246	203.972	203.698	203.424	203.150	202.876	202.602	202.328	202.054	201.780	201.506	201.232	200.958	200.684	200.410	200.136	200.000	199.726	199.452	199.178	198.904	198.630	198.356	198.082	197.808	197.534	197.260	196.986	196.712	196.438	196.164	195.890	195.616	195.342	195.068	194.794	194.520	194.246	193.972	193.698	193.424	193.150	192.876	192.602	192.328	192.054	191.780	191.506	191.232	190.958	190.684	190.410	190.136	190.000	189.726	189.452	189.178	188.904	188.630	188.356	188.082	187.808	187.534	187.260	186.986	186.712	186.438	186.164	185.890	185.616	185.342	185.068	184.794	184.520	184.246	183.972	183.698	183.424	183.150	182.876	182.602	182.328	182.054	181.780	181.506	181.232	180.958	180.684	180.410	180.136	180.000	179.726	179.452	179.178	178.904	178.630	178.356	178.082	177.808	177.534	177.260	176.986	176.712	176.438	176.164	175.890	175.616	175.342	175.068	174.794	174.520	174.246	173.972	173.698	173.424	173.150	172.876	172.602	172.328	172.054	171.780	171.506	171.232	170.958	170.684	170.410	170.136	170.000	169.726	169.452	169.178	168.904	168.630	168.356	168.082	167.808	167.534	167.260	166.986	166.712	166.438	166.164	165.890	165.616	165.342	165.068	164.794	164.520	164.246	163.972	163.698	163.424	163.150	162.876	162.602	162.328	162.054	161.780	161.506	161.232	160.958	160.684	160.410	160.136	160.000	159.726	159.452	159.178	158.904	158.630	158.356	158.082	157.808	157.534	157.260	156.986	156.712	156.438	156.164	155.890	155.616	155.342	155.068	154.794	154.520	154.246	153.972	153.698	153.424	153.150	152.876	152.602	152.328	152.054	151.780	151.506	151.232	150.958	150.684	150.410	150.136	150.000	149.726	149.452	149.178	148.904	148.630	148.356	148.082	147.808	147.534	147.260	146.986	146.712	146.438	146.164	145.890	145.616	145.342	145.068	144.794	144.520	144.246	143.972	143.698	143.424	143.150	142.876	142.602	142.328	142.054	141.780	141.506	141.232	140.958	140.684	140.410	140.136	140.000	139.726	139.452	139.178	138.904	138.630	138.356	138.082	137.808	137.534	137.260	136.986	136.712	136.438	136.164	135.890	135.616	135.342	135.068	134.794	134.520	134.246	133.972	133.698	133.424	133.150	132.876	132.602	132.328	132.054	131.780	131.506	131.232	130.958	130.684	130.410	130.136	130.000	129.726	129.452	129.178	128.904	128.630	128.356	128.082	127.808	127.534	127.260	126.986	126.712	126.438	126.164	125.890	125.616	125.342	125.068	124.794	124.520	124.246	123.972	123.698	123.424	123.150	122.876	122.602	122.328	122.054	121.780	121.506	121.232	120.958	120.684	120.410	120.136	120.000	119.726	119.452	119.178	118.904	118.630	118.356	118.082	117.808	117.534	117.260	116.986	116.712	116.438	116.164	115.890	115.616	115.342	115.068	114.794	114.520	114.246	113.972	113.698	113.424	113.150	112.876	112.602	112.328	112.054	111.780	111.506	111.232	110.958	110.684	110.410	110.136	110.000	109.726	109.452	109.178	108.904	108.630	108.356	108.082	107.808	107.534	107.260	106.986	106.712	106.438	106.164	105.890	105.616	105.342	105.068	104.794	104.520	104.246	103.972	103.698	103.424	103.150	102.876	102.602	102.328	102.054	101.780	101.506	101.232	100.958	100.684	100.410	100.136	100.000	99.726	99.452	99.178	98.904	98.630	98.356	98.082	97.808	97.534	97.260	96.986	96.712	96.438	96.164	95.890	95.616	95.342	95.068	94.794	94.520	94.246	93.972	93.698	93.424	93.150	92.876	92.602	92.328	92.054	91.780	91.506	91.232	90.958	90.684	90.410	90.136	90.000	89.726	89.452	89.178	88.904	88.630	88.356	88.082	87.808	87.534	87.260	86.986	86.712	86.438	86.164	85.890	85.616	85.342	85.068	84.794	84.520	84.246	83.972	83.698	83.424	83.150	82.876	82.602	82.328	82.054	81.780	81.506	81.232	80.958	80.684	80.410	80.136	80.000	79.726	79.452	79.178	78.904	78.630	78.356	78.082	77.808	77.534	77.260	76.986	76.712	76.438	76.164	75.890	75.616	75.342	75.068	74.794	74.520	74.246	73.972	73.698	73.424	73.150	72.876	72.602	72.328	72.054	71.780	71.506	71.232	70.958	70.684	70.410	70.136	70.000	69.726	69.452	69.178	68.904	68.630	68.356	68.082	67.808	67.534	67.260	66.986	66.712	66.438	66.164	65.890	65.616	65.342	65.068	64.794	64.520	64.246	63.972	63.698	63.424	63.150	62.876	62.602	62.328	62.054	61.780	61.506	61.232	60.958	60.684	60.410	60.136	60.000	59.726	59.452	59.178	58.904	58.630	58.356	58.082	57.808	57.534	57.260	56.986	56.712	56.438	56.164	55.890	55.616	55.342	55.068	54.794	54.520	54.246	53.972	53.698	53.424	53.150	52.876	52.602	52.328	52.054	51.780	51.506	51.232	50.958	50.684	50.410	50.136	50.000	49.726	49.452	49.178	48.904	48.630	48.356	48.082	47.808	47.534	47.260	46.986	46.712	46.438	46.164	45.890	45.616	45.342	45.068	44.794	44.520	44.246	43.972	43.698	43.424	43.150	42.876	42.602	42.328	42.054	41.780	41.506	41.232	40.958	40.684	40.410	40.136	40.000	39.726	39.452	39.178	38.904	38.630	38.356	38.082	37.808	37.534	37.260	36.986	36.712	36.438	36.164	35.890	35.616	35.342	35.068	34.794	34.520	34.246	33.972	33.698	33.424	33.150	32.876	32.602	32.328	32.054	31.780	31.506	31.232	30.958	30.684	30.410	30.136	30.000	29.726	29.452	29.178	28.904	28.630	28.356	28.082	27.808	27.534	27.260	26.986	26.712	26.438	26.164	25.890	25.616	25.342	25.068	24.794	24.520	24.246	23.972	23.698	23.424	23.150	22.876	22.602	22.328	22.054	21.780	21.506	21.232	20.958	20.684	20.410	20.

## PROFILE

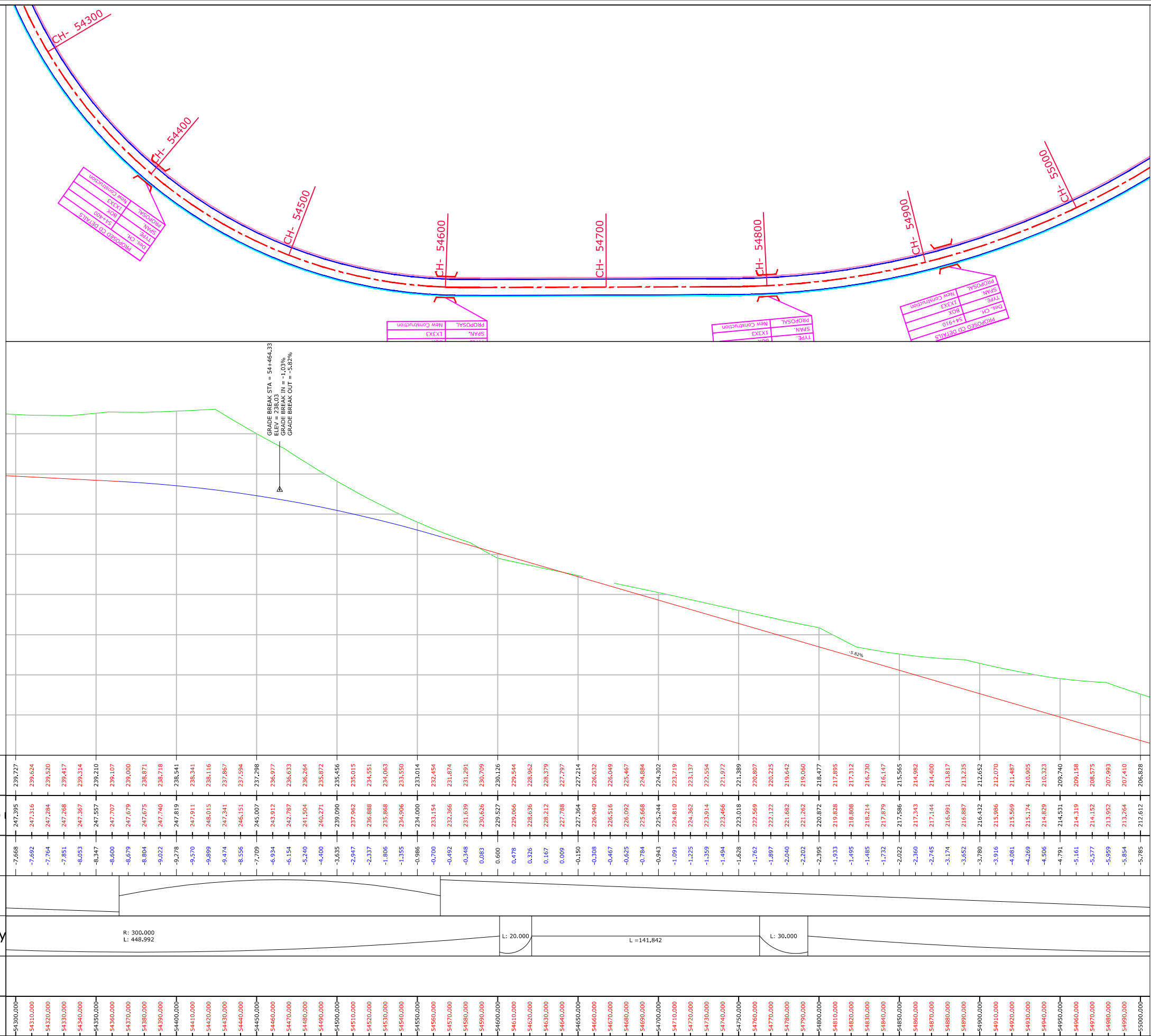


<p align="center">:- CONSULTANTS :-</p> <p><b>L.N. MALVIYA INFRA PROJECTS PVT. LTD.</b></p> <p>T-10, III FLOOR, CITY CENTER, PRESS COMPLEX, PLOT NO.-I, M.P. NAGAR, ZONE-I, BHOPAL (M.P.)</p> <div style="display: flex; align-items: center;"> <div> <p>Tel./Fax : 0755-4295421, Mob.: 09826452711, 09977004686 E-mail : <a href="mailto:lninfraprojects@gmail.com">lninfraprojects@gmail.com</a></p> </div> </div>		<p align="center">:- CLIENT :-</p> <p align="center"><b>NATIONAL HIGHWAYS INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (NHIDCL)</b></p> <div style="display: flex; align-items: center;"> </div>		<p align="center">DRG. NO. :</p> <p align="center" style="font-size: 2em;">20</p>	<p align="center">DESIGNED BY.</p>	<p align="center">APPROVED BY.</p>	<p align="center">:- PROJECT TITLE :-</p> <p>Consultancy Services for Preparation of Feasibility Study and Detailed Project Report For Two lane With Paved Shoulders of Tamenglong Haflong Road In The State of Manipur on EPC Mode.</p>	<p align="center">FROM</p> <p align="center"><b>AZURAM</b></p>
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PROFILE:-			
53+500 - 54+300			
RIVER SECTION (GE-5)			

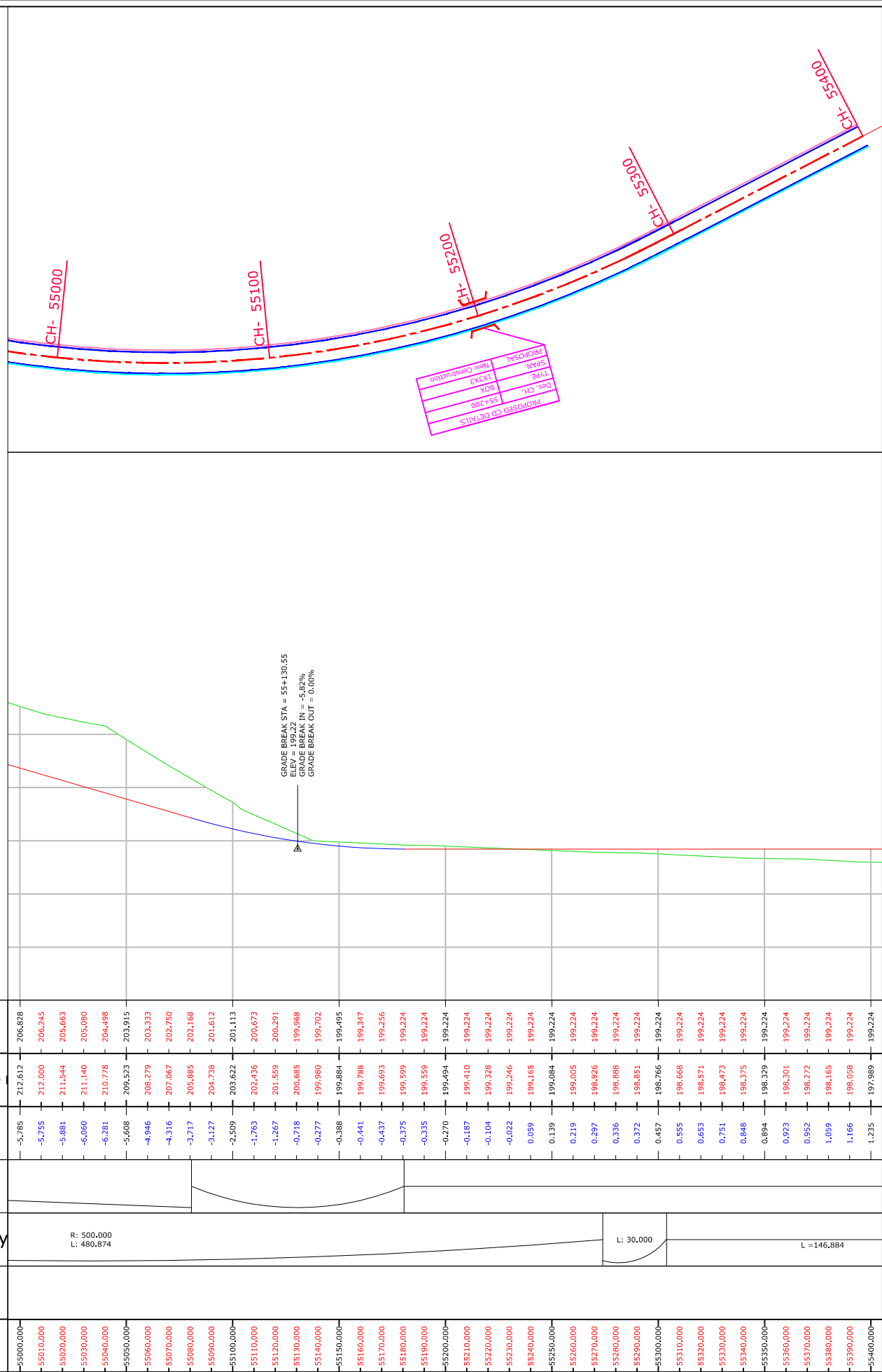
PLAN

PROFILE



Legend	
Building	
Shop Gate	
Hut	
Water Tank	
Well	
Temple	
TBM.	
Electric Pole	
Telephone Pole	
Ht line 11& 33 kva	
Nala	
Drain	
Sign Board	
RYL SP	
Tree Gamla	
Bambu	
Culvert	
Bridge	
Pond	
Handpump	
Tranformer	
Traverse Station	
Ground Level	
OFC	
Welcome Board	
River Canal	
Boundry Wall	
Existing BT Center Line	
Existing Road Carriageway	
Proposed Center Line	
Proposed CARRIGE WAY	
Proposed Shoulder	
Hms	
Kms RB	
IL BL	
TOWER	
PETROL PUMP	
Public Tap	
Proposed ROW	

-- CONSULTANTS --		-- CLIENT --		DRG. NO. :	DESIGNED BY.	APPROVED BY.	-- PROJECT TITLE --		--PLAN & PROFILE--	
L.N. MALVIYA INFRA PROJECTS PVT. LTD. T-10, III FLOOR, CITY CENTER, PRESS COMPLEX, PLOT NO.-1, M.P. NAGAR, ZONE-I, BHOPAL (M.P.)  Tel./Fax : 0755-4295421, Mob.: 09826452711, 09977004686 E-mail : lninfraprojects@gmail.com		NATIONAL HIGHWAYS INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (NHIDCL) 		21			Consultancy Services for Preparation of Feasibility Study and Detailed Project Report For Two lane With Paved Shoulders of Tamenglong Haflong Road In The State of Manipur on EPC Mode.		FROM DES. CH 54+300 - 55+000 AZURAM- MAKRU RIVER SECTION (PACKAGE-5)	



PROPOSED CD DETAILS  
DES. CH. 55+200  
TYPE BOX  
SPAN 1X13X3  
NEW CONSTRUCTION  
PROPOSAL

GRADE BREAK STA = 55+130.55  
GRADE BREAK IN = -5.82%  
GRADE BREAK OUT = 0.00%

Legend

Building	
Shop Gate	
Hut	
Water Tank	
Well	
Temple	
TBM.	
Electric Pole	
Telephone Pole	
Ht line 11& 33 kva	
Nala	
Drain	
Sign Board	
RYL SP	
Tree Gamla	
Bambu	
Culvert	
Bridge	
Pond	
Handpump	
Tranfarmer	
Traverse Station	
Ground Level	
OFC	
Welcome Board	
River Canal	
Boundry Wall	
Existing BT Center Line	
Existing Road Carriageway	
Proposed Center Line	
Proposed CARRIGE WAY	
Proposed Shoulder	
Hms	
Kms RB	
IL BL	
TOWER	
PETROL PUMP	
Public Tap	
Proposed ROW	

--: CONSULTANTS --:

L.N. MALVIYA INFRA PROJECTS PVT. LTD.

T-10, III FLOOR, CITY CENTER, PRESS COMPLEX, PLOT NO.-1,  
M.P. NAGAR, ZONE-1, BHOPAL (M.P.)



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E-mail : lninfraprojects@gmail.com

--: CLIENT --:

NATIONAL HIGHWAYS INFRASTRUCTURE  
DEVELOPMENT CORPORATION LIMITED (NHIDCL)



DRG. NO. :

22

DESIGNED BY.

APPROVED BY.

--: PROJECT TITLE --:

Consultancy Services for Preparation of Feasibility Study  
and Detailed Project Report For Two lane With Paved  
Shoulders of Tamenglong Haflong Road In The State of  
Manipur on EPC Mode.

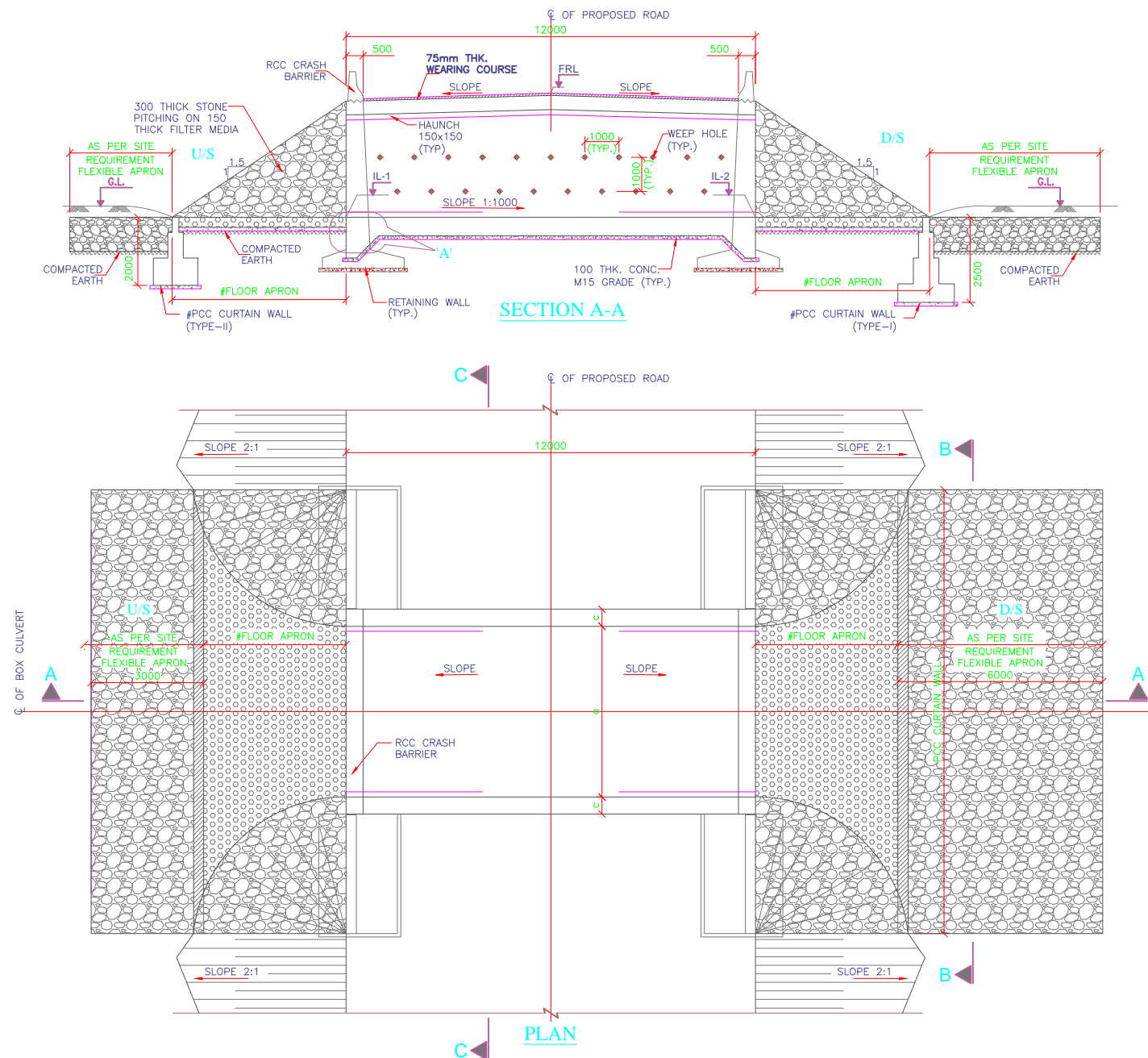
--:PLAN & PROFILE--:

FROM DES. CH 55+000 - 55+400

AZURAM- MAKRU RIVER SECTION  
(PACKAGE-5)

# **GAD's OF STRUCTURES**





## NOTES:-

- ALL DIMENSIONS ARE IN MILLIMETER AND LEVELS ARE IN METER UNLESS MENTIONED OTHERWISE.
- DIMENSIONS ARE NOT TO BE SCALED, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
- THE SAFE BEARING CAPACITY ASSUMED IN THE DESIGN IS  $10T/M^2$ . THIS SBC SHOULD BE VERIFIED AT SITE BEFORE EXECUTION. ANY VARIATION ON SITE SHOULD BE INFORMED TO THE DESIGN ENGINEER FOR NECESSARY ACTION.
- GRADE OF UNTENSIONED STEEL SHALL BE Fe 500, CONFIRMING TO IS:1786.
- CONCRETE SHALL BE OF DESIGN MIX AND SHALL HAVE MINIMUM 28 DAYS CHARACTERISTIC CUBE STRENGTH AS FOLLOWS:-
  - RCC BOX..... M30
  - RCC CRASH BARRIER..... M40
  - RETAINING WALL..... M30
  - PCC LEVELING COURSE.... M15
- THE RCC BOX SHOULD BE CONSTRUCTED FIRST AND THE SIDE FILLING & COMPACTION SHALL BE DONE AS PER MoRTH SPECIFICATIONS.
- THE BACKFILL MATERIAL BEHIND RCC BOX/RETAINING WALL SHALL HAVE FOLLOWING PROPERTIES  $\phi=30^\circ$ ,  $\gamma \geq 2.0 T/Cum$
- DETAIL OF CAMBER/SUPER ELEVATION MAY BE VERIFIED WITH LATEST PLAN AND PROFILE DRAWING.
- FLOW DIRECTION SHOWN IN THE DRAWING IS INDICATIVE ONLY. BED PROTECTION FOR UPSTREAM AND DOWN STREAM SHALL BE BASED ON THE FLOW DIRECTION IN SITE.
- FLEXIBLE APRON SHALL BE PROVIDED AS PER THE SPECIFICATION/DETAILS MENTIONED IN PLATE-22 OF IRC:SP:13-2004.
- DISCREPANCY IF ANY IS TO BE IMMEDIATELY BROUGHT IN TO THE NOTICE OF ENGINEER FOR NECESSARY MODIFICATION IN THE DRAWING.
- 100mm  $\phi$  PVC WEEP HOLES SPACED AT 1000c/c BOTH HORIZONTALLY AND VERTICALLY SHALL BE PROVIDED IN RETAINING WALL.
- 600mm THK. FILTER MEDIA SHALL BE PROVIDED BEHIND RETAINING WALL.
- ALL LEVELS SHOWN IN THIS DRAWING SHOULD BE VERIFIED AT SITE WITH RESPECT TO PLAN & PROFILE BEFORE EXECUTION OF WORK.

## LEGEND:-

FRL	-	FINISHED ROAD LEVEL
GL.	-	GROUND LEVEL
LVL.	-	LEVEL
IL	-	INVERT LEVEL

TABLE-1 SCHEDULE OF BOX CULVERT

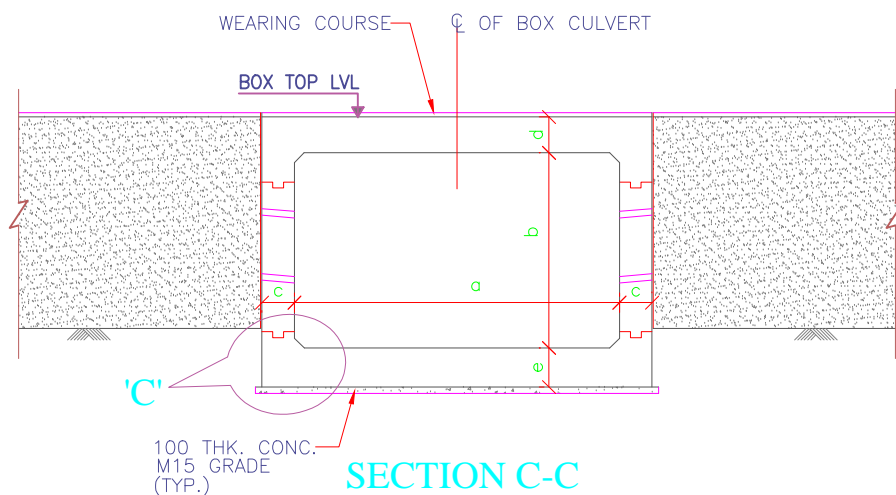
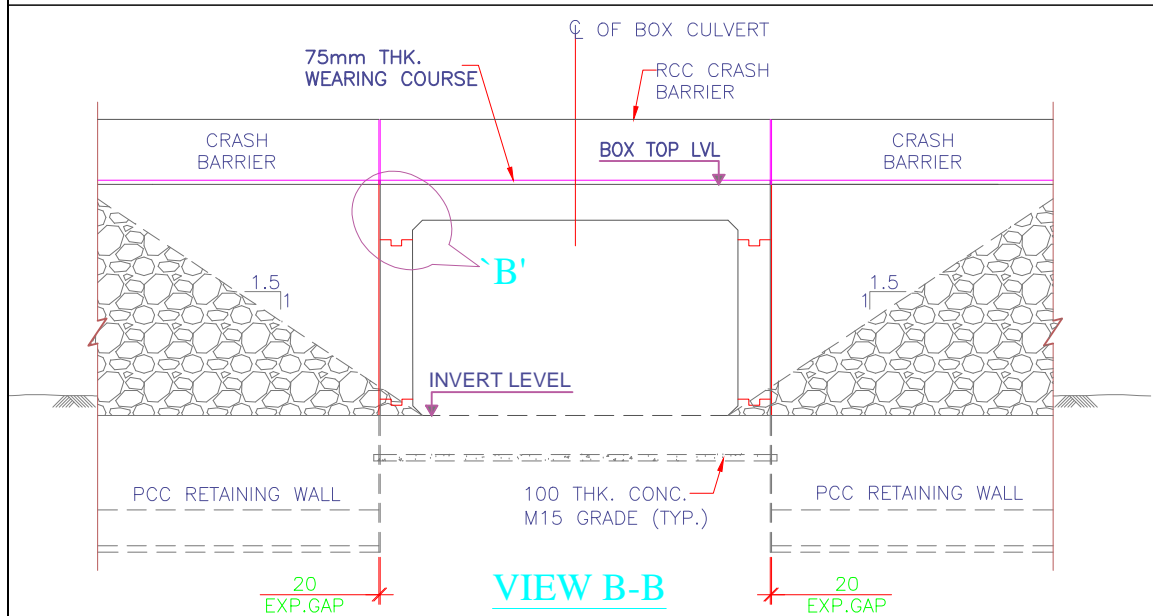
S.No	DESIGN CH: SCHEDULE	PROPOSAL	DIRECTION OF FLOW	SKEW ANGLE	TYPE	PROPOSED DETAILS				
						DIMENSION DETAILS OF BOX				
						a	b	c	d	e
1		NEW CONSTRUCTION	R TO L	0°	BOX	2000	2000	300	300	325

TABLE-2 DIMENSION DETAILS OF PCC RETURN WALL

S. No.	DIMENSION DETAILS(mm)					
	R0	R1	R2	RH	RH1	RH2
1	3450	500	2950	4300	600	3700

GENERAL ARRANGEMENT DRAWING FOR BOX CULVERT AT CH.

