

DETAILED PROJECT REPORT

R-1: November' 2020)

Consultancy Services for Preparation of Feasibility Study and Detailed Project Report for Development & Construction of Emergency Landing facilities of National Highways Moran Bypass (New Alignment) from Km. 550+600 to Km. 554+800 (total 4.20 Kms.) of NH-37 in the State of Assam under National Highway Authority of India (N.H.A.I).



SUBMITTED TO

NATIONAL HIGHWAYS AUTHORITY OF INDIA (N.H.A.I)

**REGIONAL OFFICE- GUWAHATI,
NEDFI HOUSE, 4TH FLOOR, G.S. ROAD, DISPUR,
GUWAHATI- 781006, ASSAM**

SUBMITTED BY

NPEC CONSULTANCY PRIVATE LIMITED