41+725, 41+930, 42+420, 42+610, 43+100, 43+400, 43+750, 44+000, 44+600, 44+980, 45+300, 45+700, 45+900, 46+470, 46+650, 46+850, 47+080, 47+500, 47+680, 48+200, 48+500, 48+650, 48+800, 49+200, 49+410, 49+920, 50+200, 50+700, 50+900, 51+500, 51+900, 52+170, 52+280



:- CONSULTANTS :-

**L.N. MALVIYA INFRA PROJECTS PVT. LTD.**

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E-mail : lninfra@projects@gmail.com

:- CLIENT :-

**NATIONAL HIGHWAYS INFRASTRUCTURE  
DEVELOPMENT CORPORATION LIMITED (NHIDCL)**



DRG. NO. :

DESIGNED BY.

APPROVED BY.

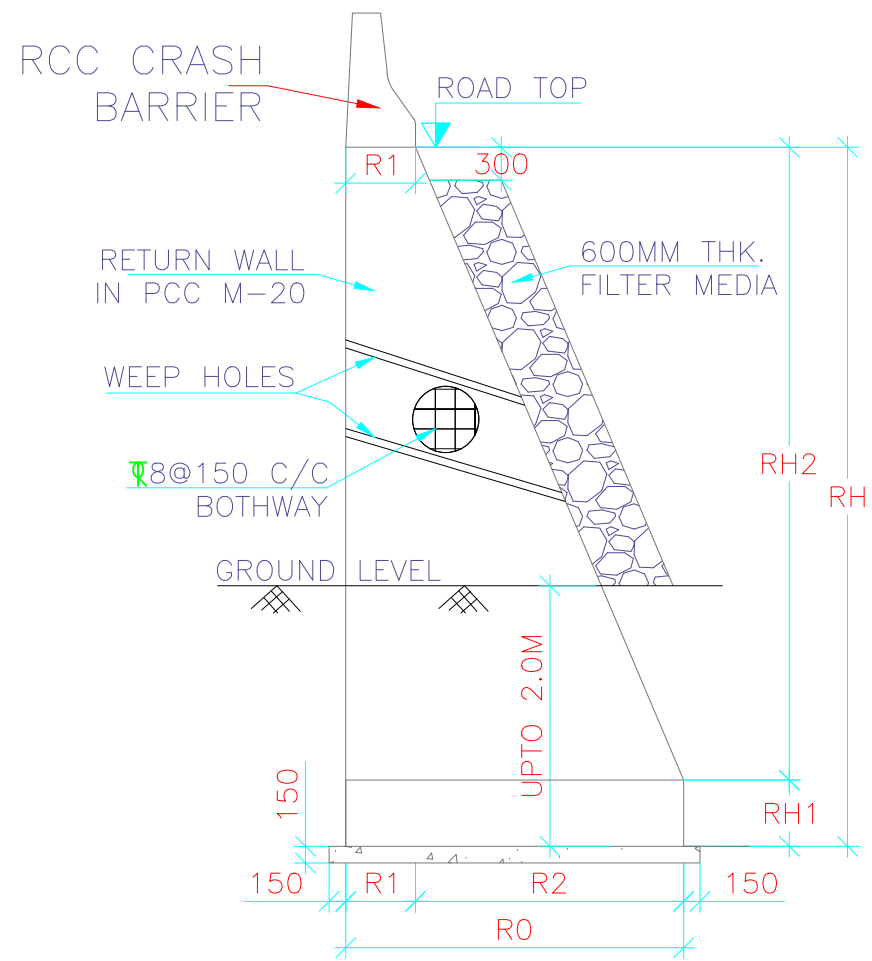
:- PROJECT TITLE :-

Consultancy Services for Preparation of Feasibility Study  
and Detailed Project Report For Two lane With Paved  
Shoulders of Tamenglong Haflong Road In The State of  
Manipur on EPC Mode.

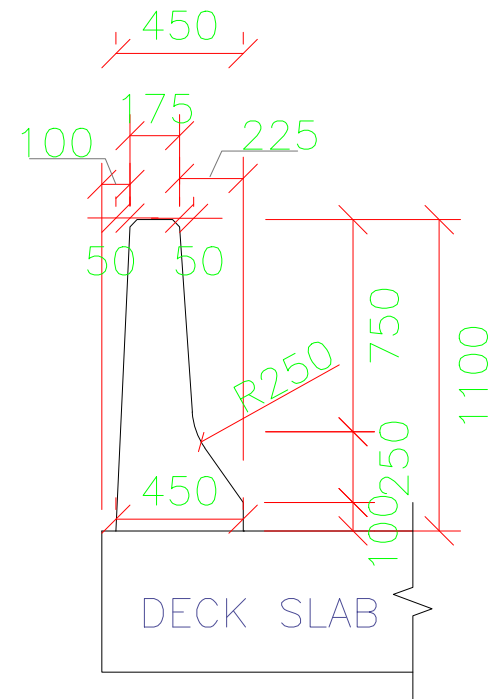
:-General Arrangement Drawing:-

GAD Box-1X2X2

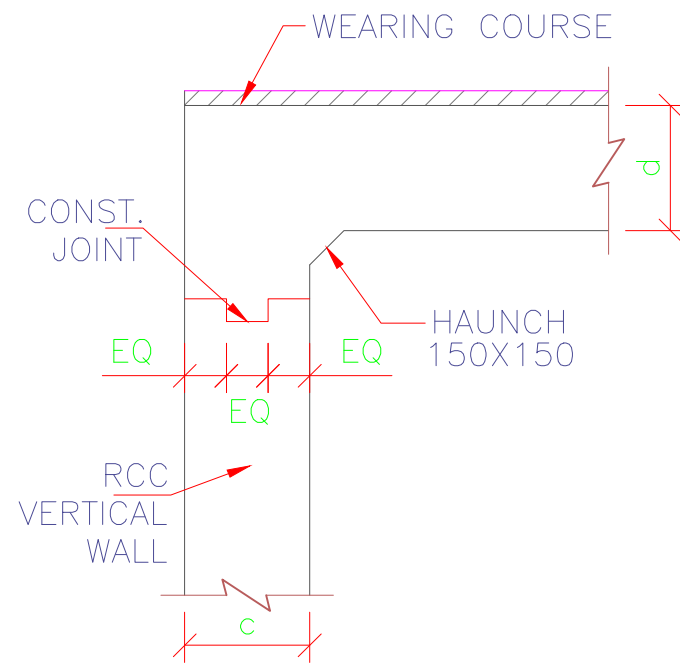
**AZURAM- MAKRU RIVER SECTION  
(PACKAGE-5)**



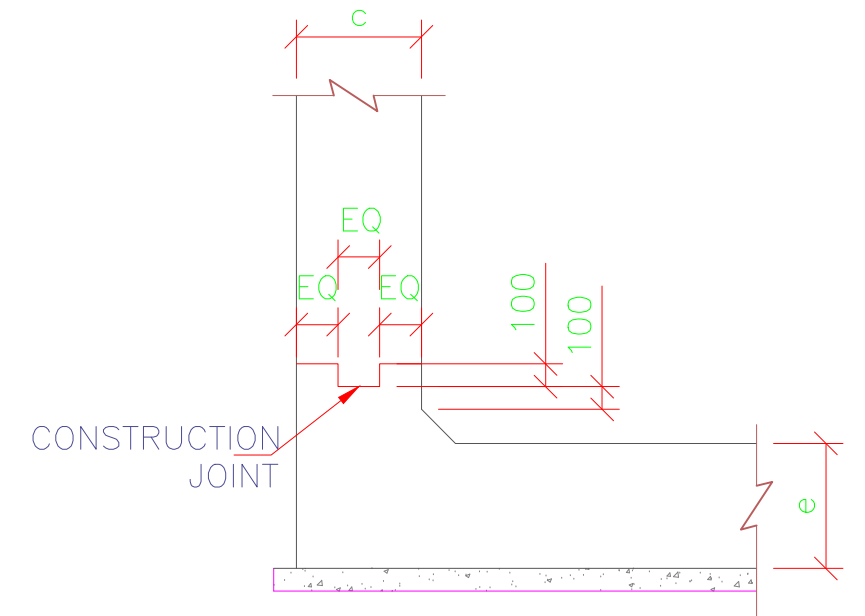
DETAIL OF PCC RETAINING WALL



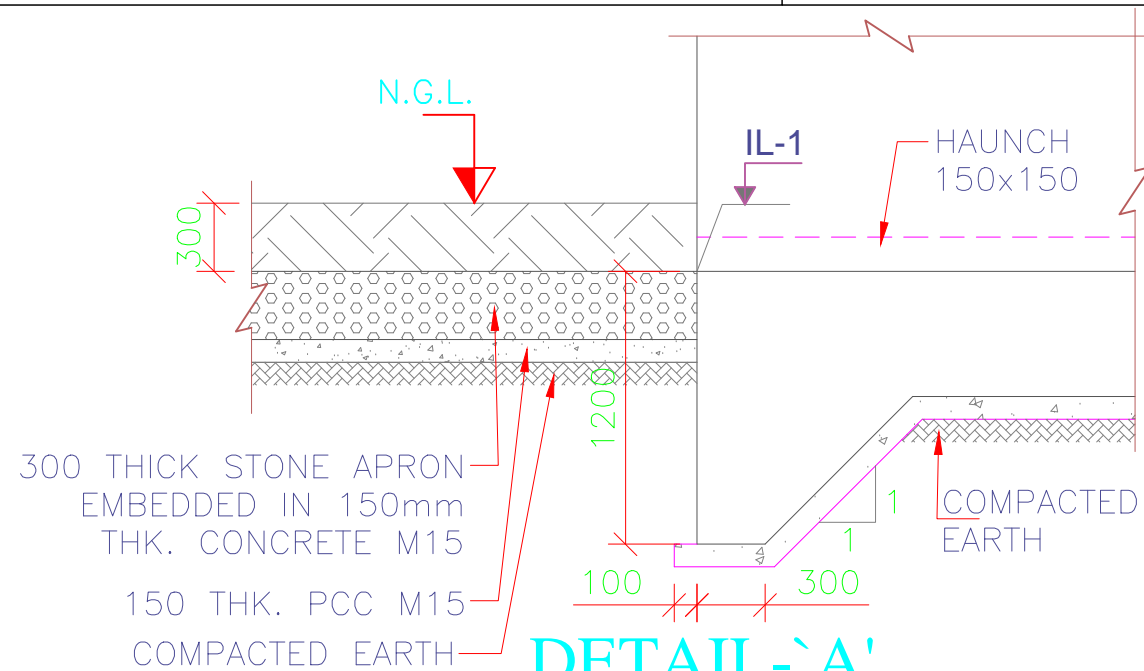
CRASH BARRIER DIMENSIONS



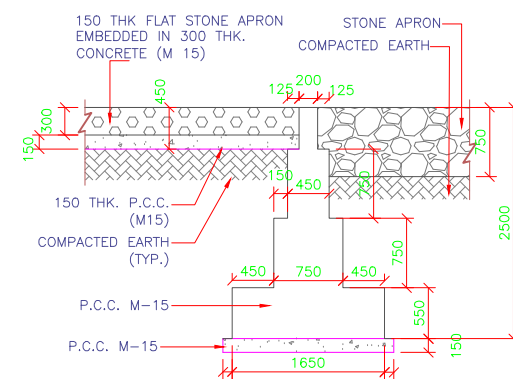
DETAIL-'B'



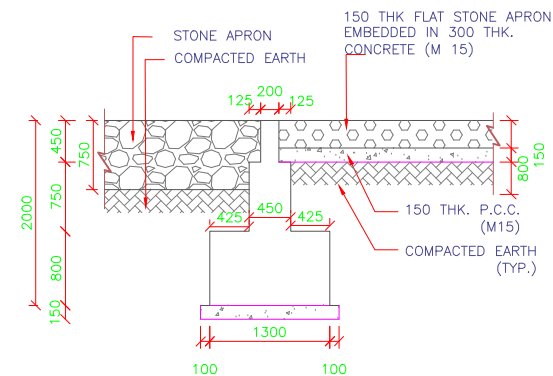
DETAIL-'C'



DETAIL-'A'



DETAIL OF CURTAIN WALL TYPE-I



DETAIL OF CURTAIN WALL TYPE-II

:- CONSULTANTS :-

L.N. MALVIYA INFRA PROJECTS PVT. LTD.

T-10, III FLOOR, CITY CENTER, PRESS COMPLEX, PLOT NO.-1,  
M.P. NAGAR, ZONE-I, BHOPAL (M.P.)



Tel./Fax : 0755-4295421,  
Mob.: 09826452711, 09977004686  
E-mail : lninfra@projects@gmail.com

:- CLIENT :-

NATIONAL HIGHWAYS INFRASTRUCTURE  
DEVELOPMENT CORPORATION LIMITED (NHIDCL)



DRG. NO. :

DESIGNED BY.

APPROVED BY.

:- PROJECT TITLE :-

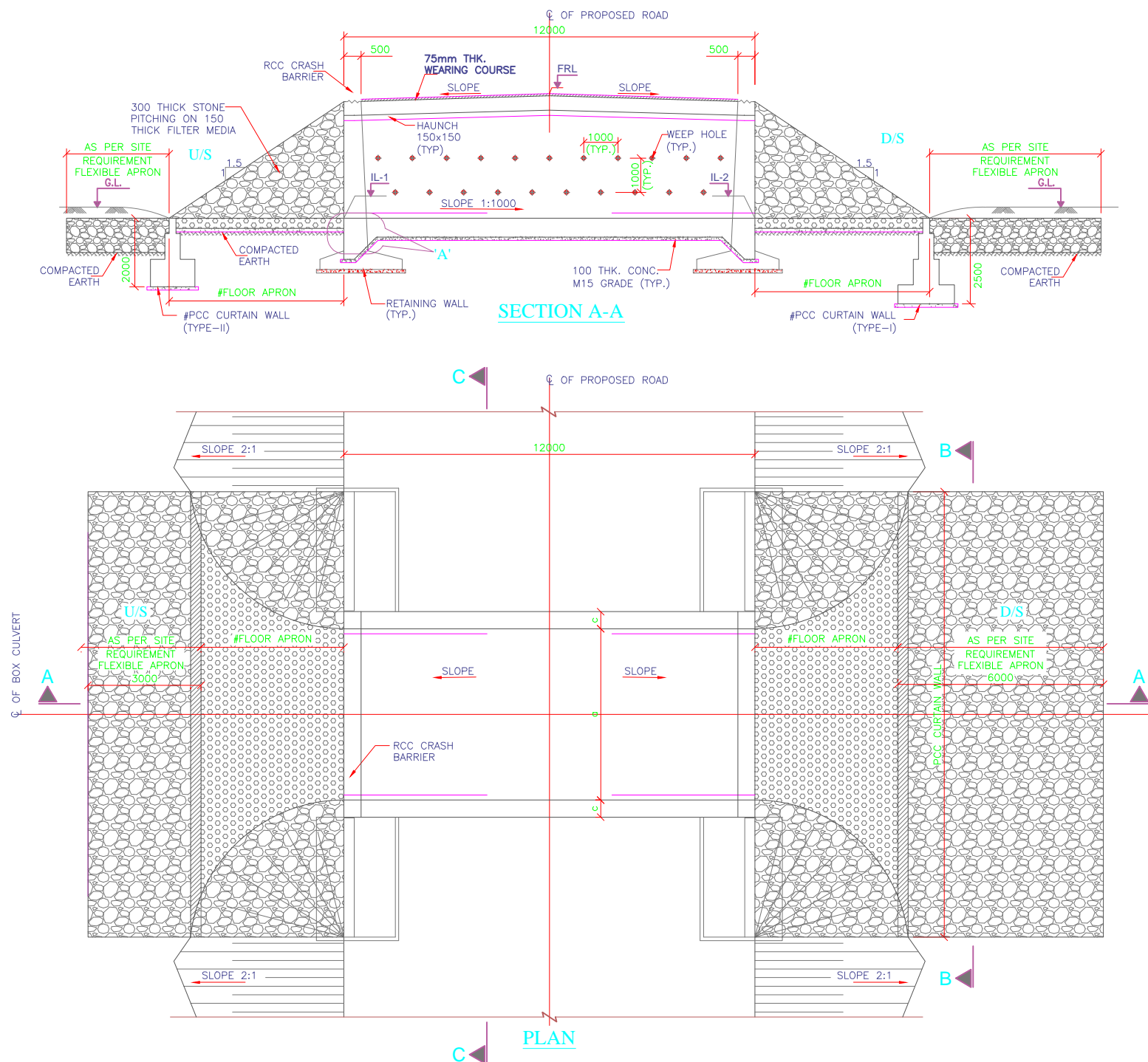
Consultancy Services for Preparation of Feasibility Study  
and Detailed Project Report For Two lane With Paved  
Shoulders of Tamenglong Haflong Road In The State of  
Manipur on EPC Mode.

:-General Arrangement Drawing:-

BOX CULVERT

AZURAM MAKRU RIVER SECTION  
Span 1No. 2x2  
(PACKAGE-5)





## NOTES:-

- ALL DIMENSIONS ARE IN MILLIMETER AND LEVELS ARE IN METER UNLESS MENTIONED OTHERWISE.
- DIMENSIONS ARE NOT TO BE SCALED, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
- THE SAFE BEARING CAPACITY ASSUMED IN THE DESIGN IS  $10\text{ T/M}^2$ . THIS SBC SHOULD BE VERIFIED AT SITE BEFORE EXECUTION. ANY VARIATION ON SITE SHOULD BE INFORMED TO THE DESIGN ENGINEER FOR NECESSARY ACTION.
- GRADE OF UNTENSIONED STEEL SHALL BE Fe 500, CONFIRMING TO IS:1786.
- CONCRETE SHALL BE OF DESIGN MIX AND SHALL HAVE MINIMUM 28 DAYS CHARACTERISTIC CUBE STRENGTH AS FOLLOWS:-
  - (i) RCC BOX..... M25
  - (ii) RCC CRASH BARRIER..... M40
  - (iii) RETAINING WALL..... M30
  - (iv) PCC LEVELING COURSE.... M15
- THE RCC BOX SHOULD BE CONSTRUCTED FIRST AND THE SIDE FILLING & COMPACTION SHALL BE DONE AS PER MoRTH SPECIFICATIONS.
- THE BACKFILL MATERIAL BEHIND RCC BOX/RETAINING WALL SHALL HAVE FOLLOWING PROPERTIES  $\phi=30^\circ$ ,  $\gamma=2.0\text{ T/Cum}$
- DETAIL OF CAMBER/SUPER ELEVATION MAY BE VERIFIED WITH LATEST PLAN AND PROFILE DRAWING.
- FLOW DIRECTION SHOWN IN THE DRAWING IS INDICATIVE ONLY. BED PROTECTION FOR UPSTREAM AND DOWN STREAM SHALL BE BASED ON THE FLOW DIRECTION IN SITE.
- FLEXIBLE APRON SHALL BE PROVIDED AS PER THE SPECIFICATION/DETAILS MENTIONED IN PLATE-22 OF IRC:SP:13-2004.
- DISCREPANCY IF ANY IS TO BE IMMEDIATELY BROUGHT IN TO THE NOTICE OF ENGINEER FOR NECESSARY MODIFICATION IN THE DRAWING.
- 100mm  $\phi$  PVC WEEP HOLES SPACED AT 1000c/c BOTH HORIZONTALLY AND VERTICALLY SHALL BE PROVIDED IN RETAINING WALL.
- 600mm THK. FILTER MEDIA SHALL BE PROVIDED BEHIND RETAINING WALL.
- ALL LEVELS SHOWN IN THIS DRAWING SHOULD BE VERIFIED AT SITE WITH RESPECT TO PLAN & PROFILE BEFORE EXECUTION OF WORK.

## LEGEND:-

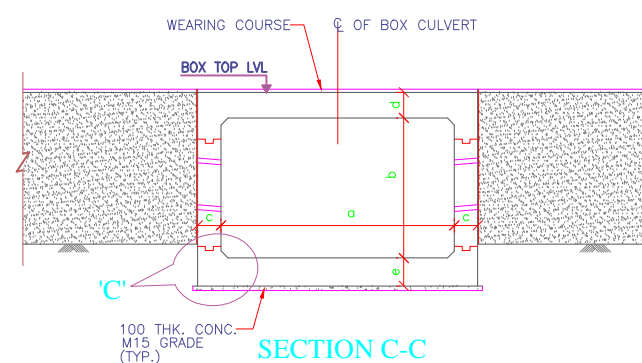
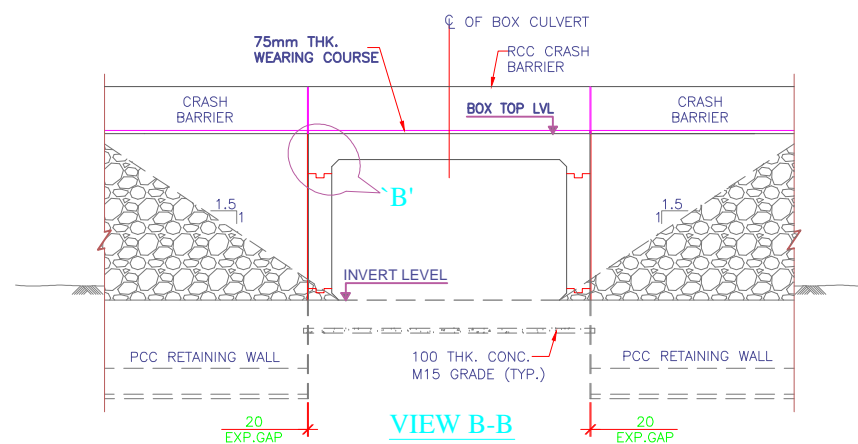
FRL	-	FINISHED ROAD LEVEL
GL.	-	GROUND LEVEL
LVL.	-	LEVEL
IL	-	INVERT LEVEL

TABLE-1 SCHEDULE OF BOX CULVERT

S. No.	DESIGN CH: SCHEDULE	PROPOSAL	DIRECTION OF FLOW	SKEW ANGLE	PROPOSED DETAILS					
					TYPE	DIMENSION DETAILS OF BOX				
						a	b	c	d	e
1		NEW CONSTRUCTION	R TO L	0°	BOX	3000	3000	420	420	420

TABLE-2 DIMENSION DETAILS OF PCC RETURN WALL

S. No.	DIMENSION DETAILS(mm)					
	R0	R1	R2	RH	RH1	RH2
1	4450	500	3950	5170	600	4570



-: CONSULTANTS :-

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Tel./Fax : 0755-4295421,  
Mob.: 09826452711, 09977004686  
E-mail : [lninfraprojects@gmail.com](mailto:lninfraprojects@gmail.com)

-: CLIENT :-

**NATIONAL HIGHWAYS INFRASTRUCTURE  
DEVELOPMENT CORPORATION LIMITED (NHIDCL)**



DRG. NO. :

DESIGNED BY.

APPROVED BY.

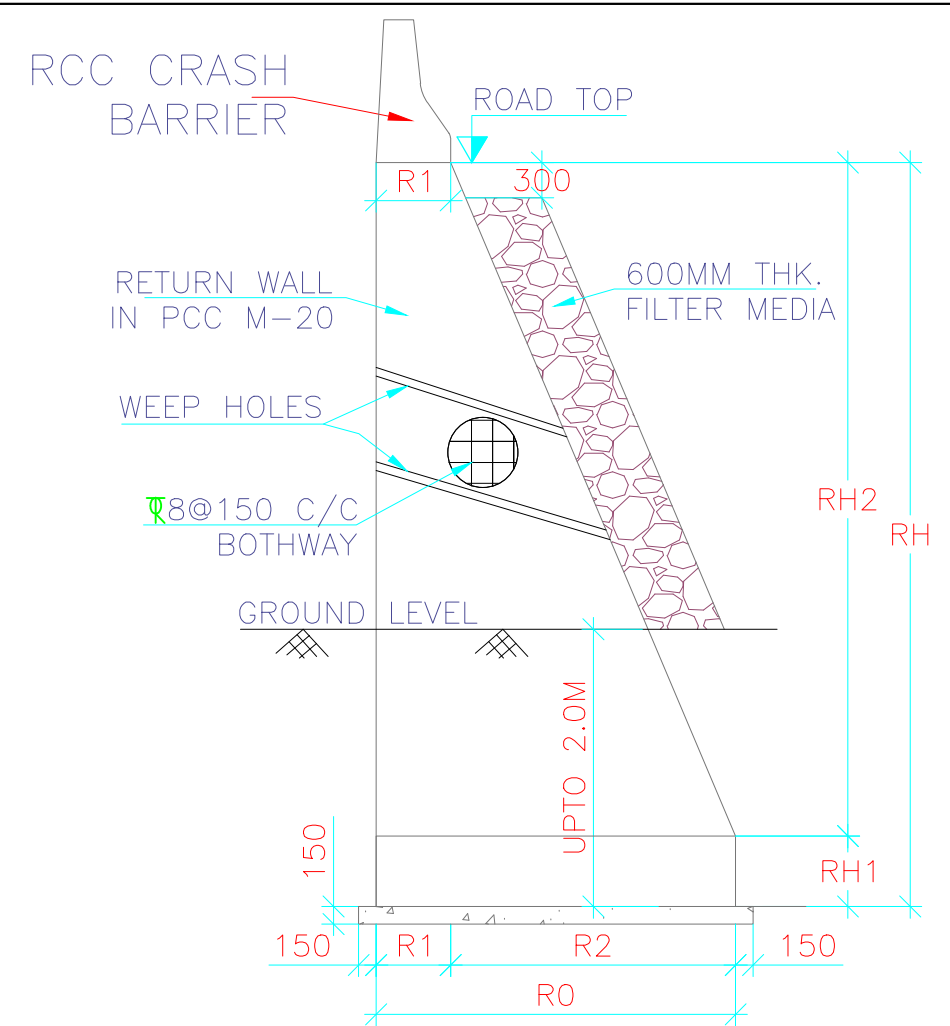
-: PROJECT TITLE :-

Consultancy Services for Preparation of Feasibility Study  
and Detailed Project Report For Two lane With Paved  
Shoulders of Tamenglong Haflong Road In The State of  
Manipur on EPC Mode.

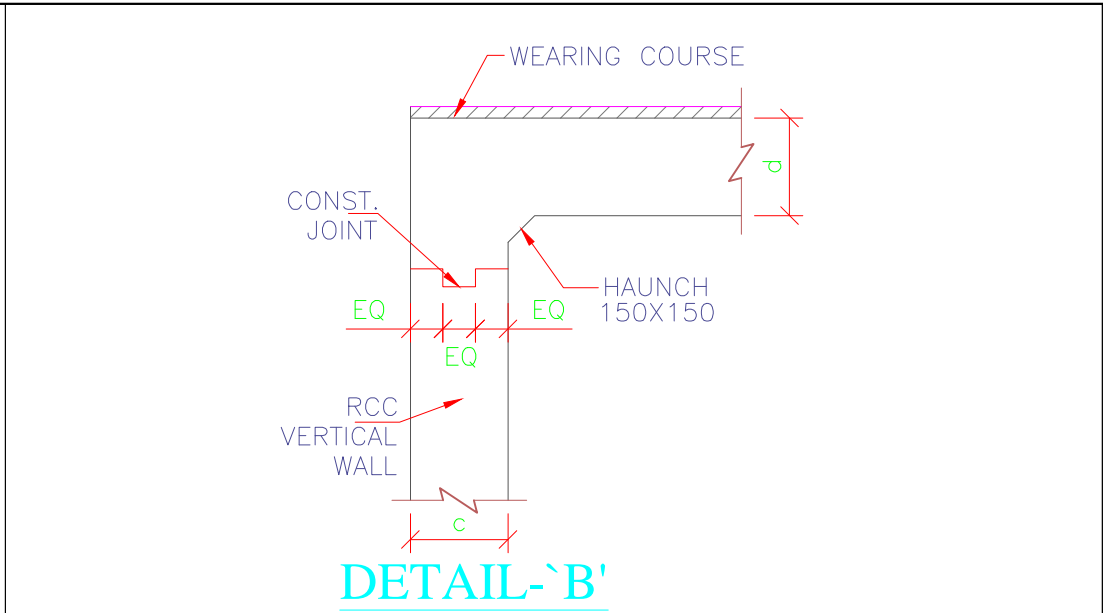
-:General Arrangement Drawing:-

BOX CULVERT Span-1No. 3X3

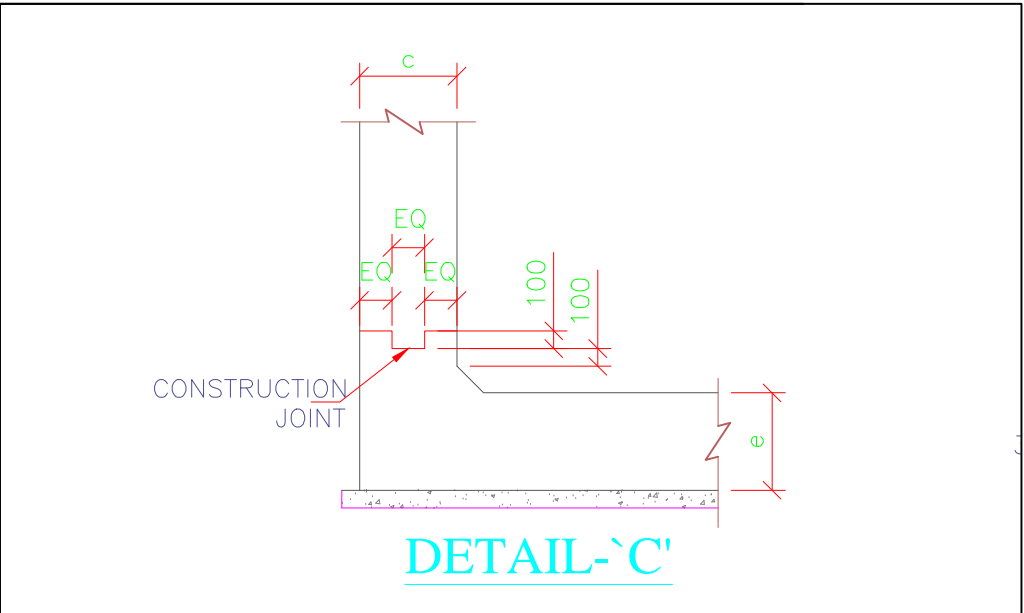
**AZURAM-MAKRU RIVER SECTION  
(PACKAGE-5)**



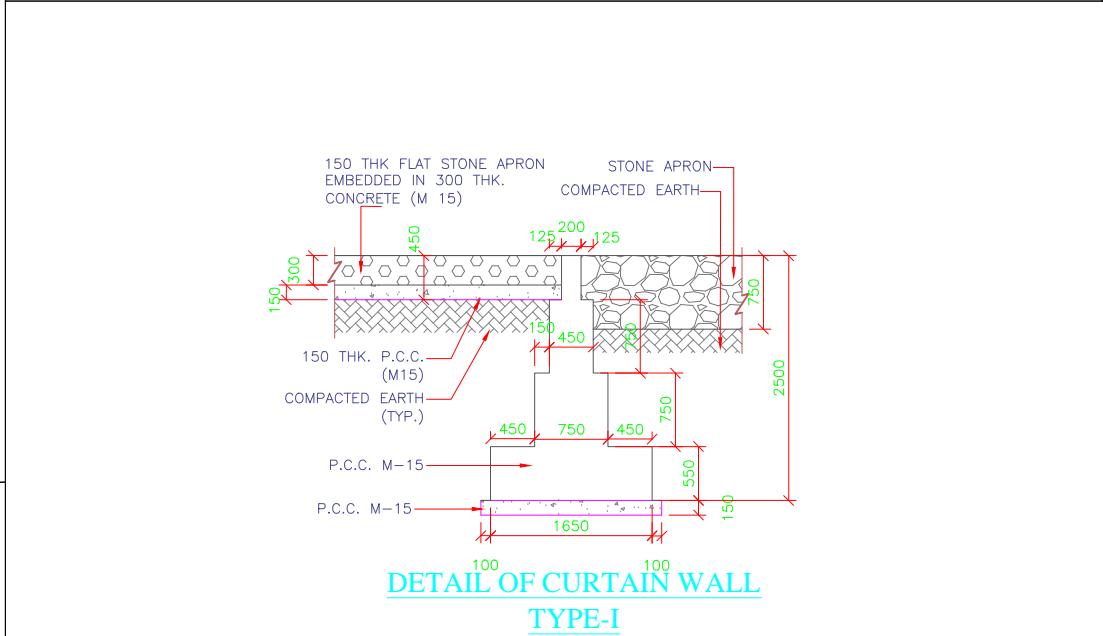
**DETAIL OF PCC RETAINING WALL**



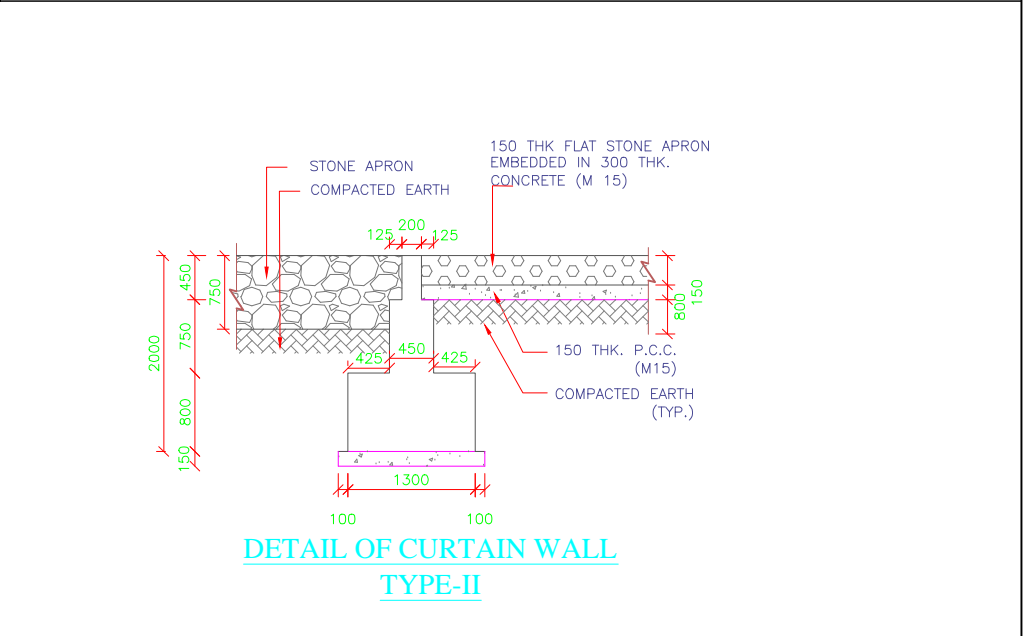
**DETAIL-'B'**



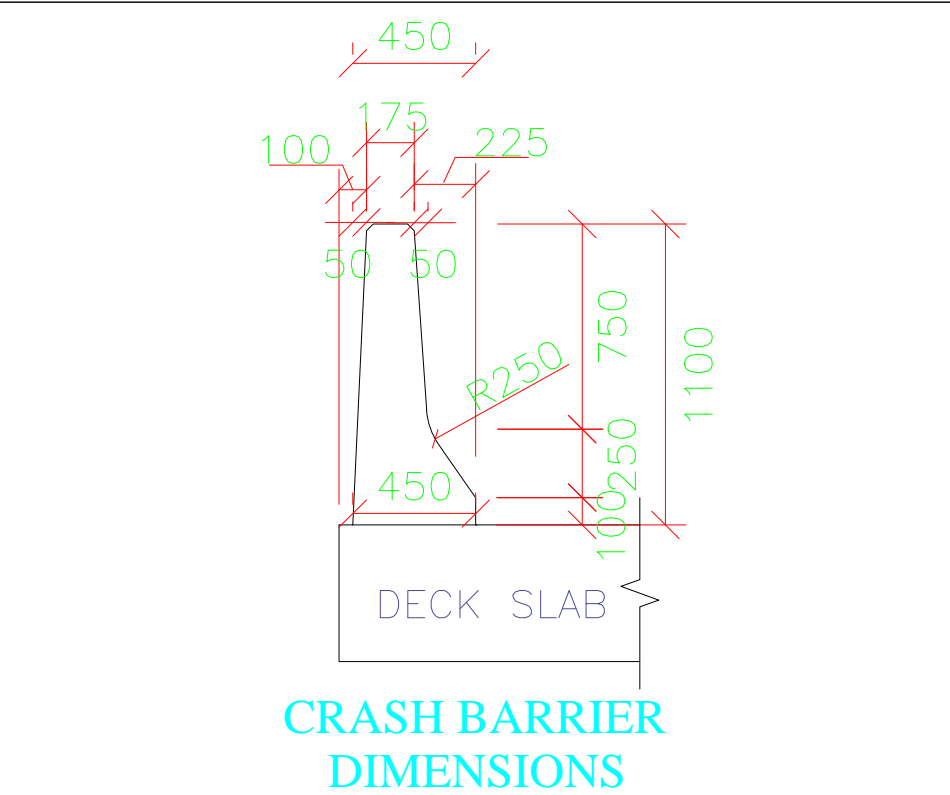
**DETAIL-'C'**



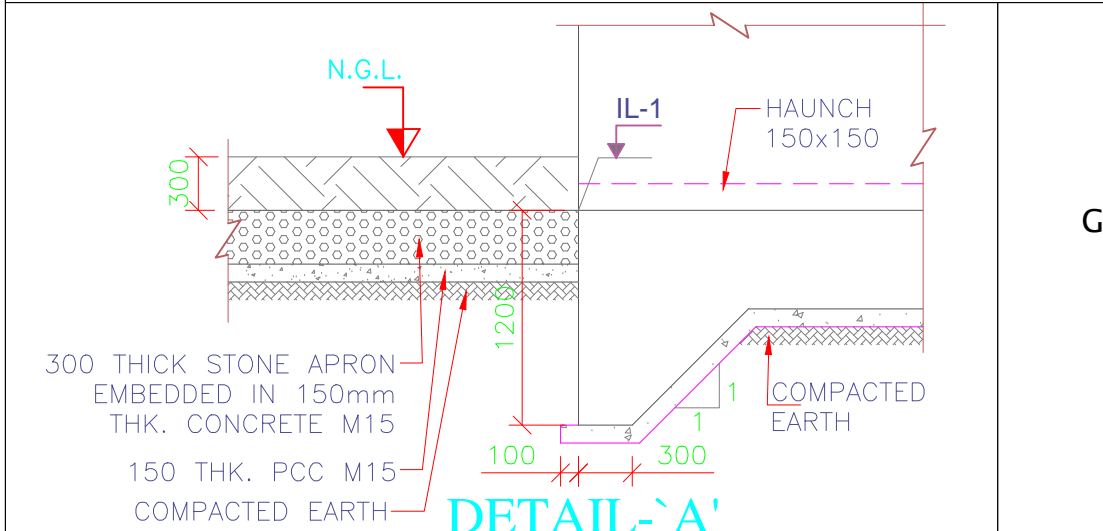
**DETAIL OF CURTAIN WALL TYPE-I**



**DETAIL OF CURTAIN WALL TYPE-II**



**CRASH BARRIER DIMENSIONS**

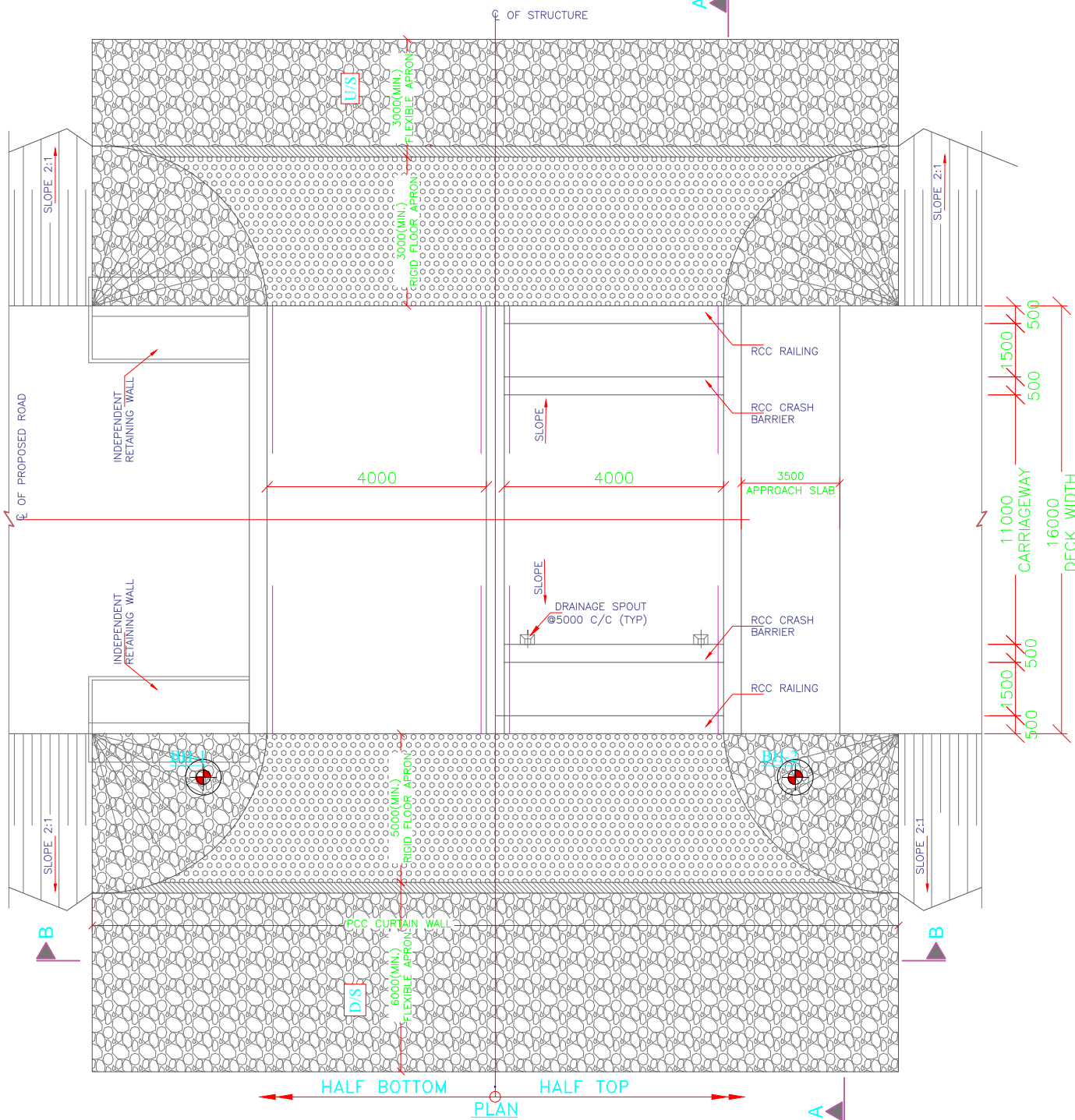
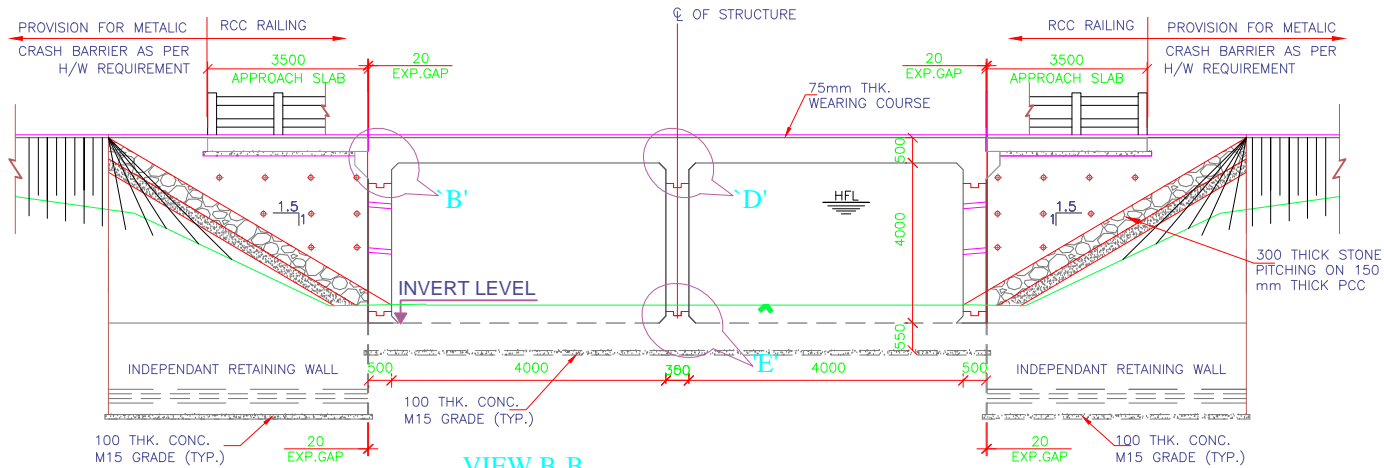


**DETAIL-'A'**

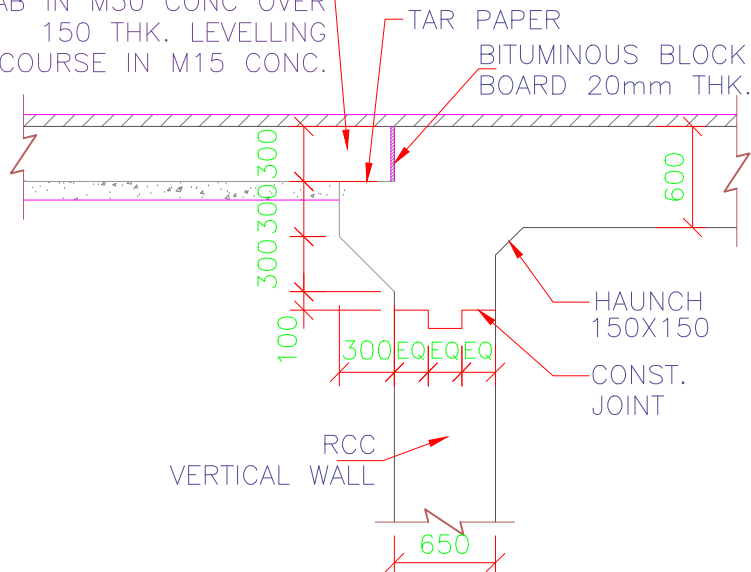
**GENERAL ARRANGEMENT DRAWING FOR BOX CULVERT AT CH.**  
**52+050,52+375,52+450,52+850,53+125,53+425,53+525,54+800,**  
**54+000,54+200,54+400,54+600,54+800,54+910,55+200,**

-: CONSULTANTS :-		-: CLIENT :-		DRG. NO. :	DESIGNED BY.	APPROVED BY.	-: PROJECT TITLE :-	-:General Arrangement Drawing:-
<b>L.N. MALVIYA INFRA PROJECTS PVT. LTD.</b> T-10, III FLOOR, CITY CENTER, PRESS COMPLEX, PLOT NO.-1, M.P. NAGAR, ZONE-I, BHOPAL (M.P.)		<b>NATIONAL HIGHWAYS INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (NHIDCL)</b>					Consultancy Services for Preparation of Feasibility Study and Detailed Project Report For Two lane With Paved Shoulders of Tamenglong Haflong Road In The State of Manipur on EPC Mode.	<b>BOX CULVERT</b> Span-1No. 3X3  <b>AZURAM-MAKRU RIVER SECTION</b> <b>(PACKAGE-5)</b>

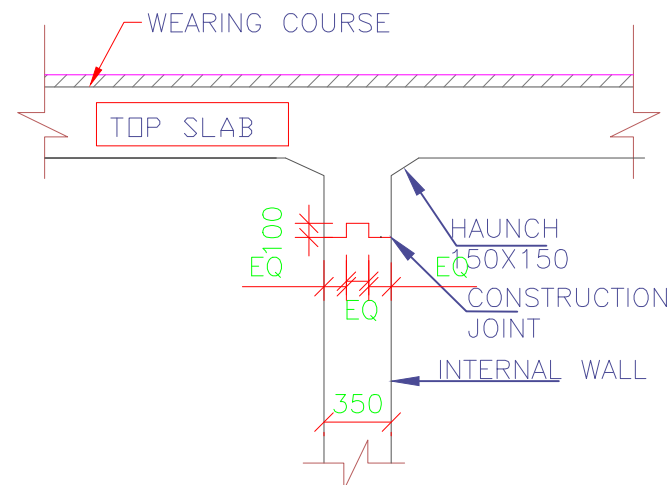




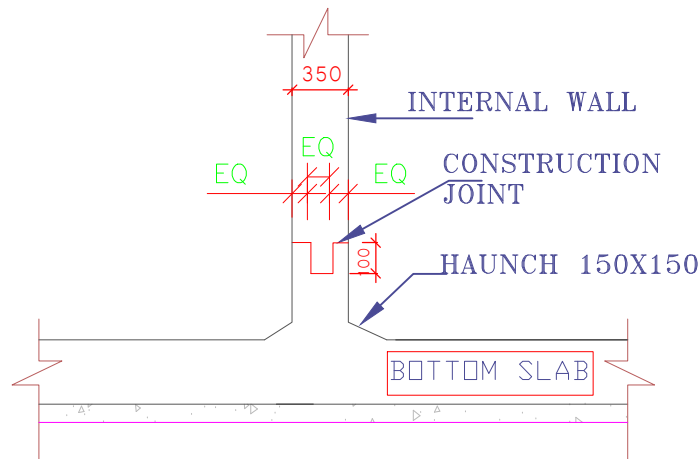
300 THK. RCC APPROACH SLAB IN M30 CONC OVER 150 THK. LEVELLING COURSE IN M15 CONC.



DETAIL-'B'



DETAIL-'D'



DETAIL-'E'

NOTES:-

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- DIMENSIONS ARE NOT TO BE SCALED, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
- THE SAFE BEARING CAPACITY ASSUMED IN THE DESIGN IS 15T/M<sup>2</sup>. THIS SBC SHOULD BE VERIFIED AT SITE BEFORE EXECUTION. ANY VARIATION ON SITE SHOULD BE INFORMED TO THE DESIGN ENGINEER FOR NECESSARY ACTION.
- GRADE OF UNTENSIONED STEEL SHALL BE Fe 500, CONFIRMING TO IS:1786.
- CONCRETE SHALL BE OF DESIGN MIX AND SHALL HAVE MINIMUM 28 DAYS CHARACTERISTIC CUBE STRENGTH AS FOLLOWS:-
  - RCC BOX .....M30
  - RCC CRASH BARRIER/RAILING.....M40
  - RCC RETAINING WALL.....M30
  - PCC LEVELLING COURSE.....M15
- THE RCC BOX SHOULD BE CONSTRUCTED FIRST AND THE SIDE FILLING & COMPACTION SHALL BE DONE AS PER MoRTH SPECIFICATIONS.
- THE BACKFILL MATERIAL BEHIND RCC BOX/RETAINING WALL SHALL HAVE FOLLOWING PROPERTIES  $\phi=30^\circ$ ,  $\gamma=2.0$  T/Cum
- DETAIL OF CAMBER/SUPER ELEVATION MAY BE VERIFIED WITH LATEST PLAN AND PROFILE DRAWING.
- FLOW DIRECTION SHOULD BE VERIFIED ON SITE BEFORE EXECUTION OF WORK. BED PROTECTION FOR UPSTREAM AND DOWN STREAM SHALL BE BASED ON THE FLOW DIRECTION IN SITE.
- FLEXIBLE APRON SHALL BE PROVIDED AS PER THE SPECIFICATION/DETAILS MENTIONED IN PLATE-22 OF IRC:SP:13-2004.
- DISCREPANCY IF ANY IS TO BE IMMEDIATELY BROUGHT IN TO THE NOTICE OF ENGINEER FOR NECESSARY MODIFICATION IN THE DRAWING.
- 100mm $\phi$  PVC WEEP HOLES SPACED AT 1000c/c BOTH HORIZONTALLY AND VERTICALLY SHALL BE PROVIDED IN RETAINING WALL.
- 600mm THK. FILTER MEDIA SHALL BE PROVIDED BEHIND RETAINING WALL.
- ALL LEVELS SHOWN IN THIS DRAWING SHOULD BE VERIFIED AT SITE RESPECT TO PLAN & PROFILE BEFORE EXECUTION OF WORK.
- DIMENSIONS OF STRUCTURE ARE TENTATIVE AND SUBJECTED TO CHANGE ON DETAIL DESIGN.
- SHEAR KEY & CURTAIN WALL ARE NOT REQUIRED IF HARD ROCK IS FOUND AT GROUND LEVEL.

LEGEND:-

FRL	-	FINISHED ROAD LEVEL
GL.	-	GROUND LEVEL
LVL.	-	LEVEL
IL	-	INVERT LEVEL
FL	-	FOUNDING LEVEL
MSL	-	MAXIMUM SCOUR LEVEL
BH	-	BORE HOLE
*	-	AS PER HIGHWAY PROFILE
	-	BORE HOLE LOCATION

-: CONSULTANTS :-

**L.N. MALVIYA INFRA PROJECTS PVT. LTD.**

T-10, III FLOOR, CITY CENTER, PRESS COMPLEX, PLOT NO.-1, M.P. NAGAR, ZONE-I, BHOPAL (M.P.)



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-: CLIENT :-

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DRG. NO. :

DESIGNED BY.

APPROVED BY.

-: PROJECT TITLE :-

Consultancy Services for Preparation of Feasibility Study and Detailed Project Report For Two lane With Paved Shoulders of Tamenglong - Dialong - Old Tamenglong Road In The State of Manipur on EPC Mode.

-:General Arrangement Drawing:-

BOX CULVERT Span-2No. X4X4

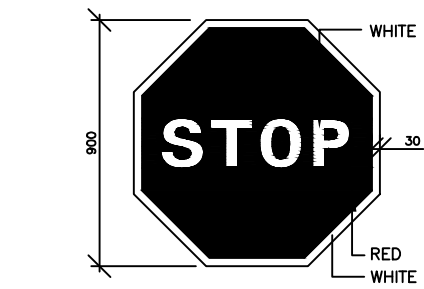
**AZURAM- MAKRU RIVER SECTION (PACKAGE-5)**





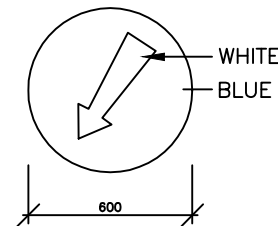


# **TRAFFIC SIGNS & MISC DRAWINGS**



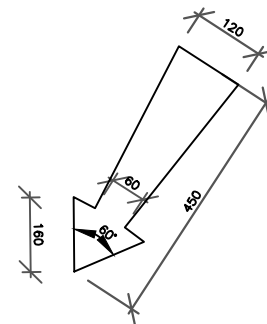
STOP  
FOR CENTRAL ISLAND STOP SIGN  
SIZE SHALL BE OF 600

S-1

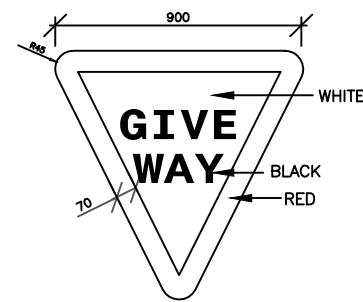


COMPULSORY  
KEEP LEFT

S-2

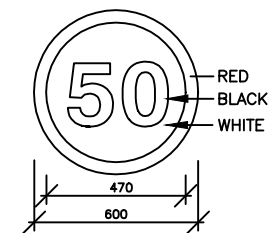


SCALE 1:100



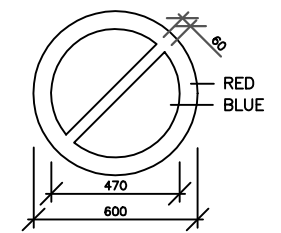
GIVE WAY

S-3



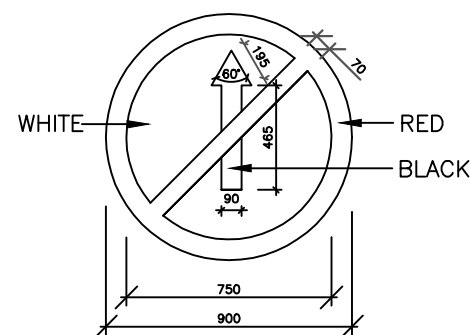
SPEED LIMIT

S-4



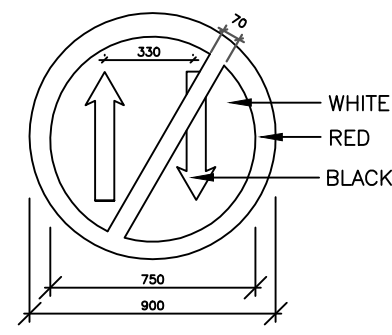
NO PARKING

S-5



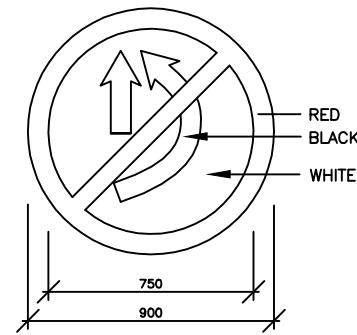
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S-6



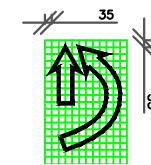
ONE WAY SIGN

S-7



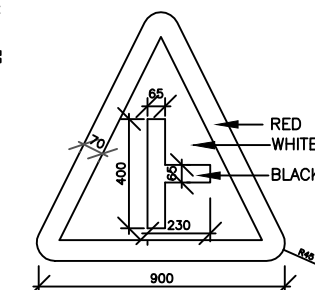
OVER TAKING PROHIBITED

S-8



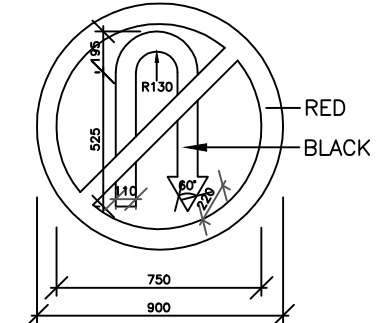
SIDEROAD (RIGHT)

S-9



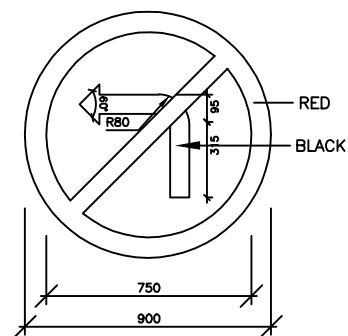
SIDEROAD (LEFT)

S-9



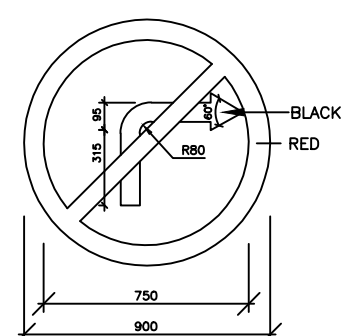
U - TURN PROHIBITED

S-9A



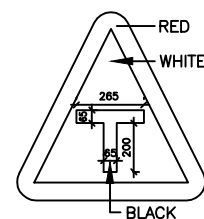
LEFT TURN PROHIBITED

S-10



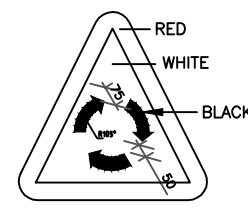
RIGHT TURN PROHIBITED

S-10



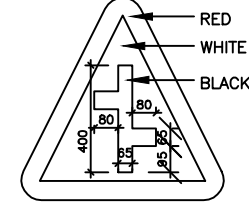
T - INTERSECTION

S-11



ROUND ABOUT

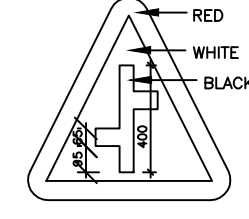
S-12



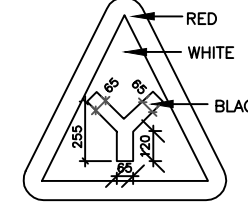
RIGHT

STAGGERED INTERSECTIONS

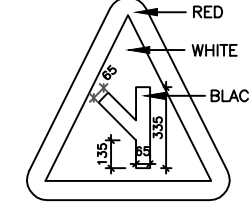
S-13



LEFT



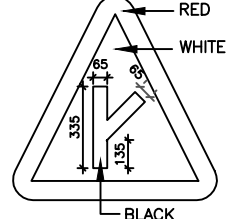
'Y'



LEFT

'Y' INTERSECTIONS

S-14

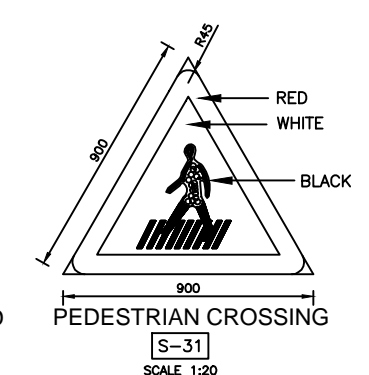
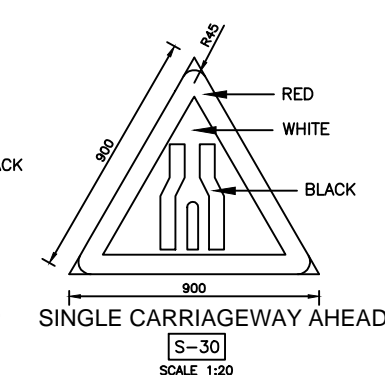
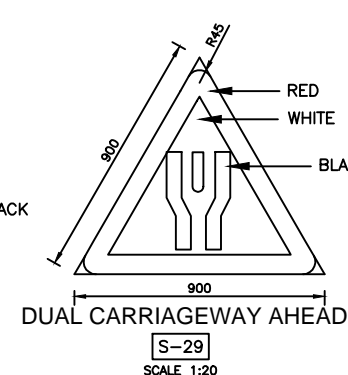
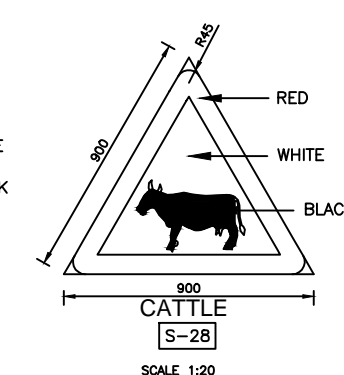
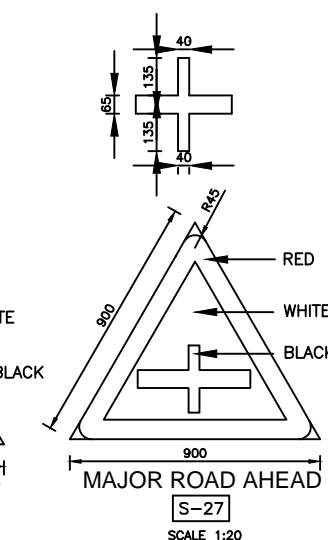
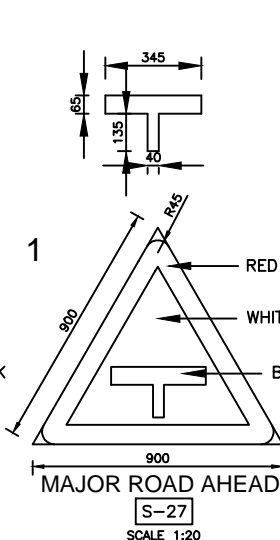
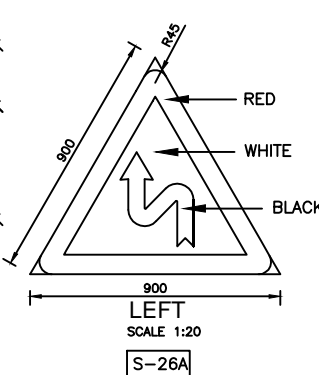
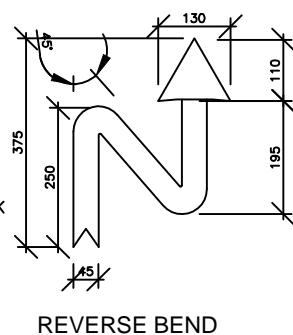
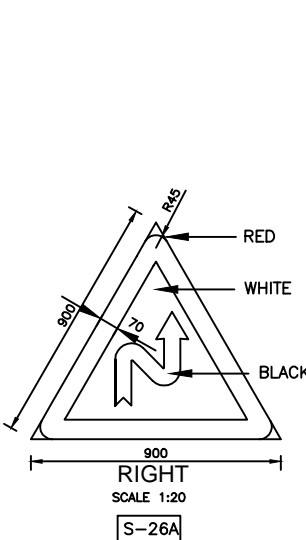
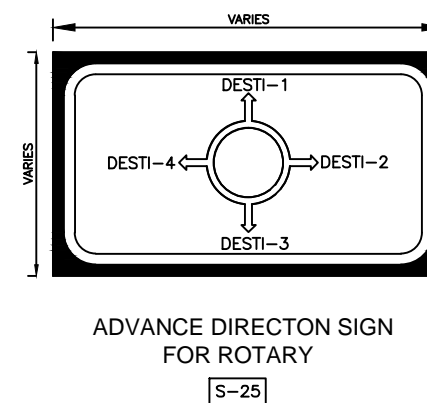
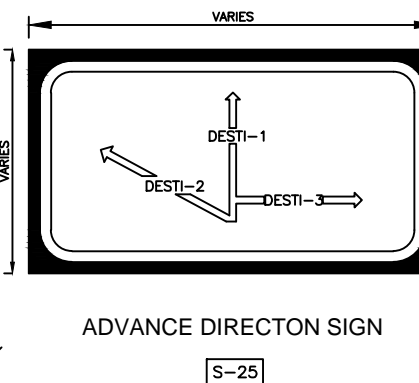
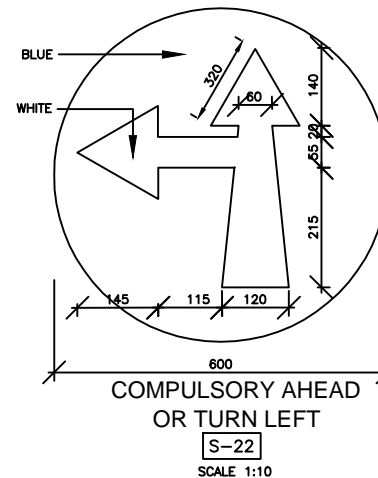
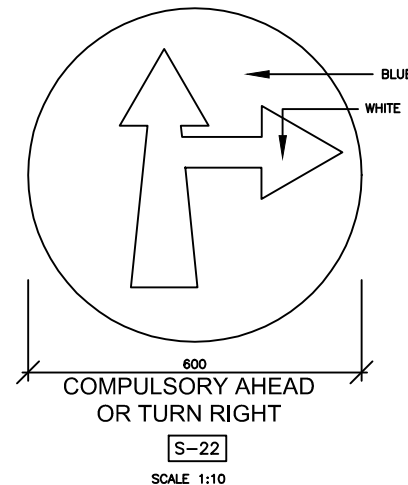
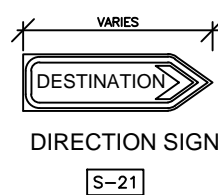
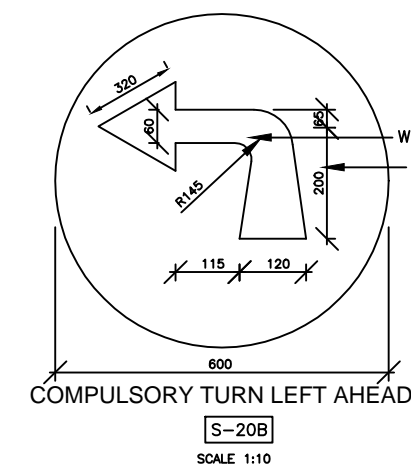
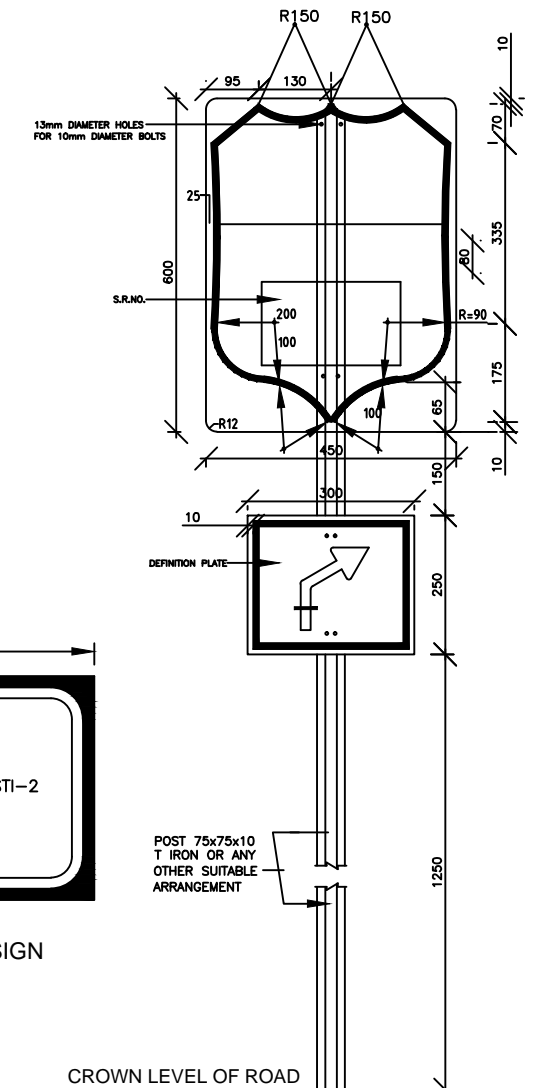
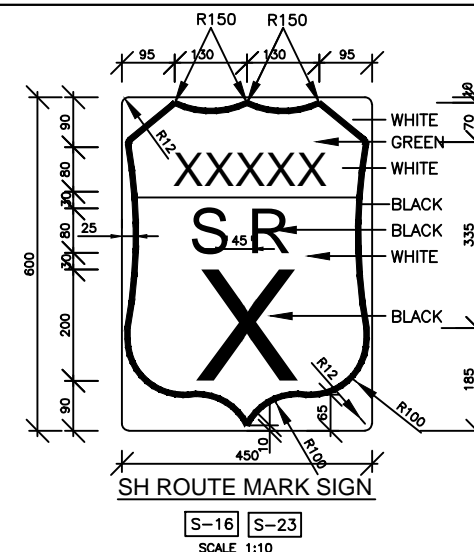
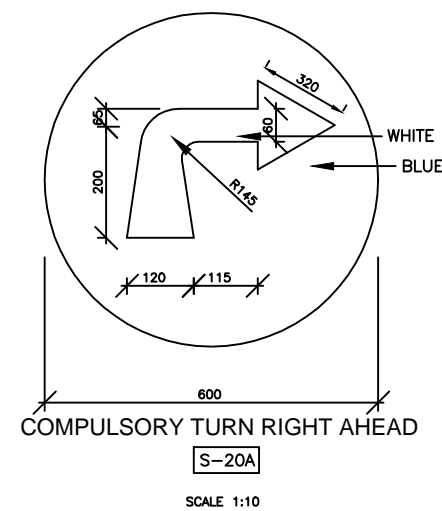
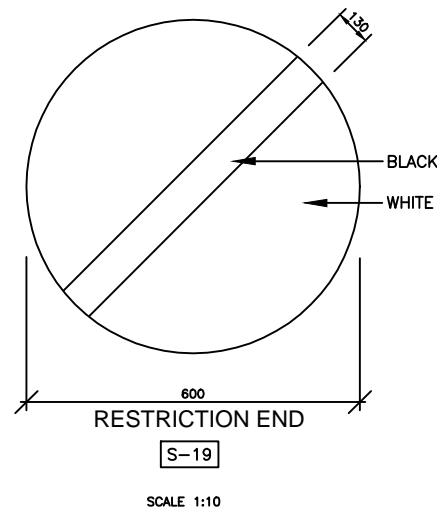
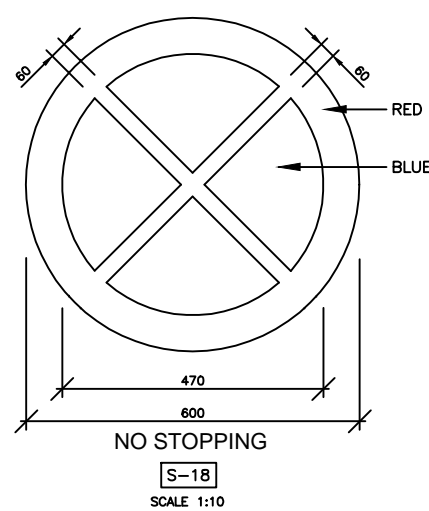
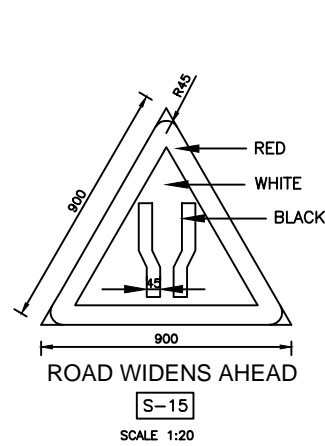


RIGHT

Notes :

1. ALL THE DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE SPECIFIED.
2. RETROREFLECTORISED SHEETING SHALL BE CONFORMING TO ASTM D-4956-01, TYPE VIII OR TYPE IX.
3. SIGNS SHALL BE ERECTED AS PER DRAWING NO. ADB/MPDCSP/PH-II/P-ALL/05

-: CONSULTANTS :-		-: CLIENT :-		DRG. NO. :	DESIGNED BY.	APPROVED BY.	-: PROJECT TITLE :-	-:TRAFFIC SIGNS:-
L.N. MALVIYA INFRA PROJECTS PVT. LTD. T-10, III FLOOR, CITY CENTER, PRESS COMPLEX, PLOT NO.-1, M.P. NAGAR, ZONE-I, BHOPAL (M.P.) Tel./Fax : 0755-4295421, Mob.: 09826452711, 09977004686 E-mail : lninfra@projects@gmail.com		NATIONAL HIGHWAYS INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (NHIDCL)		1			CConsultancy Services for Preparation of Feasibility Study and Detailed Project Report For Two lane With Paved Shoulders of Tamenglong - Haflong Road In The State of Manipur on EPC Mode.	AZURAM- MAKRU RIVER SECTION (PACKAGE-5)



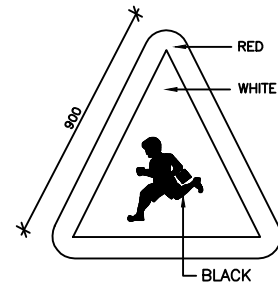
#### Notes :

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2. RETROREFLECTORISED SHEETING SHALL BE CONFORMING TO ASTM D-4956-01, TYPE VIII OR TYPE IX.

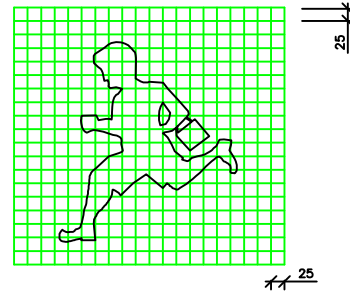
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CONSULTANTS :-	CLIENT :-	DRG. NO. :	DESIGNED BY.	APPROVED BY.	PROJECT TITLE :-	TRAFFIC SIGNS:-
<b>L.N. MALVIYA INFRA PROJECTS PVT. LTD.</b> T-10, III FLOOR, CITY CENTER, PRESS COMPLEX, PLOT NO.-1, M.P. NAGAR, ZONE-I, BHOPAL (M.P.) Tel./Fax : 0755-4295421, Mob.: 09826452711, 09977004686 E-mail : <a href="mailto:lninfra@lninfra.com">lninfra@lninfra.com</a>	<b>NATIONAL HIGHWAYS INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (NHIDCL)</b>	2			Consultancy Services for Preparation of Feasibility Study and Detailed Project Report For Two lane With Paved Shoulders of Tamenglong - Haflong Road In The State of Manipur on EPC Mode.	<b>AZURAM- MAKRU RIVER SECTION (PACKAGE-5)</b>

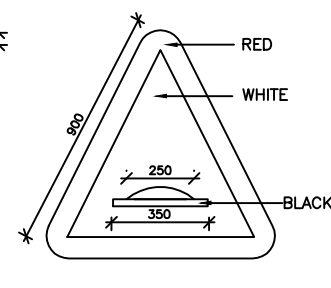




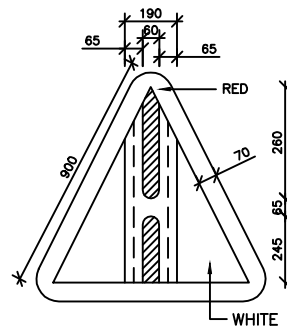
SCHOOL  
S-32



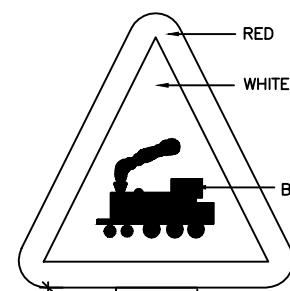
SCALE 1:10



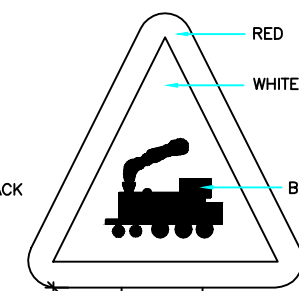
SPEED BUMP  
S-33



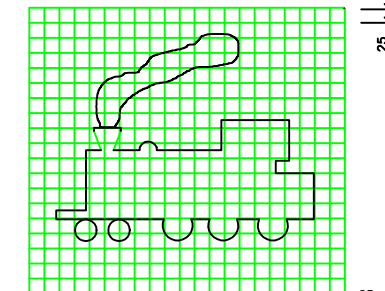
GAP IN MEDIAN  
S-34



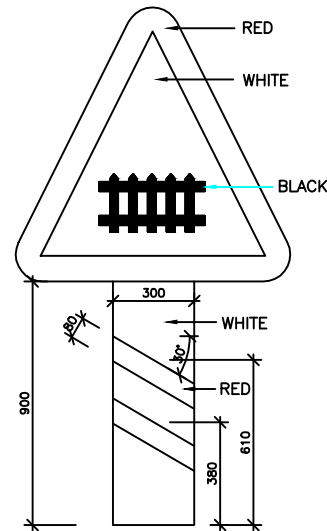
200 METRES



50-100 METRES



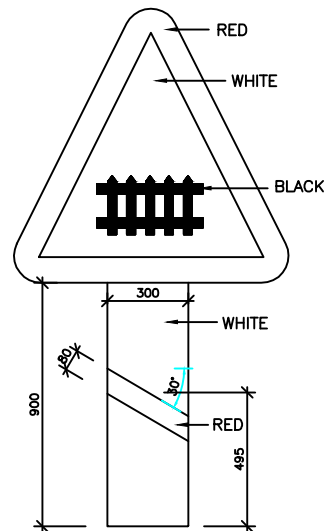
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200 METRES

GUARDED RAILWAY CROSSING

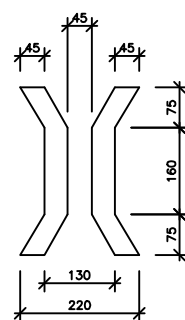
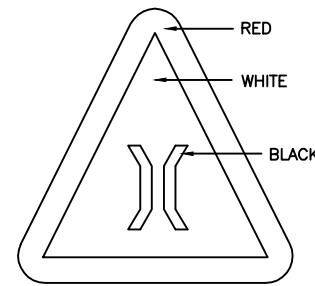
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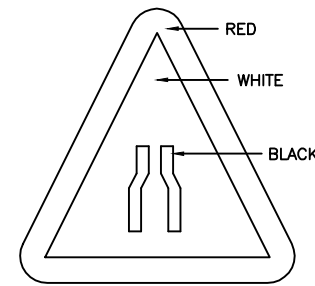
50-100 METRES

NARROW BRIDGE

S-37

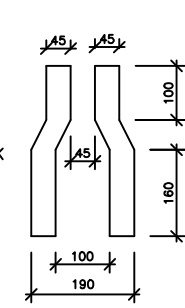


SCALE 1:10

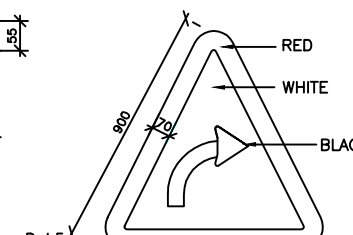


NARROW ROAD AHEAD

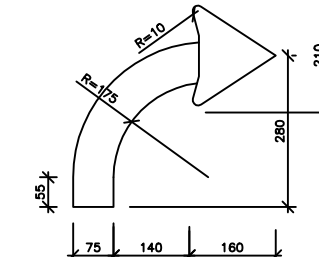
S-38



SCALE 1:10

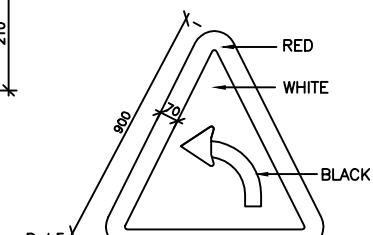


SCALE 1:20



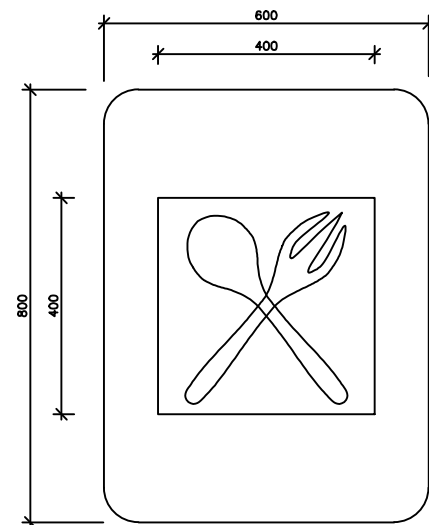
CURVE

S-39



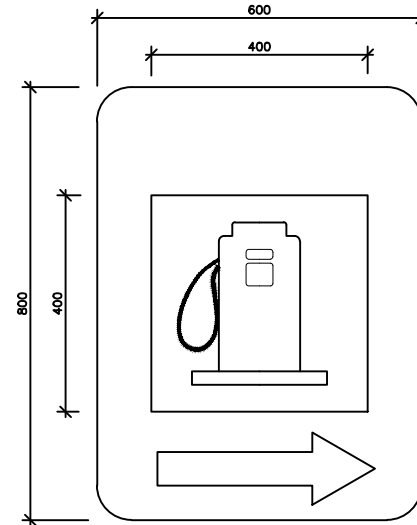
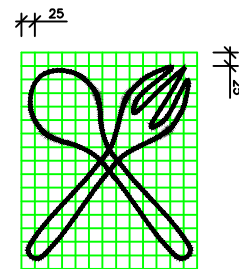
SCALE 1:20

(L)



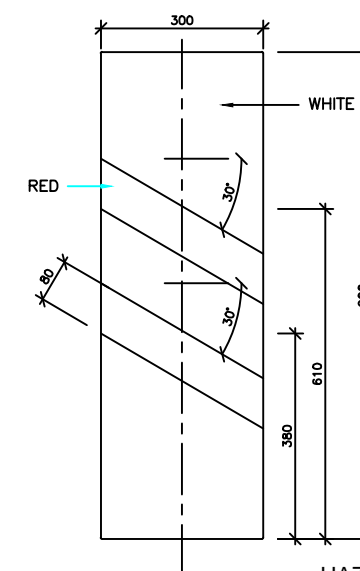
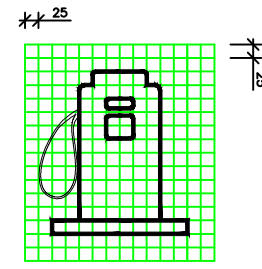
EATING PLACE

S-40



PETROL PUMP

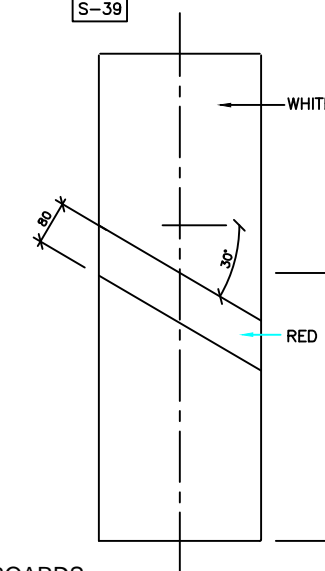
S-41



HAZARD BOARDS

S-42

SCALE 1:20



Notes :

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-- CONSULTANTS --

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Tel./Fax : 0755-4295421,  
Mob.: 09826452711, 09977004686  
E-mail : [lninfra@lninfra.com](mailto:lninfra@lninfra.com)

-- CLIENT --

NATIONAL HIGHWAYS INFRASTRUCTURE  
DEVELOPMENT CORPORATION LIMITED (NHIDCL)



DRG. NO. :

3

DESIGNED BY.

APPROVED BY.

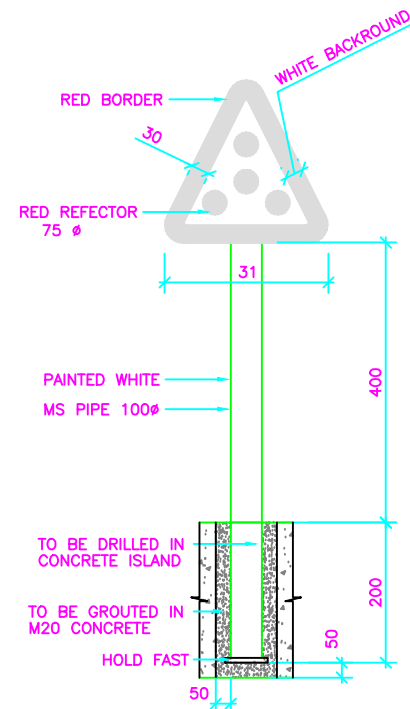
-- PROJECT TITLE --

Consultancy Services for Preparation of  
Feasibility Study and Detailed Project Report For  
Two lane With Paved Shoulders of Tamenglong  
- Haflong Road In The State of Manipur on EPC  
Mode.

-- TRAFFIC SIGN --

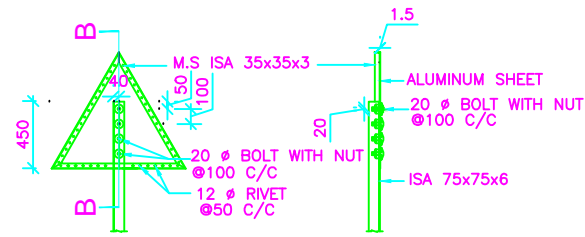
AZURAM- MAKRU RIVER SECTION  
(PACKAGE-5)





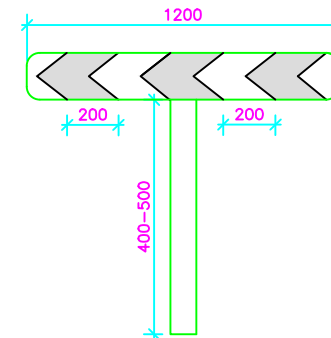
OBJECT MARKER

TA-1



DETAIL - X

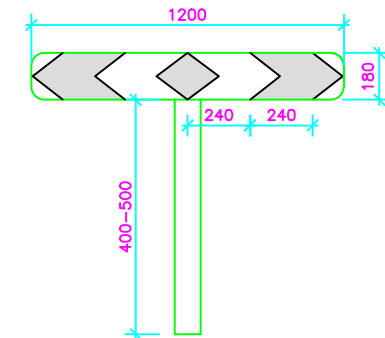
SECTION B-B



ONE-WAY HAZARD MARKER

TA-2

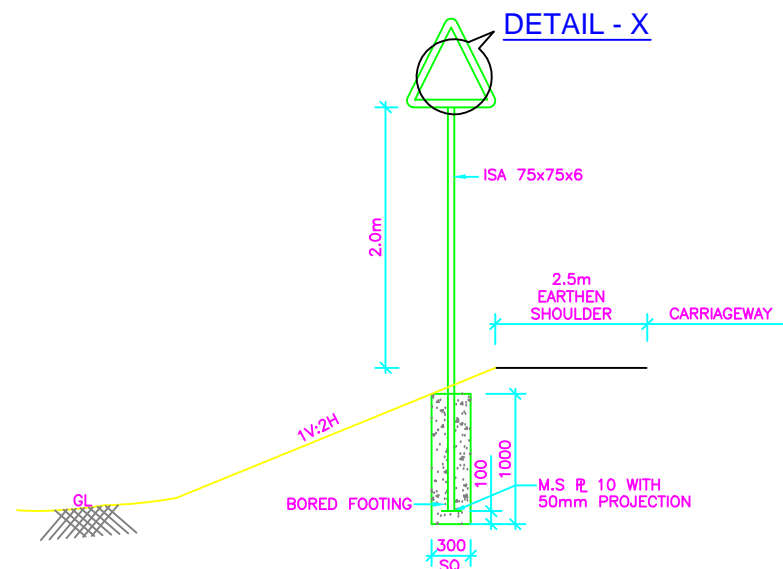
SCALE 1:20



TWO-WAY HAZARD MARKER

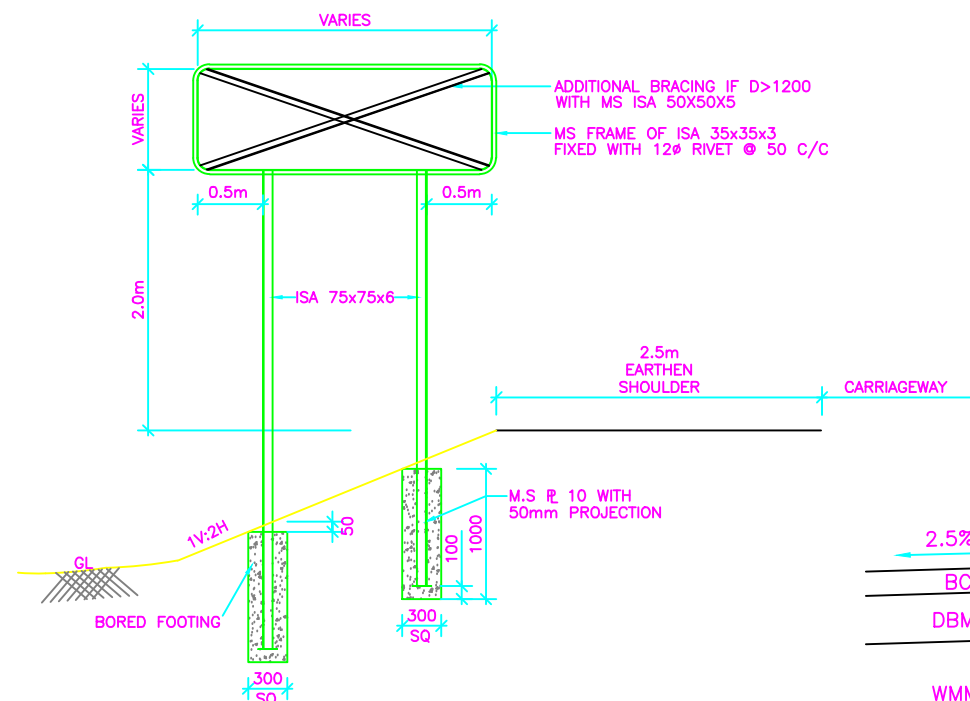
TA-3

SCALE 1:20



SINGLE LEAF SIGN

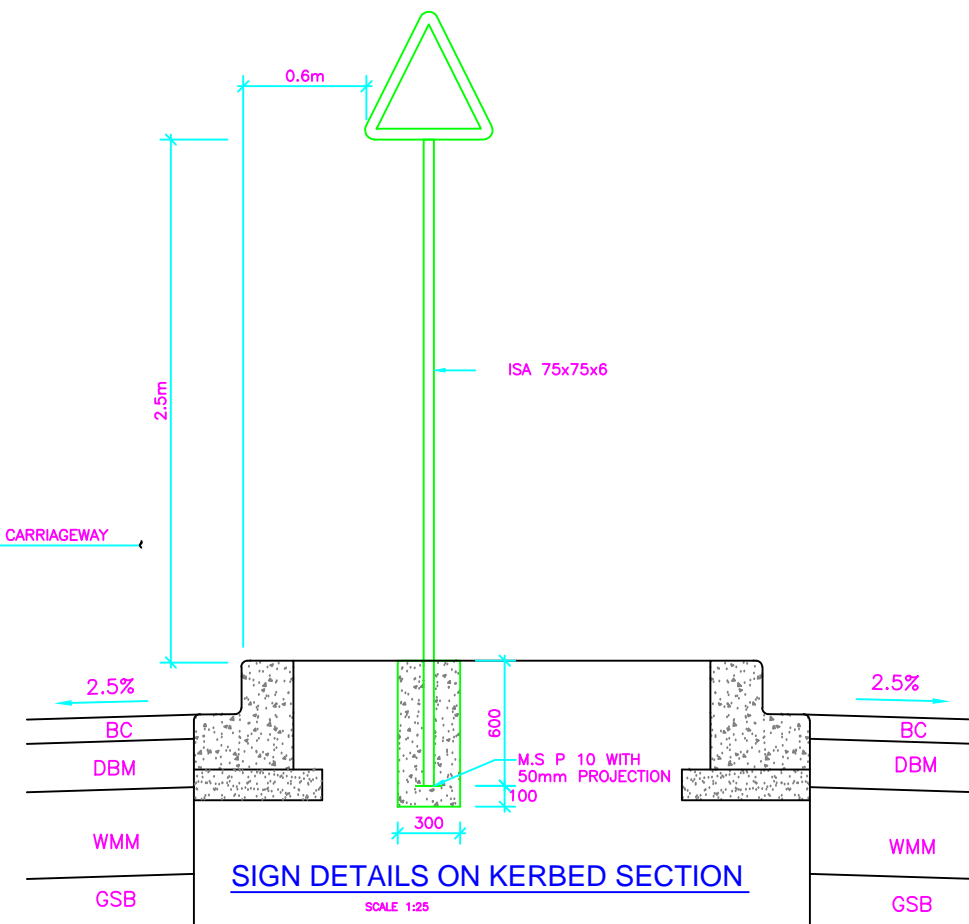
SCALE 1:40



DOUBLE LEAF SIGN

(WITH BORED FOOTING)

SCALE 1:40



SIGN DETAILS ON KERBED SECTION

SCALE 1:25

Notes :

- ALL THE DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE SPECIFIED.
- RETROREFLECTORISED SHEETING SHALL BE CONFORMING TO ASTM D-4956-01, TYPE VIII OR TYPE IX.
- THE SHEETING SHALL BE SECURELY BOLTED TO THE POST, THE REMAINING PORTION OF THE BOLT AFTER TIGHTENING THE NUT SHALL BE HAMMERED TO FORM RIVETING.
- IN CASE OF ROAD SIGNS, IRON POST SHALL BE PAINTED WITH ONE COAT OF EPOXY PRIMER AND TWO COATS OF EPOXY FINISH PAINT HAVING BLACK AND WHITE BANDS OF 250MM WIDTH.
- OBJECT MARKER SHALL BE SETBACK BY 500MM FROM THE FACE OF THE KERB. IT SHALL BE DRILLED INTO CONCRETE KERBS UPTO 600 MM DEPTH.
- ALL FOUNDATIONS SHALL BE IN M15 GRADE CEMENT CONCRETE.
- HAZARD MARKERS SHALL BE PRESSED INTO GROUND.
- BACK SIDE OF SIGN BOARD SHALL BE PAINTED WITH TWO COATS OF GRAY EPOXY PAINT.
- ALUMINUM SHEET SHALL BE 2mm THICK.
- ALL BLACK NUTS & BOLTS SHALL CONFORM TO IS:1353-1992
- RETRO REFLECTIVE SHEETING OF HIGH INTENSITY GRADE ENCAPSULATED TYPE SHALL BE AFFIXED TO ALUMINIUM SHEET BY PERSURE SENSITIVE ADHESIVE.
- STEEL SECTION SHALL CONFORM TO IS:1977-1996 & SHALL BE SUITABLY PAINTED.

:- CONSULTANTS :-

L.N. MALVIYA INFRA PROJECTS PVT. LTD.

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M.P. NAGAR, ZONE-I, BHOPAL (M.P.)



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Mob.: 09826452711, 09977004686  
E-mail : lninfra@projects@gmail.com

:- CLIENT :-

NATIONAL HIGHWAYS INFRASTRUCTURE  
DEVELOPMENT CORPORATION LIMITED (NHIDCL)



DRG. NO. :

5

DESIGNED BY.

APPROVED BY.

:- PROJECT TITLE :-

CConsultancy Services for Preparation of  
Feasibility Study and Detailed Project Report For  
Two lane With Paved Shoulders of Tamenglong  
- Haflong Road In The State of Manipur on EPC  
Mode.

:-TRAFFIC SIGNS:-

AZURAM- MAKRU RIVER SECTION  
(PACKAGE-5)

HECTOMETRE STONE  
SCALE-1:20

The diagram illustrates the cross-section of a two-lane road. Key components and dimensions include:

- ROW (Right of Way):** The total width of the road section.
- Earthen Shoulder:** Two shoulders, each 2500 units wide.
- CARRIAGEWAY:** The central road section, 7000 units wide.
- HECTOMETRE STONE / KILOMETRE STONE / 5TH. KILOMETRE STONE:** A marker on the left side of the road.
- VARIES:** Indicated on both sides of the road, suggesting variable dimensions.
- G.L. (Ground Level):** The base level of the road.
- ROW BOUNDARY:** The outer limits of the road section.

**SCHEMATIC CROSS SECTION (TWO LANE)**  
**SCALE - 1:200**

The diagram illustrates the plan view of a two-lane road. It features a central road section with two lanes, indicated by two parallel lines. On either side of the road, there are vertical yellow dashed lines representing the 'ROW BOUNDARY'. Along these boundaries, there are black dots representing 'BOUNDARY STONE'. In the center of the road, there are black dots representing 'KILOMETRE STONE / 5TH. KILOMETRE STONE' and 'HECTOMETRE STONE'. A red double-headed arrow labeled '200' indicates the distance between the boundary stones on the left side. Another red double-headed arrow labeled '200' indicates the distance between the hectometre stones in the center of the road. The text 'PLAN (TWO LANE)' and 'SCALE-1:200' is written at the bottom of the diagram.

**SECTIONAL PLAN**

370  
350  
250  
270  
25  
6 NOS-10 $\phi$   
8 $\phi$  STIRRUPS @ 200 C/C

**SECTIONAL PLAN**

520  
500  
250  
270  
25  
6 NOS-10 $\phi$   
8 $\phi$  STIRRUPS @ 200 C/C

**FACE-I & II ELEVATION**

50 250 50  
100 175  
50  
130 130  
10 75  
100  
450  
150  
150 370 150  
CC - 1:4:8

**FACE-I ELEVATION**

BRILLIANT GREEN  
WHITE  
ROUTE NUMBER  
TERMINAL STATION  
KILOMETREAGE  
NEXT IMP. STATION  
KILOMETREAGE  
10  
130 130 130 75  
10 10  
130  
450  
150  
150 520 150  
CC - 1:4:8

**FACE-II ELEVATION**

50 250 50  
100 175  
50  
130 130  
10 75  
100  
450  
150  
150 370 150  
CC - 1:4:8

**SIDE ELEVATION**

WHITE  
KILOMETREAGE IN BLACK  
10  
130 130 130 75  
10 10  
130  
450  
150  
150 270 150  
CC - 1:4:8

**SIDE ELEVATION**

WHITE  
KILOMETREAGE IN BLACK  
10  
130 130 130 75  
10 10  
130  
450  
150  
150 270 150  
CC - 1:4:8

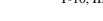

**KILOMETRE STONE**  
SCALE-1:20

**FIFTH KILOMETRE STONE**  
SCALE-1:20

GENERAL NOTES:

- 1). ALL DIMENSIONS ARE IN MM, UNLESS OTHERWISE MENTIONED.
- 2). KILOMETRE STONE / HECTOMETRE STONE / FIFTH KILOMETRE STONE SHALL BE CONSTRUCTED IN RCC M:20 GRADE.
- 3). FOUNDATION OF KILOMETRE STONE / HECTOMETRE STONE / FIFTH KILOMETRE STONE SHALL BE IN PCC M:15 GRADE.
- 4). THE DISTANCE STONES SHALL BE PROVIDED ON LEFT SIDE OF THE ROAD  
AS SHOWN INDEPENDENT OF DIRECTION OF TRAFFIC FLOW.
- 5). ALL NUMERALS SHALL BE PAINTED BLACK.



- 6). SIZE OF LETTERS AND NUMERALS SHALL BE AS PER IRC: 8-1980.
- 7). STEEL REINFORCEMENT SHALL BE MILD STEEL Fe. 250.
- 8). NO PAINTING SHALL BE CARRIED OUT ON BOUNDARY STONES.
- 9). HECTOMETRE STONE SHALL BE PAINTED WHITE.
- 10). KILOMETRE STONE AND FIFTH KILOMETRE STONE SHALL BE PAINTED AS SHOWN.

<p align="center">-: CONSULTANTS :-</p> <p><b>L.N. MALVIYA INFRA PROJECTS PVT. LTD.</b></p> <p>T-10, III FLOOR, CITY CENTER, PRESS COMPLEX, PLOT NO.-1, M.P. NAGAR, ZONE-I, BHOPAL (M.P.)</p> <div>  <p>Tel./Fax : 0755-4295421, Mob.: 09826452711, 09977004686 E-mail : <a href="mailto:lninfraprojects@gmail.com">lninfraprojects@gmail.com</a></p> </div>	<p align="center">-: CLIENT :-</p> <p align="center"><b>NATIONAL HIGHWAYS INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (NHIDCL)</b></p> <div>  </div>	<p align="center">DRG. NO. :</p> <p align="center"><b>6</b></p>	<p align="center">DESIGNED BY.</p>	<p align="center">APPROVED BY.</p>	<p align="center">-: PROJECT TITLE :-</p> <p>CConsultancy Services for Preparation of Feasibility Study and Detailed Project Report For Two lane With Paved Shoulders of Tamenglong - Haflong Road In The State of Manipur on EPC Mode.</p>	<p align="center">-: DISTANCE STONES :-</p> <p align="center"><b>AZURAM- MAKRU RIVER SECTION (PACKAGE-5)</b></p>
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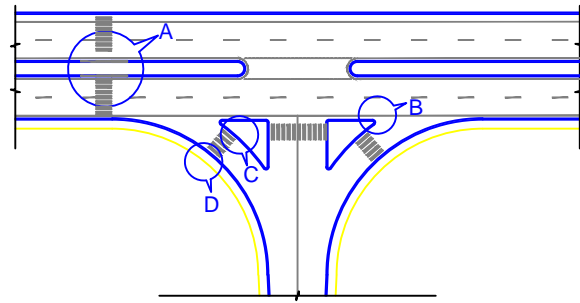
(SCALE 1:20)



1. ALL THE DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE SPECIFIED.	6. ELECTRODE USED SHALL CONFORM TO RELEVANT IS SPECIFICATIONS.	10. POST ENDS IN CONCRETE FOOTING SHALL BE BENDED TO SERVE THE PURPOSE OF HOLD FAST.
2. FOOTING SHALL BE IN PLAN CEMENT CONCRETE OF M15 GRADE.	& THE CHEMICAL COMPOSITION OF ELECTRODE & THE MS BAR SHOULD MATCH.	
3. HIGH STRENGTH BOLT SHALL CONFORM TO IS:4000-1992	7. SLAG SHALL BE REMOVED BEFORE MEASURING THE DIMENSIONS OF FILLET WELD.	
4. 5mm WELD SHALL BE MADE WITH SINGLE PASS.	8. STRUCTURAL STEEL SHALL CONFORM TO IS: 1977-1996	
5. WELDING SHALL BE DONE BY ARC WELDING.	9. SHADE OF ANTI CORROSION PAINT SHALL BE DECIDED BY ENGINEER-IN-CHARGE.	

CLIENT : -: CONSULTANTS :-	-: CLIENT :-	DRG. NO. :	DESIGNED BY.	APPROVED BY.	-: PROJECT TITLE :-	-: GUARED RAIL :-
<b>L.N. MALVIYA INFRA PROJECTS PVT. LTD.</b> T-10, III FLOOR, CITY CENTER, PRESS COMPLEX, PLOT NO.-1, M.P. NAGAR, ZONE-I, BHOPAL (M.P.)  Tel./Fax : 0755-4295421, Mob.: 09826452711, 09977004686 E-mail : <a href="mailto:lninfraprojects@gmail.com">lninfraprojects@gmail.com</a>	<b>NATIONAL HIGHWAYS INFRASTRUCTURE          DEVELOPMENT CORPORATION LIMITED (NHIDCL)</b> 	7			CConsultancy Services for Preparation of Feasibility Study and Detailed Project Report For Two lane With Paved Shoulders of Tamenglong - Haflong Road In The State of Manipur on EPC Mode.	<b>AZURAM- MAKRU RIVER SECTION          (PACKAGE-5)</b>





PLAN OF TYPICAL INTERSECTION ON MULTI-LANE CARRIAGEWAY

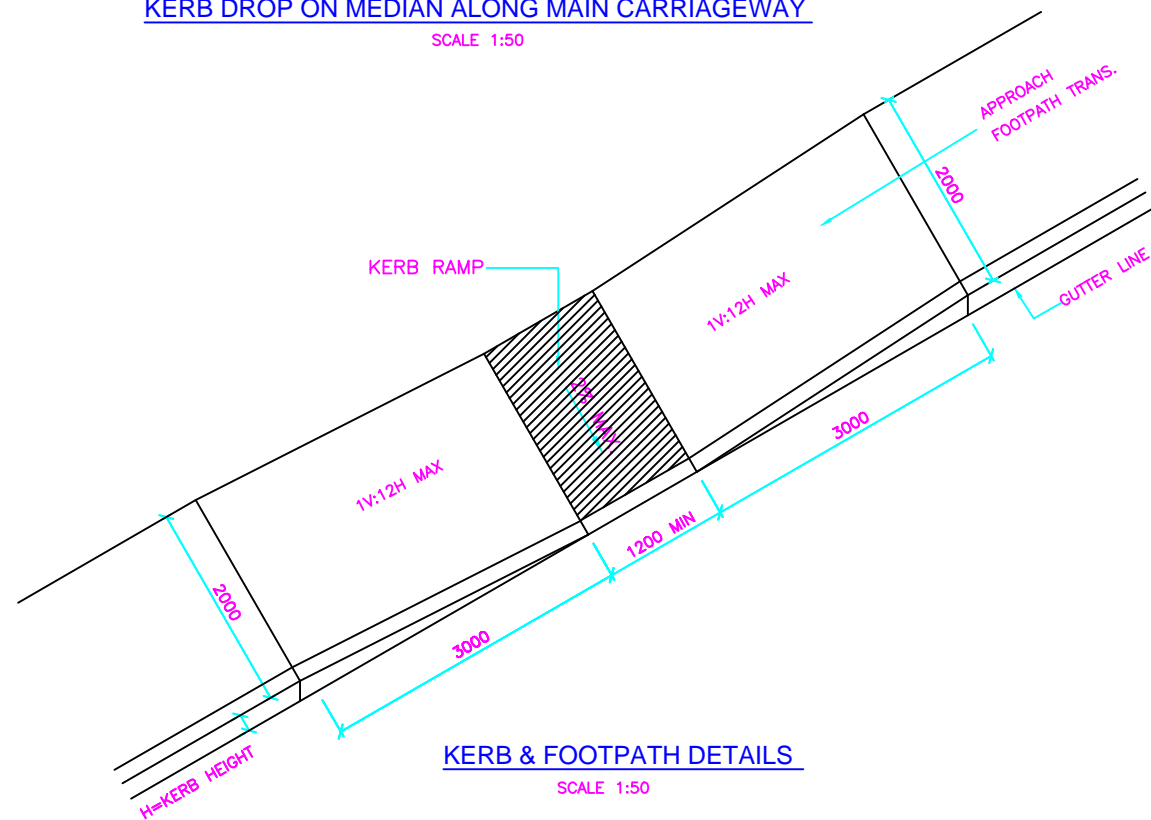
N.T.S.



DETAIL A

KERB DROP ON MEDIAN ALONG MAIN CARRIAGEWAY

SCALE 1:50

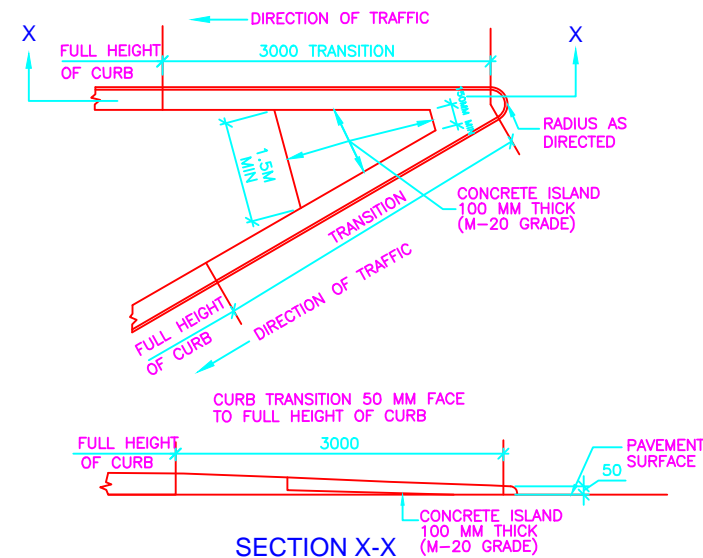


KERB & FOOTPATH DETAILS

SCALE 1:50

NOTES:

1. THIS DETAIL SHALL BE USED ONLY WHEN THE POSTED SPEED LIMIT DOES NOT EXCEED 60km/hr OR THE TERMINAL IS BEYOND THE CLEAR ZONE

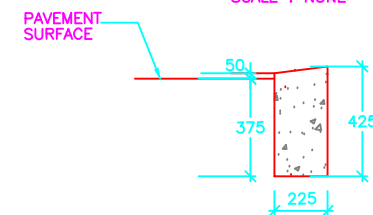


SECTION X-X

DETAIL B

KERB TRANSITION ON ISLANDS

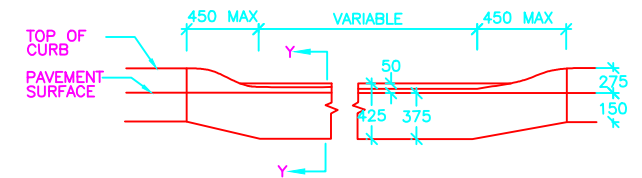
SCALE : NONE



DETAIL C

METHOD OF DEPRESSING CURBS ON ISLANDS

N.T.S.

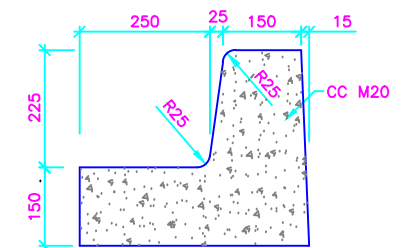


SECTION Y-Y

DETAIL C

METHOD OF DEPRESSING CURBS ON ISLANDS

SCALE : NONE



KERB DETAILS

SCALE : 1:10

NOTES:

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.
2. CONCRETE GRADE SHALL BE M-20 UNLESS OTHERWISE SPECIFIED.

:- CONSULTANTS :-

L.N. MALVIYA INFRA PROJECTS PVT. LTD.

T-10, III FLOOR, CITY CENTER, PRESS COMPLEX, PLOT NO.-1,  
M.P. NAGAR, ZONE-I, BHOPAL (M.P.)



Tel./Fax : 0755-4295421,  
Mob.: 09826452711, 09977004686  
E-mail : lninfra@projects@gmail.com

:- CLIENT :-

NATIONAL HIGHWAYS INFRASTRUCTURE  
DEVELOPMENT CORPORATION LIMITED (NHIDCL)



DRG. NO. :

8

DESIGNED BY.

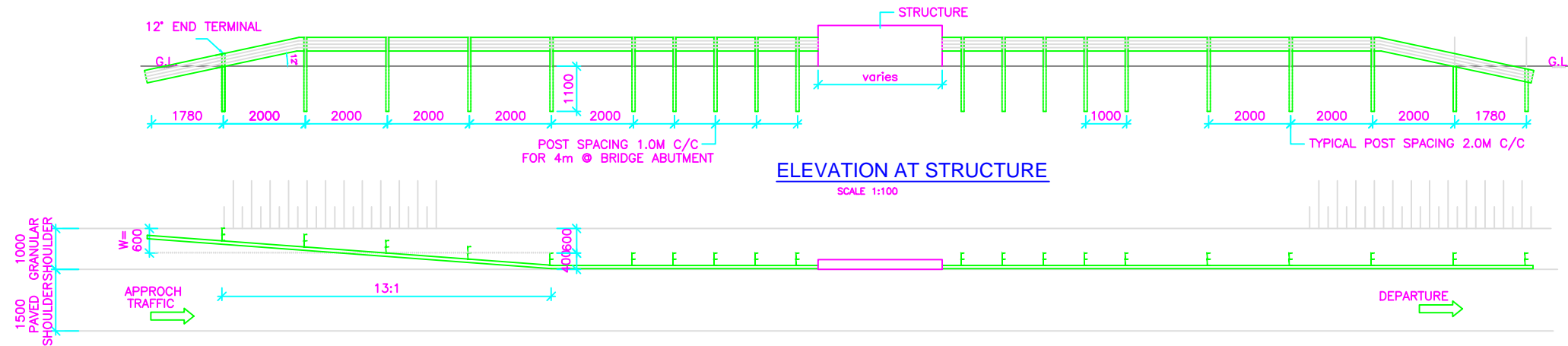
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:- PROJECT TITLE :-

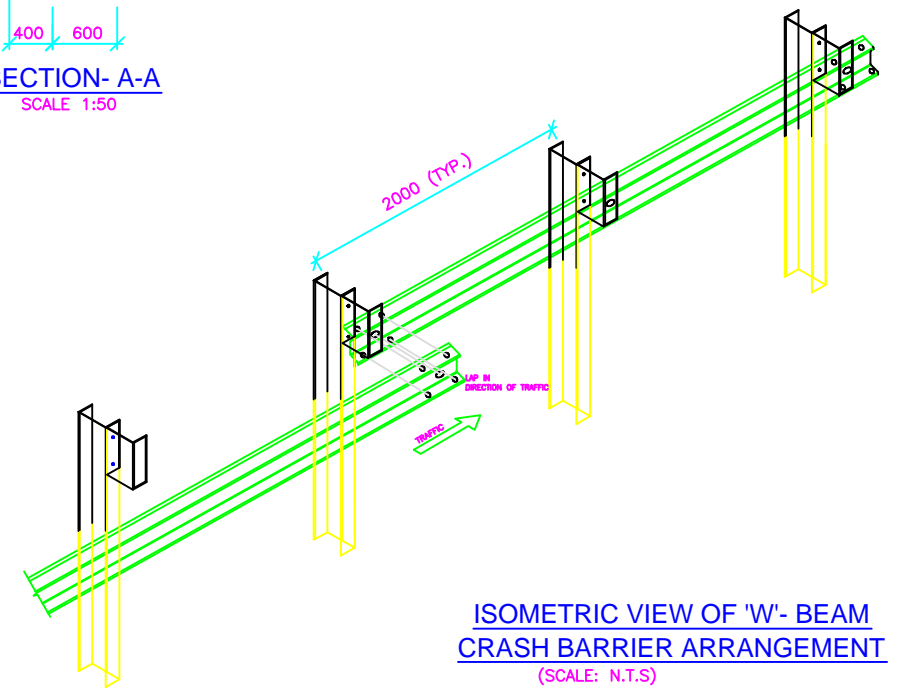
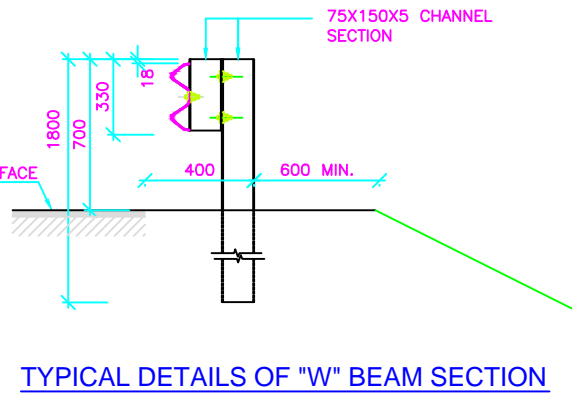
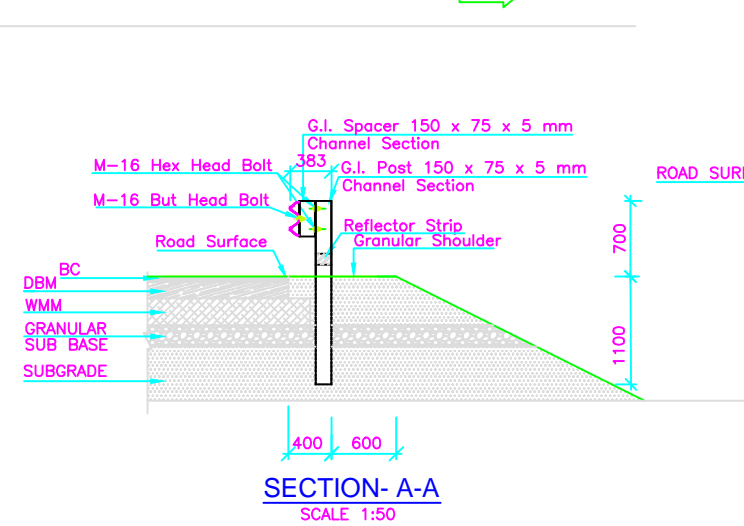
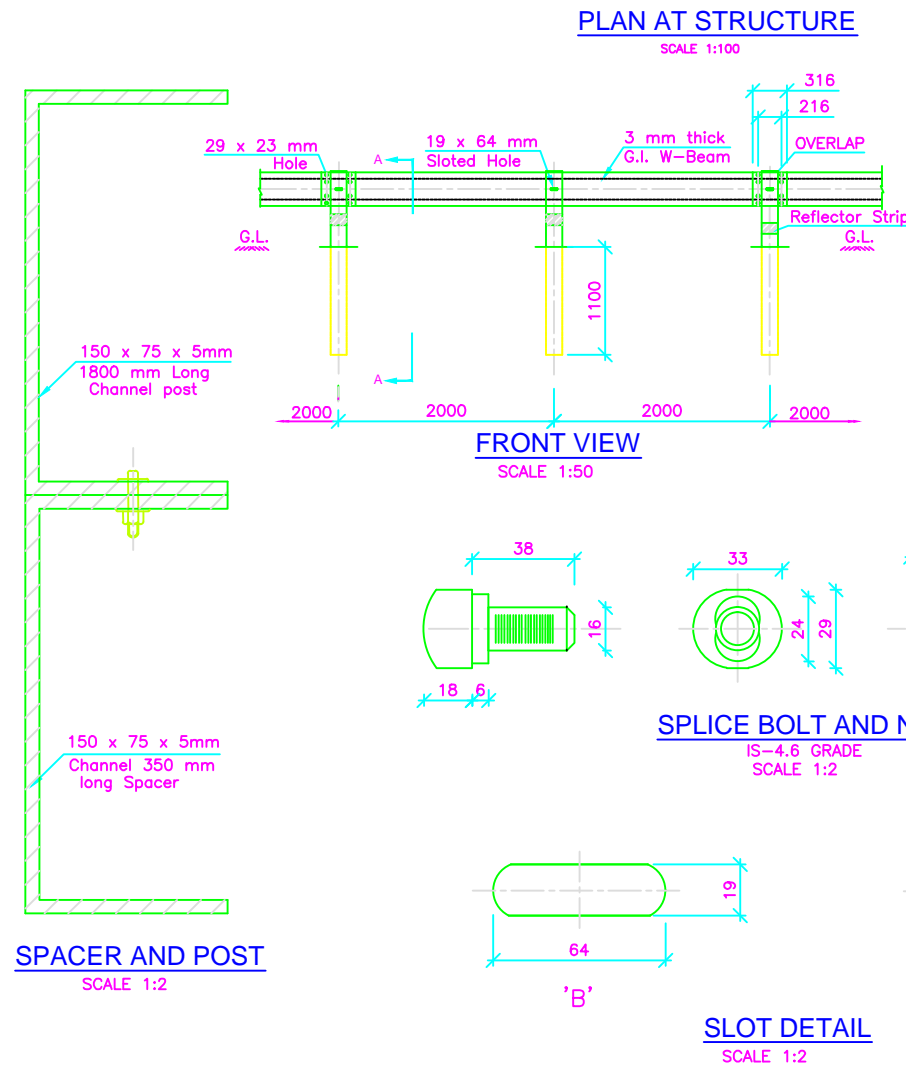
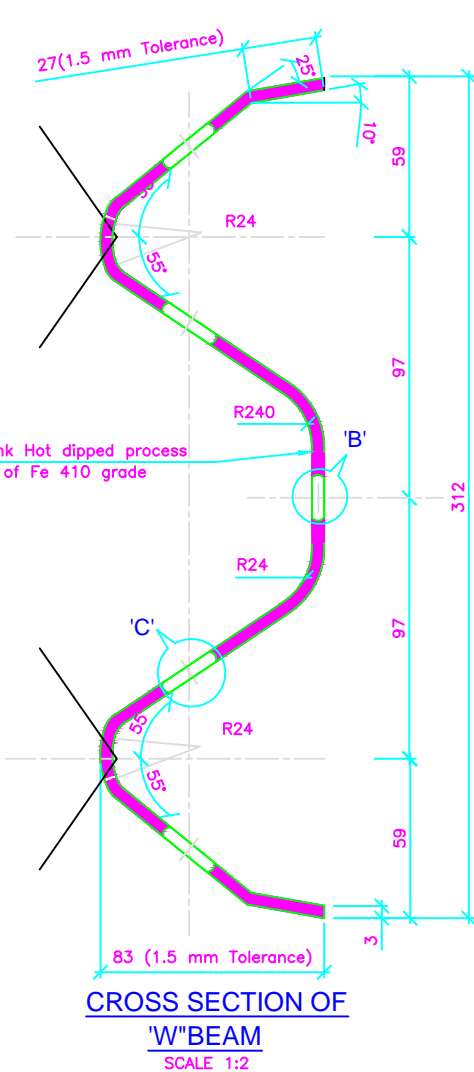
CConsultancy Services for Preparation of  
Feasibility Study and Detailed Project Report For  
Two lane With Paved Shoulders of Tamenglong  
- Haflong Road In The State of Manipur on EPC  
Mode.

:-KERB & ISLANDS:-

AZURAM- MAKRU RIVER SECTION  
(PACKAGE-5)



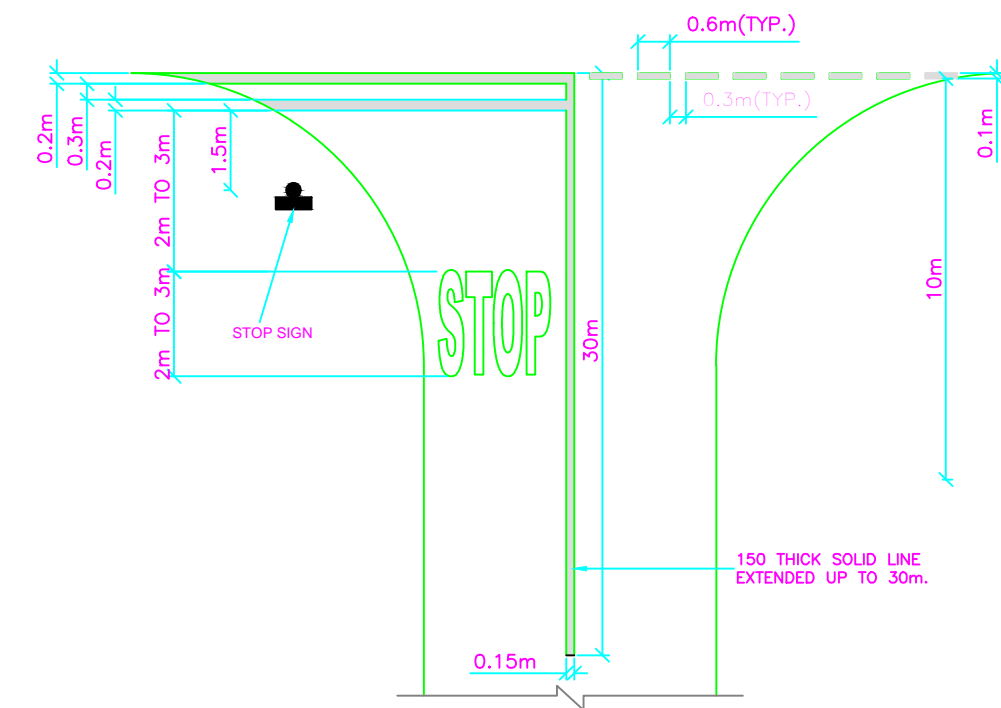
SUGGESTED FLARE RATES FOR END TREATMENTS	
DESIGN SPEED (km/hr)	SEMI RIGID
100	13:1
80	11:1
65	9:1
50	7:1



#### Notes :

- ALL THE DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE SPECIFIED.
- CORRUGATED METAL BEAM SHALL BE 3MM THICK.
- W-BEAM SHALL BE COLD ROLL FORMED SECTION.
- ALL RAW MATERIAL SHALL CONFORM TO IS 5986 (Gr.Fe 410:ST-42) HOT DIP GALVANISED TO 550 gm/Sqm.
- SPACERS SHALL BE AS PER IS :2062-1992
- EVERY CHANNEL POST SHALL BE 2M C/C APART EXCEPT STRUCTURE LOCATIONS.
- THE ENDS OF FASTNERS ARE TO BE FLARED BY PNEUMATIC OPERATION TO ENSURE THAT THE BOLTS ARE NOT REMOVABLE

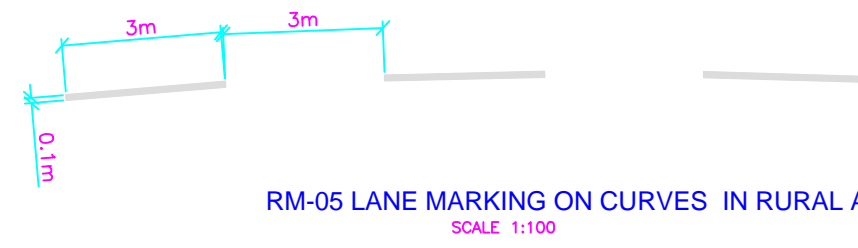
-: CONSULTANTS :-		-: CLIENT :-		DRG. NO. :	DESIGNED BY.	APPROVED BY.	-: PROJECT TITLE :-	-:MB CRASH BARRIER:-
<b>L.N. MALVIYA INFRA PROJECTS PVT. LTD.</b> T-10, III FLOOR, CITY CENTER, PRESS COMPLEX, PLOT NO.-1, M.P. NAGAR, ZONE-I, BHOPAL (M.P.) Tel./Fax : 0755-4295421, Mob.: 09826452711, 09977004686 E-mail : lninfra@projects@gmail.com		<b>NATIONAL HIGHWAYS INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (NHIDCL)</b>		9			CConsultancy Services for Preparation of Feasibility Study and Detailed Project Report For Two lane With Paved Shoulders of Tamenglong - Haflong Road In The State of Manipur on EPC Mode.	<b>AZURAM- MAKRU RIVER SECTION (PACKAGE-5)</b>



RM-01 STOP LINE  
SCALE 1:100



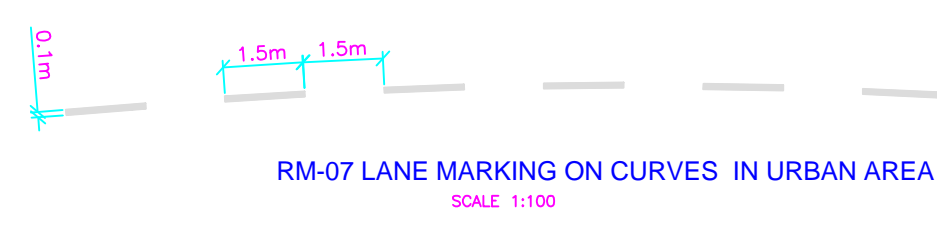
RM-04 LANE MARKING IN RURAL STRAIGHT REACHES  
SCALE 1:100



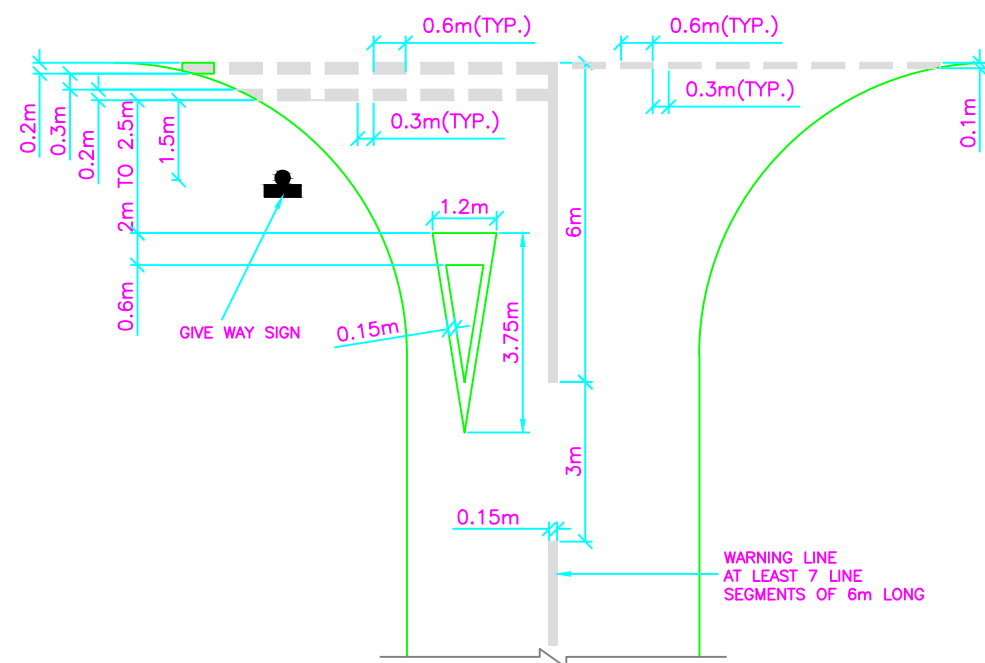
RM-05 LANE MARKING ON CURVES IN RURAL AREA  
SCALE 1:100



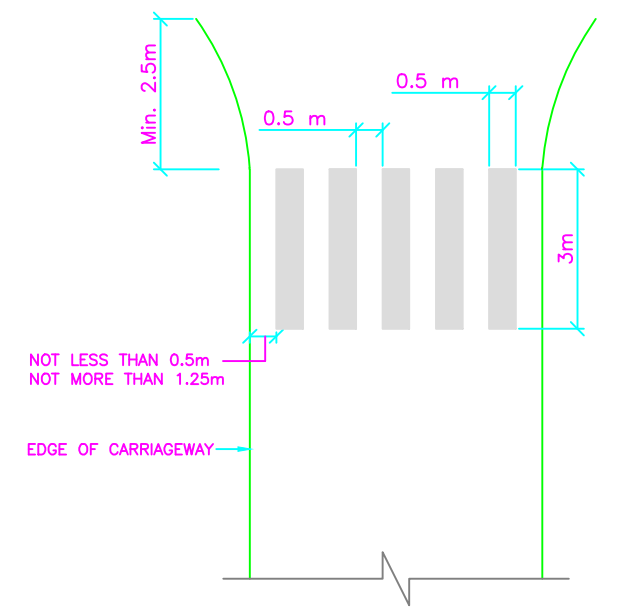
RM-06 LANE MARKING IN URBAN STRAIGHT REACHES  
SCALE 1:100



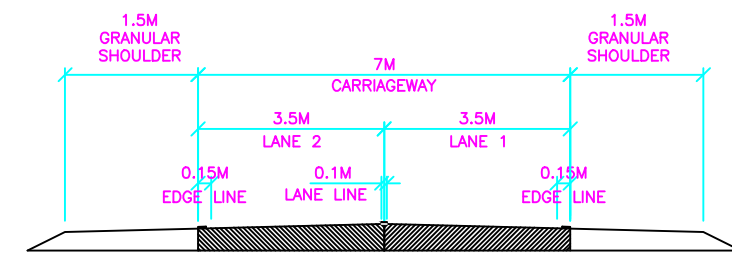
RM-07 LANE MARKING ON CURVES IN URBAN AREA  
SCALE 1:100



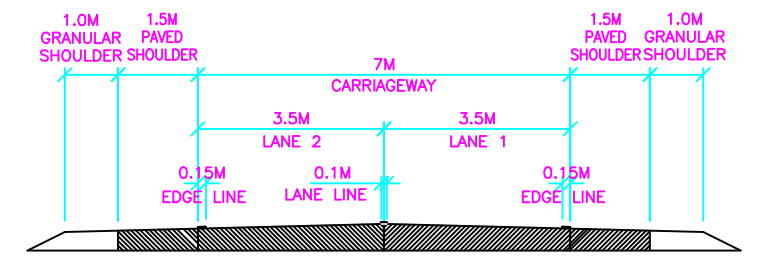
RM-02 GIVEWAY LINE  
SCALE 1:100



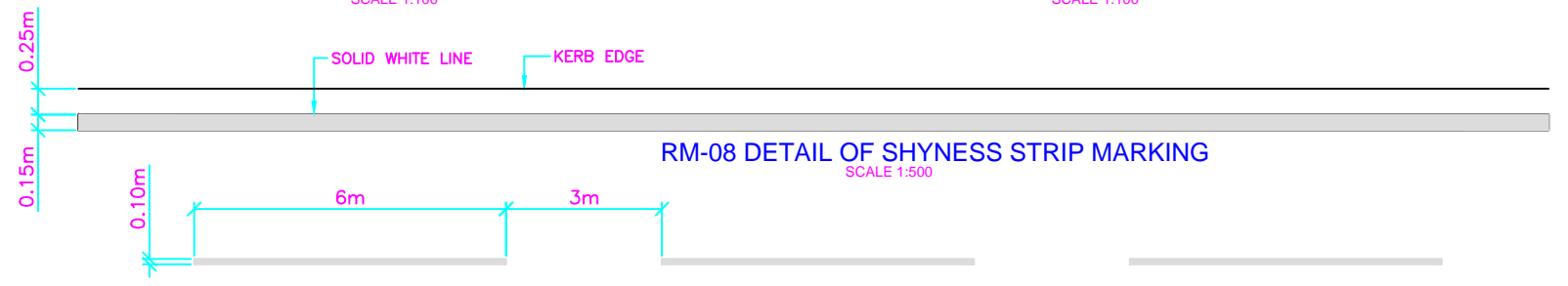
RM-03 PEDESTRIAN CROSSING MARKING  
SCALE 1:100



TYPICAL LAYOUT OF ROAD MARKING FOR TWO LANE  
SCALE 1:100



TYPICAL LAYOUT OF ROAD MARKING FOR TWO LANE WITH PSS  
SCALE 1:100



RM-08 DETAIL OF SHYNESS STRIP MARKING  
SCALE 1:500



RM-09 CONTINUITY LINE 6m LONG  
SCALE 1:100



RM-10 CONTINUITY LINE 0.6m LONG  
SCALE 1:100

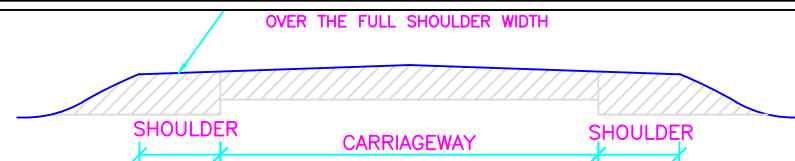


RM-11 WARNING LINE AT BUS BAY/TRUCK LAY BYE  
SCALE 1:100

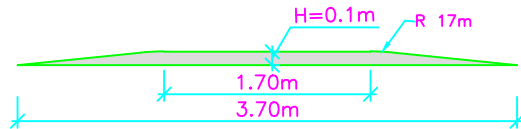
**GENERAL NOTES :**

- ROAD MARKING SHALL BE OF HOT APPLIED THERMOPLASTIC MATERIALS WITH GLASS REFLECTORISING BEADS OF TYPE 2 AS PER CLAUSES OF SECTION 803 OF MOSRTH SPECIFICATIONS.

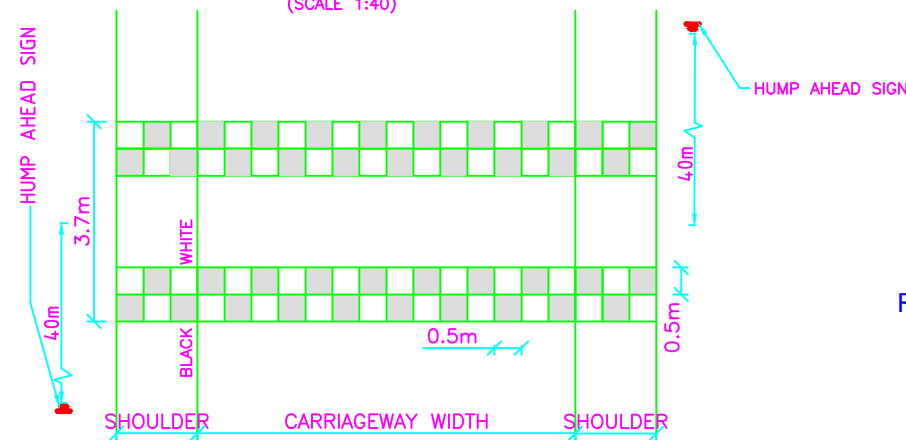
-: CONSULTANTS :-		-: CLIENT :-		DRG. NO. :	DESIGNED BY.	APPROVED BY.	-: PROJECT TITLE :-	-:LANE MARKING:-
<b>L.N. MALVIYA INFRA PROJECTS PVT. LTD.</b> T-10, III FLOOR, CITY CENTER, PRESS COMPLEX, PLOT NO.-1, M.P. NAGAR, ZONE-I, BHOPAL (M.P.) Tel./Fax : 0755-4295421, Mob.: 09826452711, 09977004686 E-mail : lninfra@projects@gmail.com		<b>NATIONAL HIGHWAYS INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (NHIDCL)</b>		10			CConsultancy Services for Preparation of Feasibility Study and Detailed Project Report For Two lane With Paved Shoulders of Tamenglong - Haflong Road In The State of Manipur on EPC Mode.	<b>AZURAM- MAKRU RIVER SECTION (PACKAGE-5)</b>



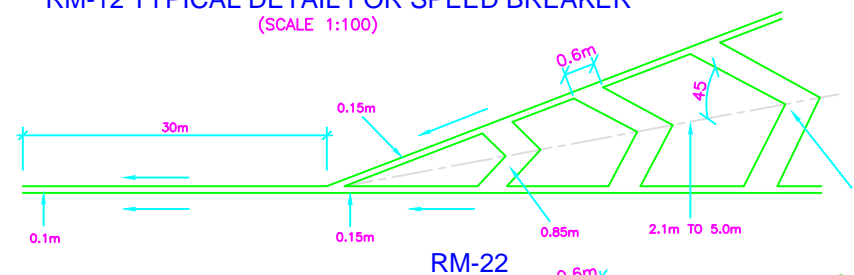
TRANSVERSE SECTION



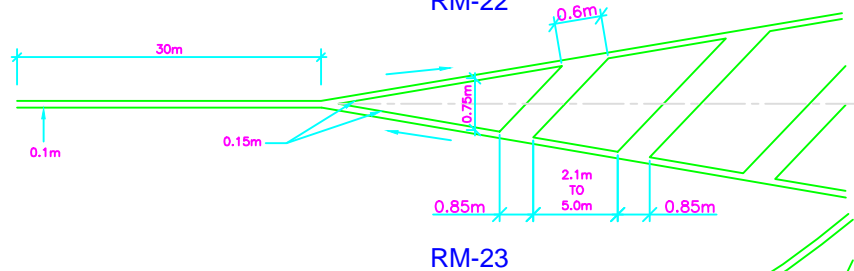
TYPICAL DETAIL OF LONGITUDIANL SECTION (SCALE 1:40)



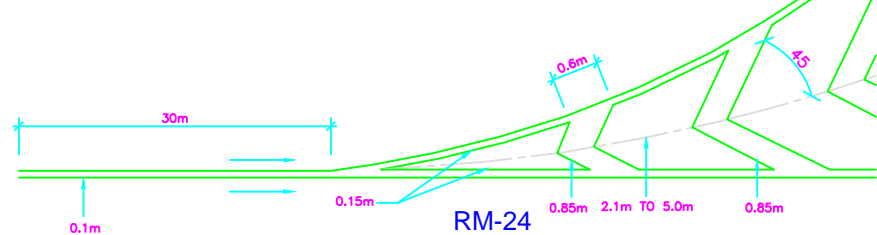
RM-12 TYPICAL DETAIL FOR SPEED BREAKER (SCALE 1:100)



RM-22

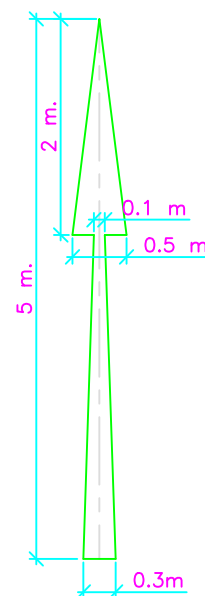


RM-23

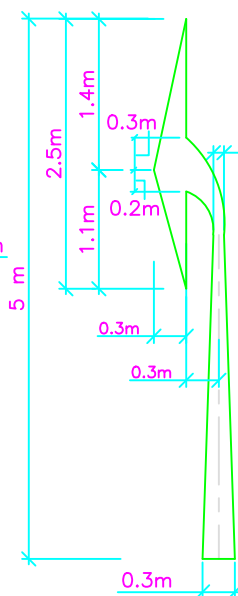


RM-24

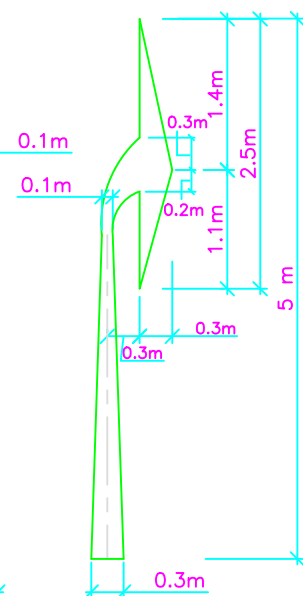
DETAILS OF DIAGONAL AND CHEVRON MARKING



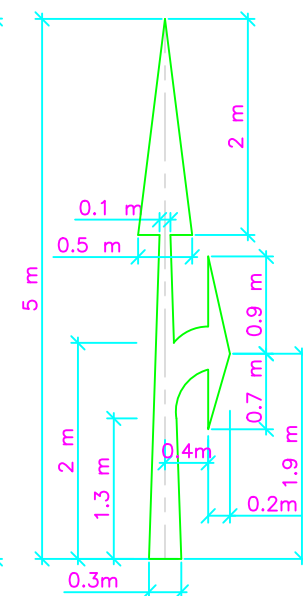
RM-13 STRAIGHT (SCALE 1:20)



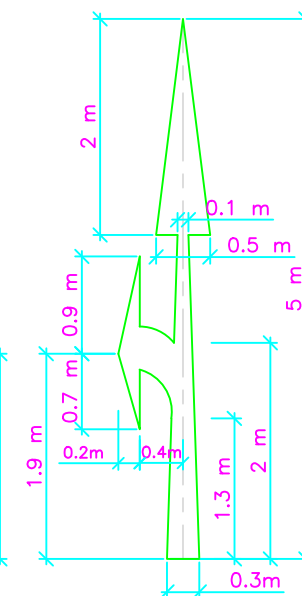
RM-14 LEFT (SCALE 1:20)



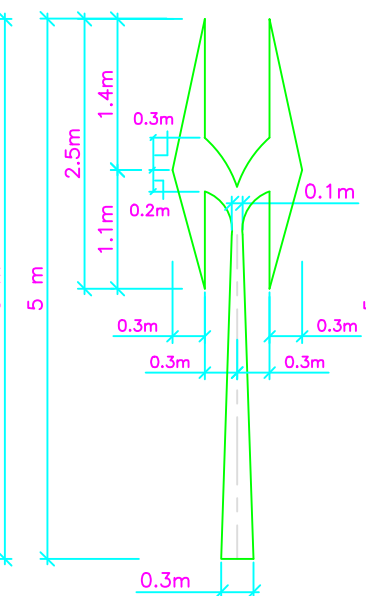
RM-15 RIGHT (SCALE 1:20)



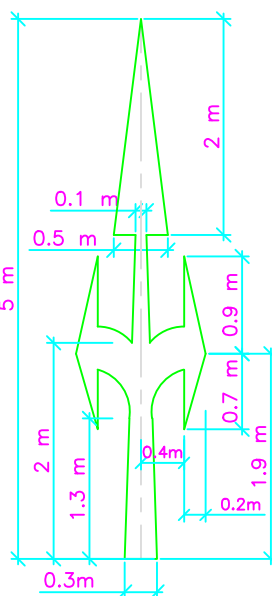
RM-16 STRAIGHT & RIGHT (SCALE 1:20)



RM-17 STRAIGHT & LEFT (SCALE 1:20)

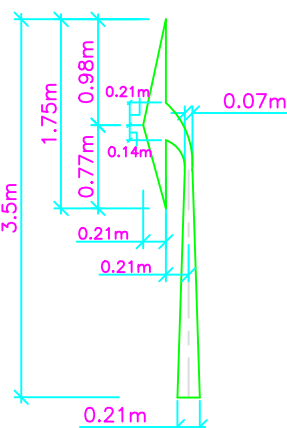


STRAIGHT & BOTH LEFT & RIGHT RM-18 (SCALE 1:20)

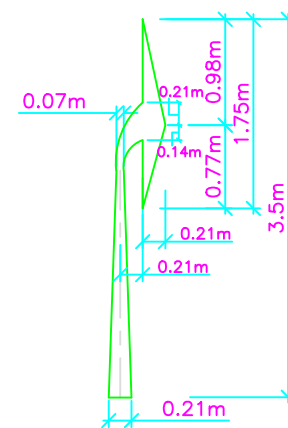


RM-19 (SCALE 1:20)

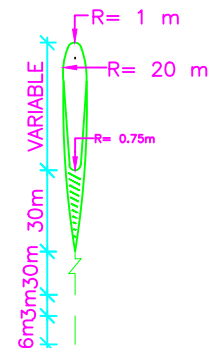
ARROW MARKING FOR ROUTE DIRECTION



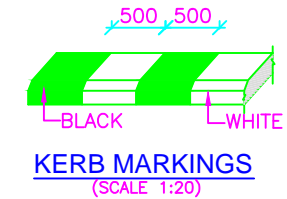
RM-20 LEFT (SCALE 1:20)



RM-21 RIGHT (SCALE 1:20)



DIAGONAL MARKING IN ADVANCE OF DIRECTIONAL ISLAND (SCALE 1:200)



KERB MARKINGS (SCALE 1:20)



RM-25 DETAIL OF EDGE LING MARKING SCALE 1:100

GENERAL NOTES :

- ROAD MARKING SHALL BE OF HOT APPLIED THERMOPLASTIC MATERIALS WITH GLASS REFLECTORISING BEADS OF TYPE 2 AS PER CLAUSES OF SECTION 803 OF MOSRTH SPECIFICATIONS.

:- CONSULTANTS :-

L.N. MALVIYA INFRA PROJECTS PVT. LTD.

T-10, III FLOOR, CITY CENTER, PRESS COMPLEX, PLOT NO.-1, M.P. NAGAR, ZONE-I, BHOPAL (M.P.)



Tel./Fax : 0755-4295421, Mob: 09826452711, 09977004686 E-mail : lninfra@projects@gmail.com

:- CLIENT :-

NATIONAL HIGHWAYS INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (NHIDCL)



DRG. NO. :

11

DESIGNED BY.

APPROVED BY.

:- PROJECT TITLE :-

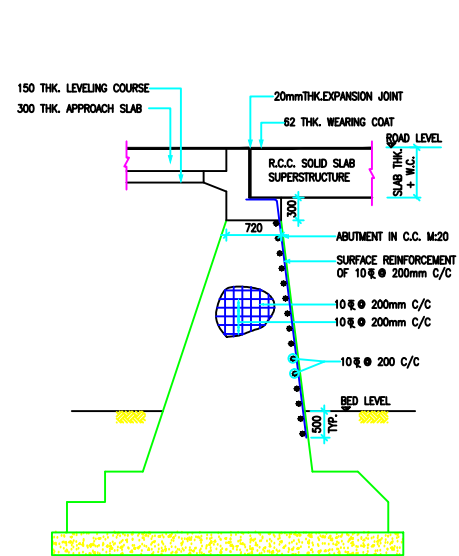
CConsultancy Services for Preparation of Feasibility Study and Detailed Project Report For Two lane With Paved Shoulders of Tamenglong - Haflong Road In The State of Manipur on EPC Mode.

:-LANE MARKING:-

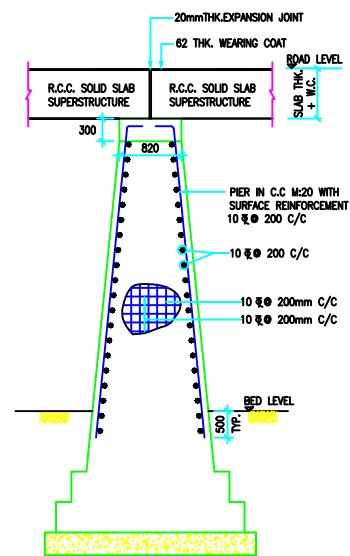
AZURAM- MAKRU RIVER SECTION (PACKAGE-5)



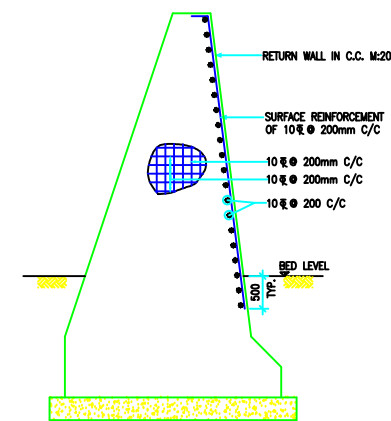




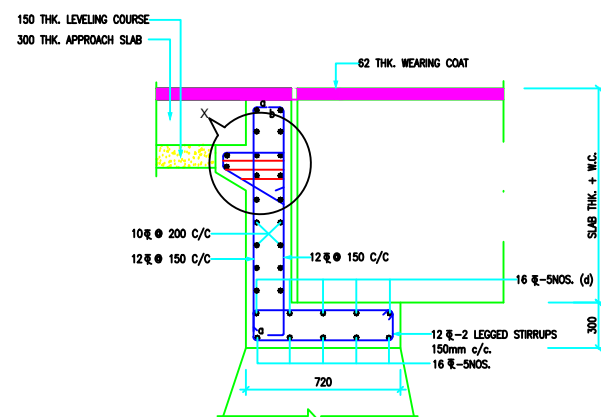
REINFORCEMENT DETAILS  
OF P.C.C. ABUTMENT



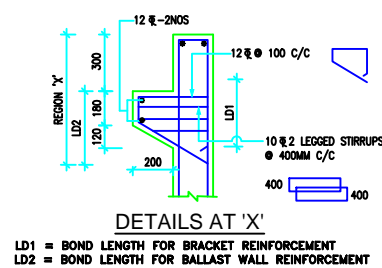
REINFORCEMENT DETAILS  
OF P.C.C. PIER



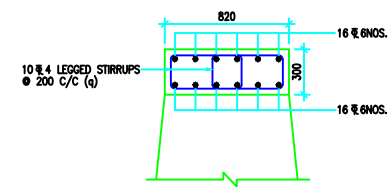
REINFORCEMENT DETAILS  
OF P.C.C. RETURN WALL



REINFORCEMENT DETAIL OF  
ABUTMENT CAP & DIRT WALL  
FOR P.C.C. ABUTMENT



DETAILS AT 'X'  
LD1 = BOND LENGTH FOR BRACKET REINFORCEMENT  
LD2 = BOND LENGTH FOR BALLAST WALL REINFORCEMENT



REINFORCEMENT  
DETAIL OF PIER CAP

-: CONSULTANTS :-

**L.N. MALVIYA INFRA PROJECTS PVT. LTD.**

T-10, III FLOOR, CITY CENTER, PRESS COMPLEX, PLOT NO.-1,  
M.P. NAGAR, ZONE-I, BHOPAL (M.P.)



Tel./Fax : 0755-4295421,  
Mob.: 09826452711, 09977004686  
E-mail : [lninfraprojects@gmail.com](mailto:lninfraprojects@gmail.com)

-: CLIENT :-

**NATIONAL HIGHWAYS INFRASTRUCTURE  
DEVELOPMENT CORPORATION LIMITED (NHIDCL)**



DRG. NO. :

**13**

DESIGNED BY.

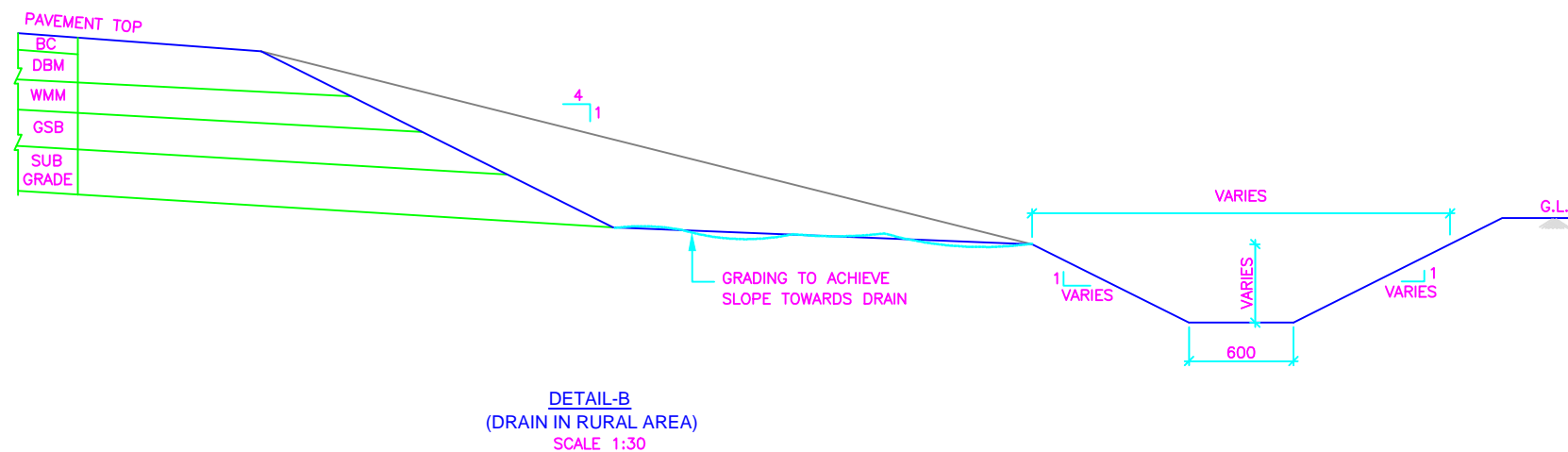
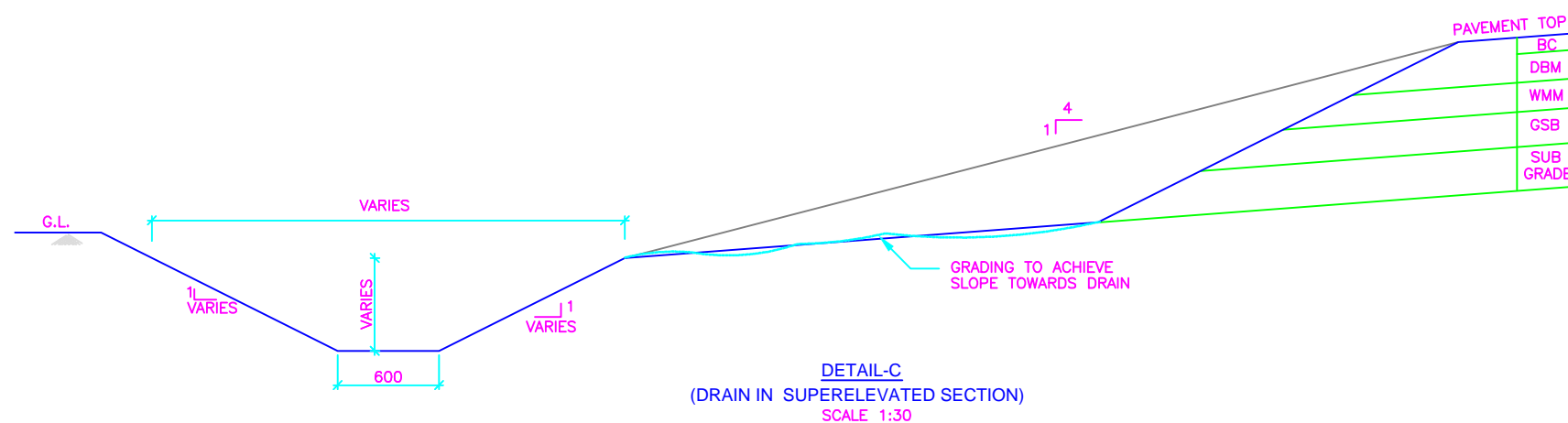
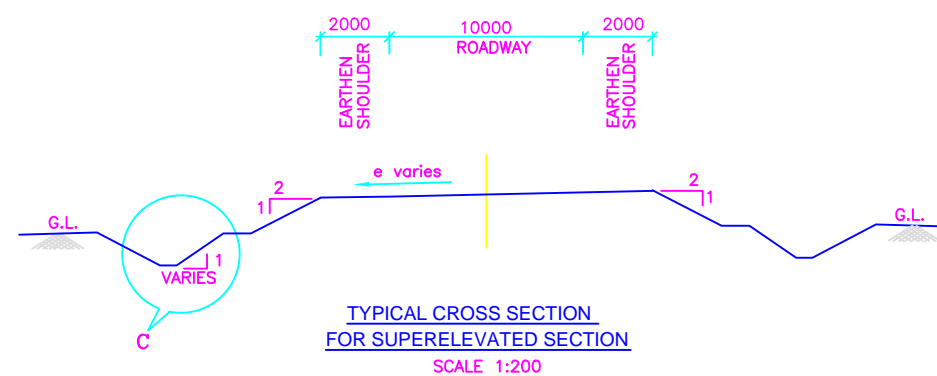
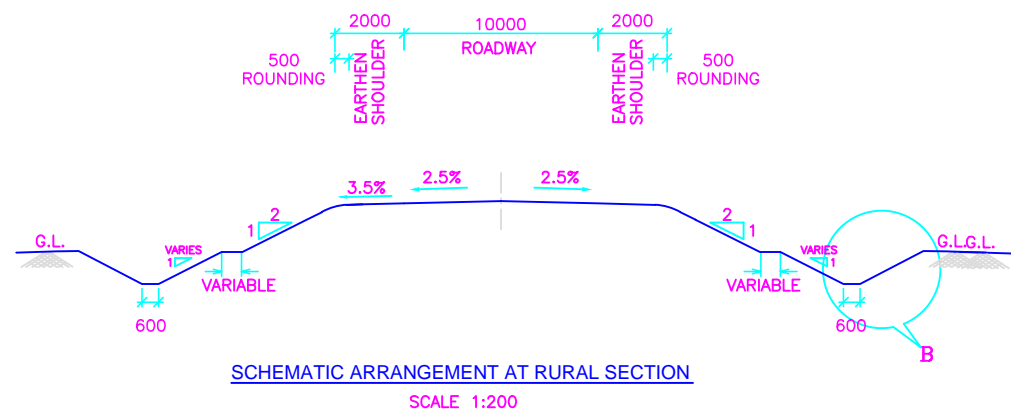
APPROVED BY.

-: PROJECT TITLE :-

CConsultancy Services for Preparation of  
Feasibility Study and Detailed Project Report For  
Two lane With Paved Shoulders of Tamenglong  
- Haflong Road In The State of Manipur on EPC  
Mode.

-: Typ. Details Temperature Reinf. :-

**AZURAM- MAKRU RIVER SECTION  
(PACKAGE-5)**



#### CONSTRUCTION NOTES:

- 1). MEDIAN CUTS SHALL BE PROVIDED AT 15M C/C.
- 2). FOUNDATION OF LINED DRAIN SHALL BE CAST IN PCC OF CONCRETE GRADE M15.
- 3). BASE AND SIDE WALLS OF LINED DRAIN AND CATCH PIT SHALL BE CAST IN M20 GRADE.
- 4). CATCHPIT TO BE PROVIDED AT DESIGNATED LOCATION OF OUTFALL.
- 5). SITE SPECIFIC ADJUSTMENTS TO BE MADE IN HILLY TERRAINS. CONCRETE LINED DRAIN SHOULD BE PROVIDED IN PLACE OF EARTHEN DRAIN

:- CONSULTANTS :-

**L.N. MALVIYA INFRA PROJECTS PVT. LTD.**

T-10, III FLOOR, CITY CENTER, PRESS COMPLEX, PLOT NO.-1,  
M.P. NAGAR, ZONE-I, BHOPAL (M.P.)



Tel./Fax : 0755-4295421,  
Mob.: 09826452711, 09977004686  
E-mail : [lninfra@projects@gmail.com](mailto:lninfra@projects@gmail.com)

:- CLIENT :-

**NATIONAL HIGHWAYS INFRASTRUCTURE  
DEVELOPMENT CORPORATION LIMITED (NHIDCL)**



DRG. NO. :

14

DESIGNED BY.

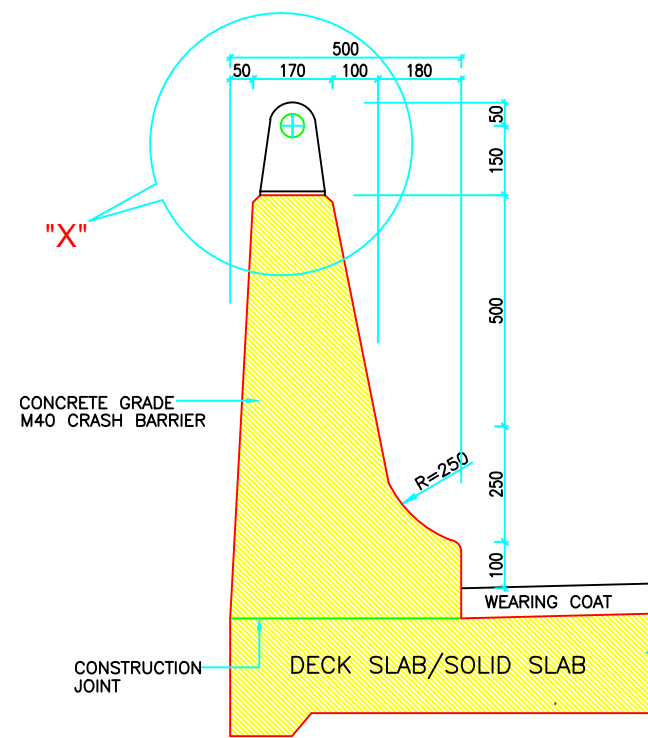
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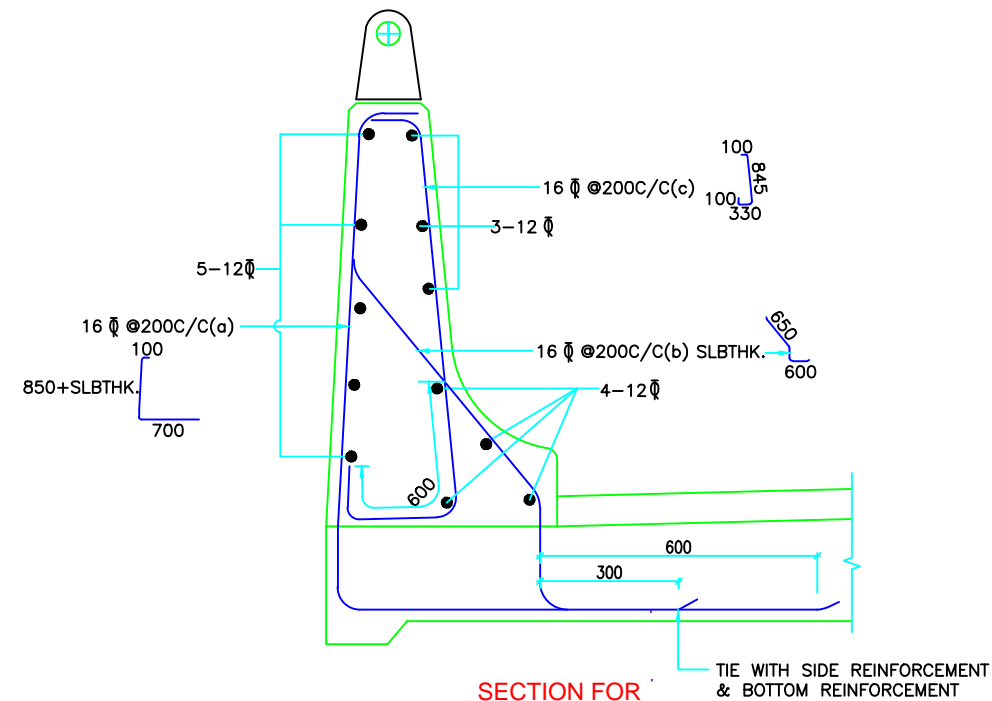
CConsultancy Services for Preparation of  
Feasibility Study and Detailed Project Report For  
Two lane With Paved Shoulders of Tamenglong  
- Haflong Road In The State of Manipur on EPC  
Mode.

:- EARTHEN DRAIN DRAWING :-

**AZURAM- MAKRU RIVER SECTION  
(PACKAGE-5)**

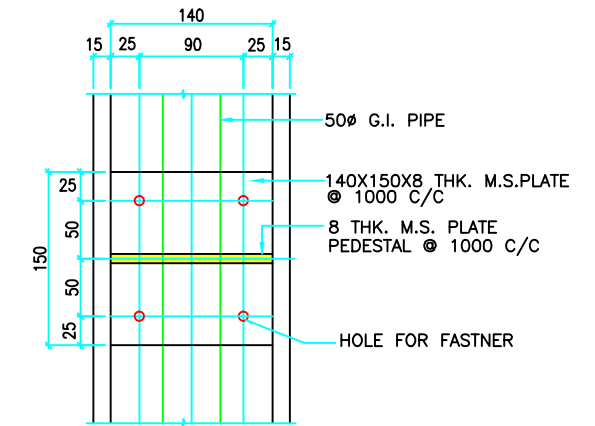


SECTION FOR  
CRASH BARRIER  
(DIMENSIONS ONLY)

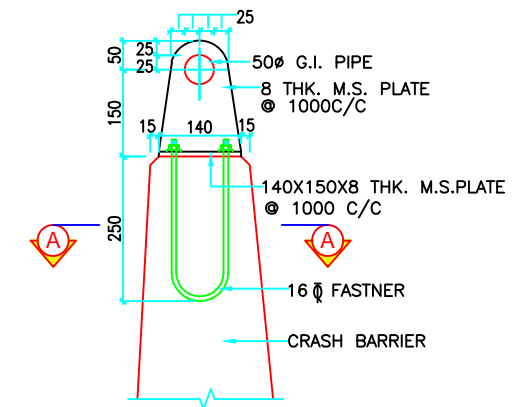


SECTION FOR  
CRASH BARRIER  
(REINFORCEMENT ONLY)

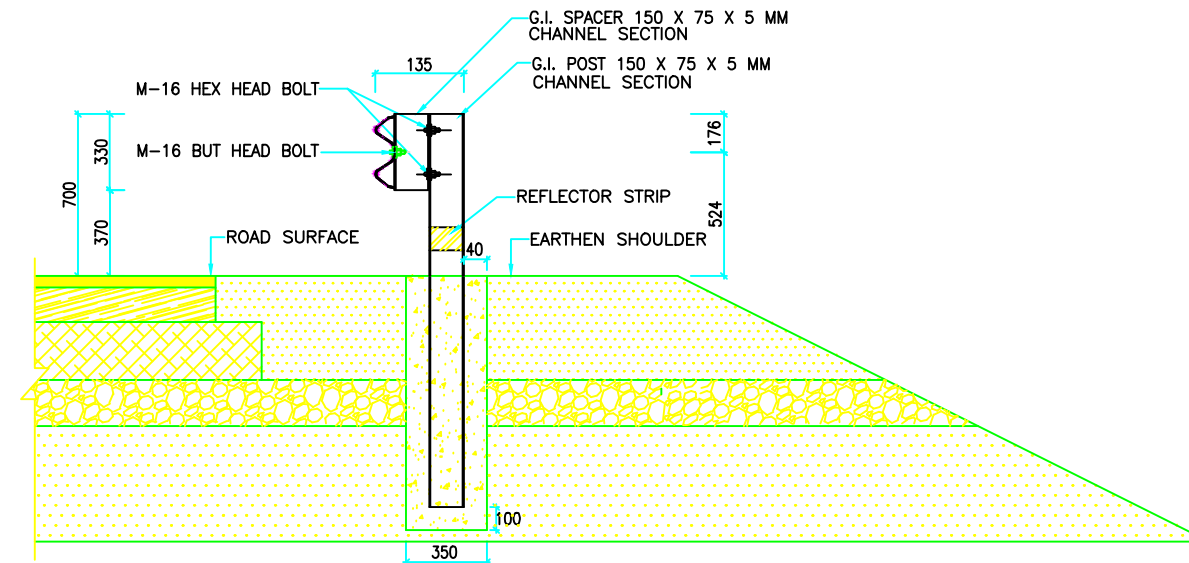
DETAILS OF CRASH BARRIER FOR DECK SLAB / RCC BOX  
SCALE 1:12.5



PLAN AT A-A  
SCALE 1:5



DETAIL "X"  
SCALE 1:10



DETAILS OF CRASH BARRIER FOR DECK WITH EARTH CUSHION  
SCALE 1:12.5

-- CONSULTANTS --

**L.N. MALVIYA INFRA PROJECTS PVT. LTD.**

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M.P. NAGAR, ZONE-I, BHOPAL (M.P.)



Tel./Fax : 0755-4295421,  
Mob.: 09826452711, 09977004686  
E-mail : [lninfra@projects@gmail.com](mailto:lninfra@projects@gmail.com)

-- CLIENT --

**NATIONAL HIGHWAYS INFRASTRUCTURE  
DEVELOPMENT CORPORATION LIMITED (NHIDCL)**



DRG. NO. :

**15**

DESIGNED BY.

APPROVED BY.

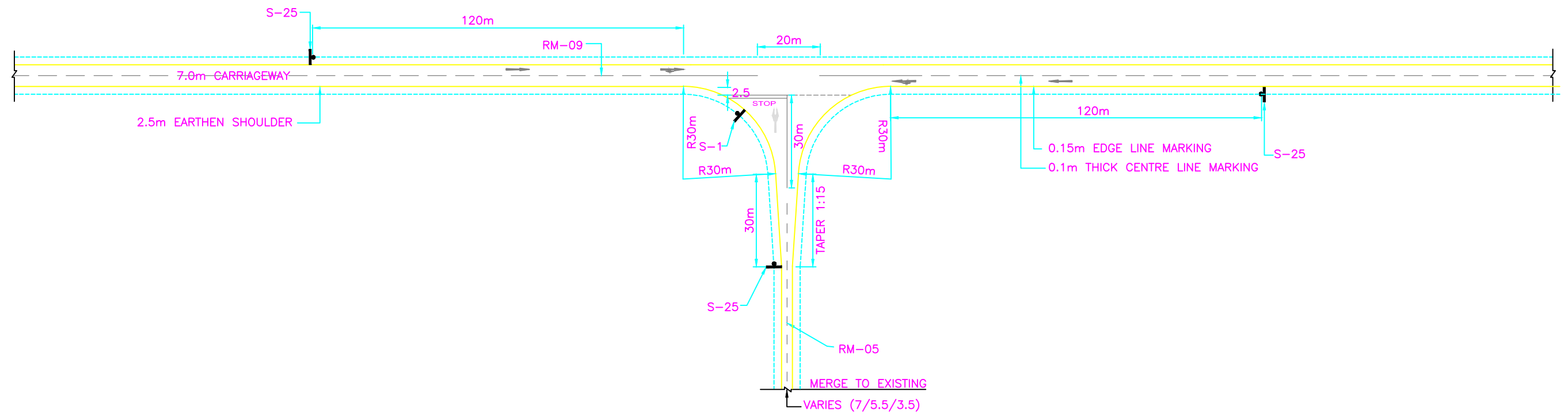
-- PROJECT TITLE --

CConsultancy Services for Preparation of  
Feasibility Study and Detailed Project Report For  
Two lane With Paved Shoulders of Tamenglong  
- Haflong Road In The State of Manipur on EPC  
Mode.



--RCC CRASH BARRIER--

**AZURAM- MAKRU RIVER SECTION  
(PACKAGE-5)**



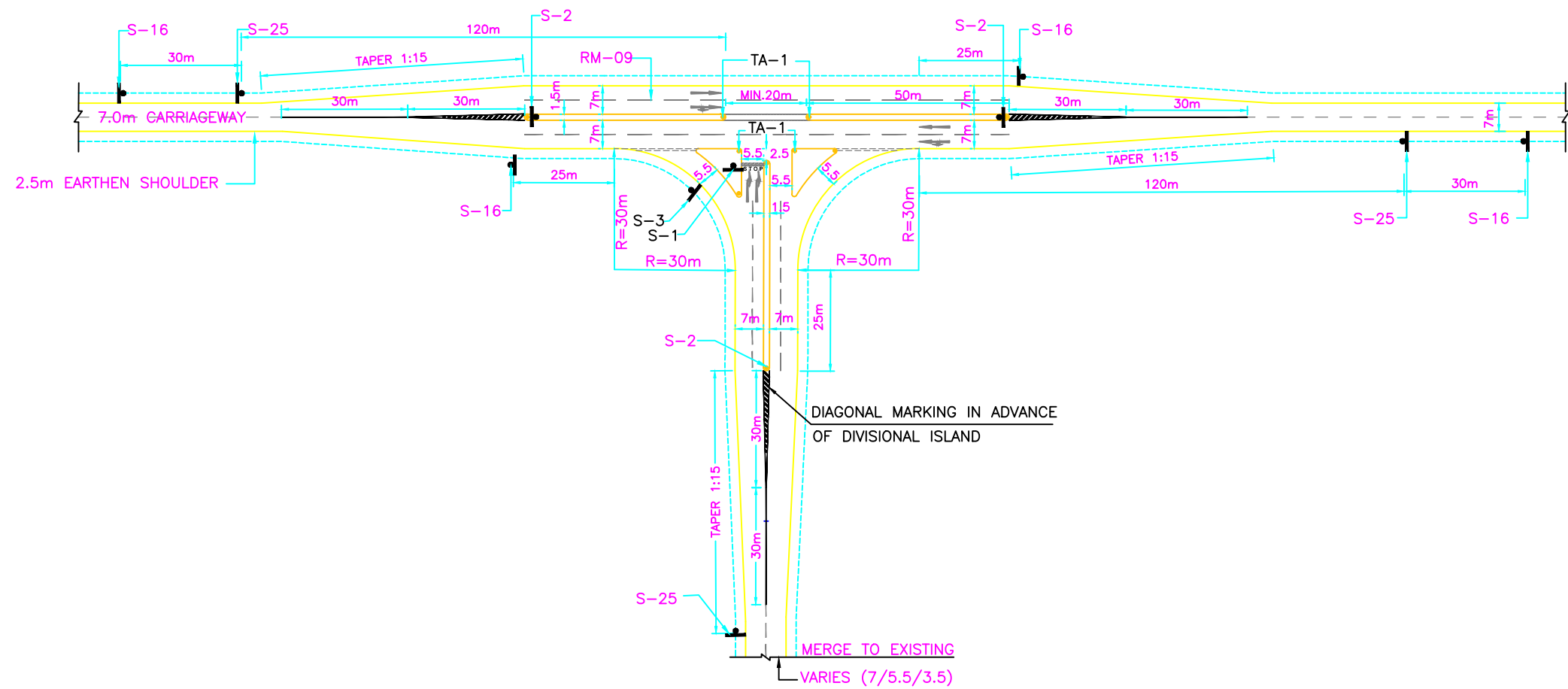


TYPE - II

--: CONSULTANTS :-	--: CLIENT :-	DRG. NO. :	DESIGNED BY.	APPROVED BY.	--: PROJECT TITLE :-	--: Junction Improvement Drawing:-
<b>L.N. MALVIYA INFRA PROJECTS PVT. LTD.</b> T-10, III FLOOR, CITY CENTER, PRESS COMPLEX, PLOT NO.-1, M.P. NAGAR, ZONE-I, BHOPAL (M.P.)  Tel./Fax : 0755-4295421, Mob.: 09826452711, 09977004686 E-mail : <a href="mailto:lninfra@projects@gmail.com">lninfra@projects@gmail.com</a>	<b>NATIONAL HIGHWAYS INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (NHIDCL)</b> 	16(b)			CConsultancy Services for Preparation of Feasibility Study and Detailed Project Report For Two lane With Paved Shoulders of Tamenglong - Haflong Road In The State of Manipur on EPC Mode.	TYPICAL LAYOUT OF THREE LEGGED LEFT IN LEFT OUT JUNCTION  <b>AZURAM- MAKRU RIVER SECTION (PACKAGE-5)</b>







TYPE - IV

-- CONSULTANTS --		-- CLIENT --		DRG. NO. :	DESIGNED BY.	APPROVED BY.	-- PROJECT TITLE --	-- Junction Improvement Drawing--
<b>L.N. MALVIYA INFRA PROJECTS PVT. LTD.</b> T-10, III FLOOR, CITY CENTER, PRESS COMPLEX, PLOT NO.-1, M.P. NAGAR, ZONE-I, BHOPAL (M.P.) Tel./Fax : 0755-4295421, Mob.: 09826452711, 09977004686 E-mail : <a href="mailto:lninfraprojects@gmail.com">lninfraprojects@gmail.com</a>		<b>NATIONAL HIGHWAYS INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (NHIDCL)</b>		16(d)			CConsultancy Services for Preparation of Feasibility Study and Detailed Project Report For Two lane With Paved Shoulders of Tamenglong - Haflong Road In The State of Manipur on EPC Mode.	TYPICAL LAYOUT OF THREE LEGGED CHANNELISED JUNCTION <b>AZURAM- MAKRU RIVER SECTION (PACKAGE-5)</b>

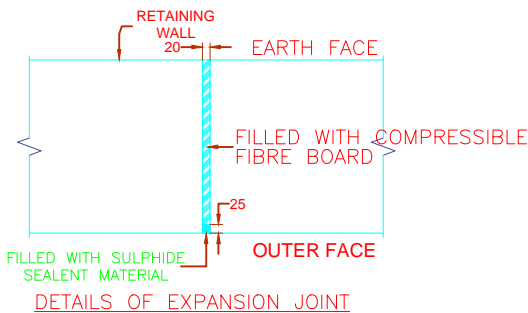


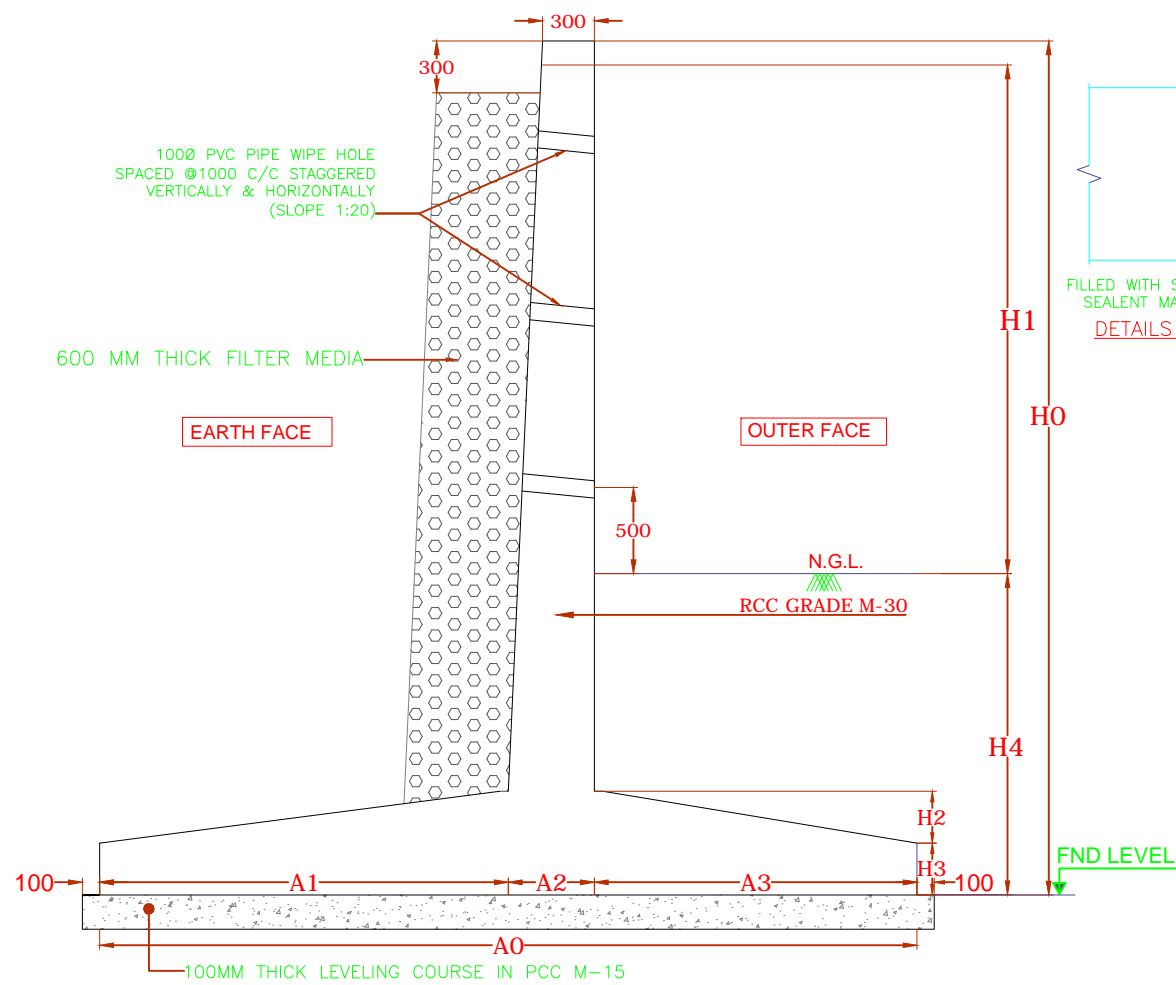


Diagram illustrating the reinforcement details of a retaining wall cross-section. The wall is shown with a vertical stem and a sloped base. The reinforcement bars are numbered 1 through 9, indicating their positions and lengths. The wall is filled with compressible fibre board. The top face is labeled "EARTH FACE" and the bottom face is labeled "OUTER FACE". An "EXPANSION JOINT" is indicated at the base of the stem. The diagram also shows the "FILLED WITH COMPRESSIBLE FIBRE BOARD" section.

SERIAL NO.	OVERALL HEIGHT H0 (mm)	HEIGHT ABOVE OF GL H1 (mm)	H2 (mm)	H3 (mm)	H4 (mm)	A0 (mm)	A1 (mm)	A2 (mm)	A3 (mm)
1	5000	3000	500	300	2000	3650	1100	550	2000

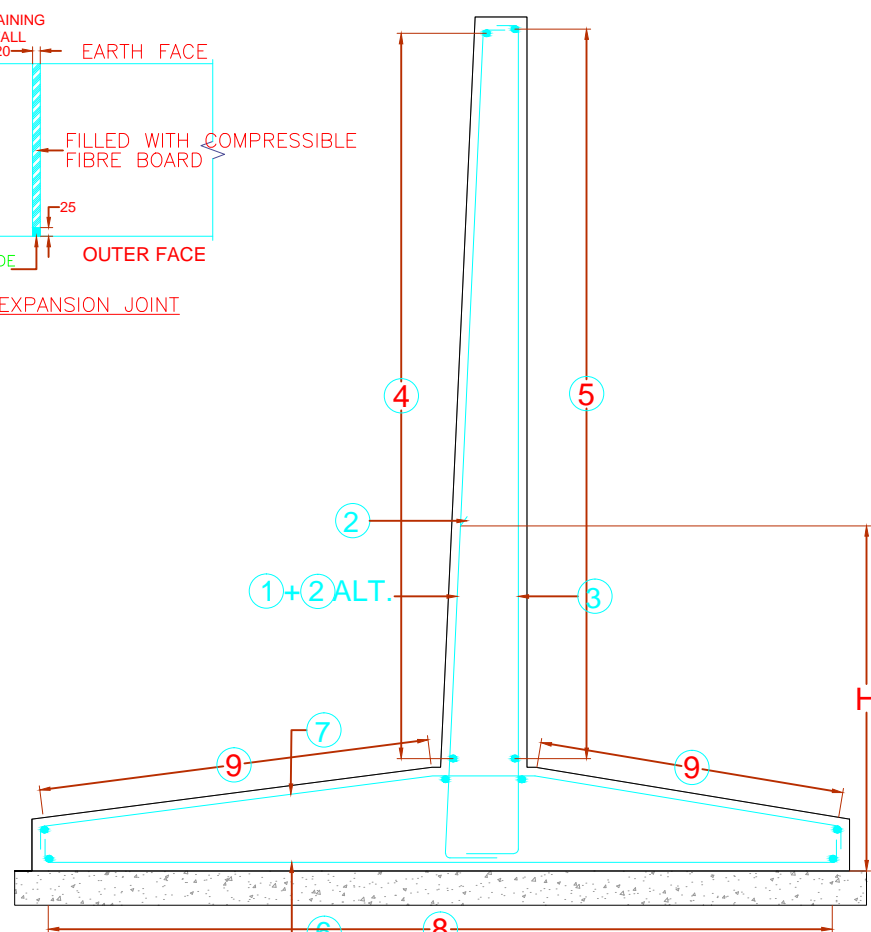
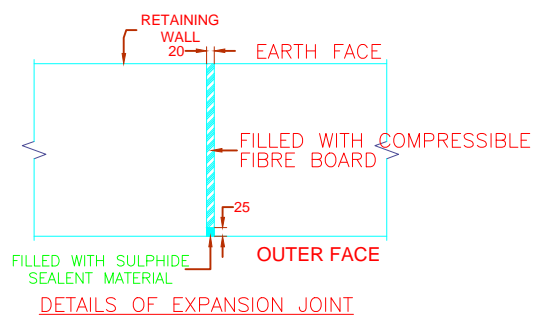
- |   |  |   |  |            |              |              |  |  |
|---|--|---|--|------------|--------------|--------------|--|--|
| -: CONSULTANTS :-   |  | -: CLIENT :-  |  | DRG. NO. : | DESIGNED BY. | APPROVED BY. | -: PROJECT TITLE :-  | -:General Arrangement Drawing:-                                      |
| <b>L.N. MALVIYA INFRA PROJECTS PVT. LTD.</b><br>T-10, III FLOOR, CITY CENTER, PRESS COMPLEX, PLOT NO.-1,<br>M.P. NAGAR, ZONE-I, BHOPAL (M.P.)<br> Tel./Fax : 0755-4295421,<br>Mob. : 09826452711, 09977004686<br>E-mail : <a href="mailto:lninfra@lninfra.com">lninfra@lninfra.com</a> |  | <b>NATIONAL HIGHWAYS INFRASTRUCTURE<br/>DEVELOPMENT CORPORATION LIMITED (NHIDCL)</b><br> |  | 17         |              |              | Consultancy Services for Preparation of Feasibility Study<br>and Detailed Project Report For Two lane With Paved<br>Shoulders of Tamenglong - Haflong Road In The State of<br>Manipur on EPC Mode. | <b>GAD</b><br><br><b>AZURAM- MAKRU RIVER SECTION<br/>(PACKAGE-5)</b> |



**DIMENSION DETAIL SECTION**

**DIMENSION DETAIL:-**

SERIAL NO.	OVERALL HEIGHT H0 (mm)	HEIGHT ABOVE OF GL H1 (mm)	H2 (mm)	H3 (mm)	H4 (mm)	A0 (mm)	A1 (mm)	A2 (mm)	A3 (mm)
1	5000	3000	500	300	2000	3500	1200	500	1800



**REINFORCEMENT DETAILS**

**NOTES:-**

- ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS MENTIONED OTHERWISE.
- NO DIMENSIONS SHALL BE SCALED FROM THE DRAWING .ONLY WRITTEN DIMENSION ARE TO BE FOLLOWED.
- LAYING COMPACTION AND EXTENT OF BACKFILL BEHIND RETAINING WALL SHALL CONFIRM TO APPENDIX - 6 IRC-78-2014
- WEEP HOLES OF DIAMETER 100mm. SHALL BE PROVIDED AT SUITABLE STAGGERED SPACING NOT EXCEEDING 1M IN BOTH DIRECTION FOR RETAINING WALL.
- GRADE FOR CONCRETE FOR RETAINING WALL IS M-30.
- BACKFILL GRANULAR SOIL MATERIAL BEHIND WALL SHALL BE LAID AS PER APPENDIX 6 OF IRC: 78-2014. THE  $\text{DFCD9FH9G'5F9'7'1'SZ}\ll'12''Ssz'' = 20\text{KN/CU.M}$
- GRADE OF STEEL Fe 500 AS PER IS 1786.
- CLEAR COVER TO REINFORCEMENT SHALL BE AS FOLLOWS.  
i) FOR STEM : OUTER FACE = 50mm AND EARTH FACE = 75mm  
ii) FOR BASE SLAB 75mm
- EARTH FILL ON BOTH SIDES OF RETAINING WALL SHALL BE DONE SIMULTANEOUSLY.
- SAND FILLING OF MIN. 300mm WILL BE DONE BELOW FOUNDATION WHEREVER CLAYEY SOIL IS PRESENT.
- DRAWING IS VALID FOR HORIZONTAL EARTH FACE ONLY.
- LAPPING OF REINFORCEMENT SHALL BE AVOIDED AS FAR AS POSSIBLE .IN CASE LAPPING OF BARS BECOMES UNAVOIDABLE MINIMUM LAP LENGTH OF REINFORCEMENT BARS SHALL BE CALCULATED AS FOLLOWS WITH MAXIMUM ALLOWABLE LAPPING  
(p) OF 50% ONLY  
(IRC : 112:2011), (CLAUSE: 15.2.5.12)  
LAP LENGTH  $\begin{matrix} g'1' \% "VbYh \\ \%l' \% "S': CF'di @25\% \\ \%l' \% "': CF' \& i @p\% @33\% \\ \%l' \% ("': CF' ' ' 1 @p\% @50\% \end{matrix}$   
(IRC: 112=2011) (CLAUSE: 15.2.3.3)  
DEVELOPMENT LENGTH (lbnet)  
 $\begin{matrix} VB9Hi "Vfi '1 \%SL \\ V'1_ \ll \\ k = 40 \text{ FOR } M30(\text{Fe}500) \\ k = 36 \text{ FOR } M35(\text{Fe}500) \\ k = 34 \text{ FOR } M40(\text{Fe}500) \end{matrix}$   
FOR UNFAVORABLE BOND CONDITION THE lb SHOULD BE MULTIPLIED BY :  $57HCF'C: \%('': CF' \ll 2' \& a a 'VzG<CI \& 69' =B7F95G98'6MAI @HD@4B; : 57HCF'fB\%S\% \& l' \ll$

**:- CONSULTANTS :-**

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**:-: CLIENT :-:**

**NATIONAL HIGHWAYS INFRASTRUCTURE  
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DRG. NO. :

**18**

DESIGNED BY.

APPROVED BY.

**:-: PROJECT TITLE :-:**

Consultancy Services for Preparation of Feasibility Study  
and Detailed Project Report For Two lane With Paved  
Shoulders of Tamenglong - Haflong Road In The State of  
Manipur on EPC Mode.

**:-:General Arrangement Drawing:-:**

GAD

**AZURAM- MAKRU RIVER SECTION  
(PACKAGE-5)**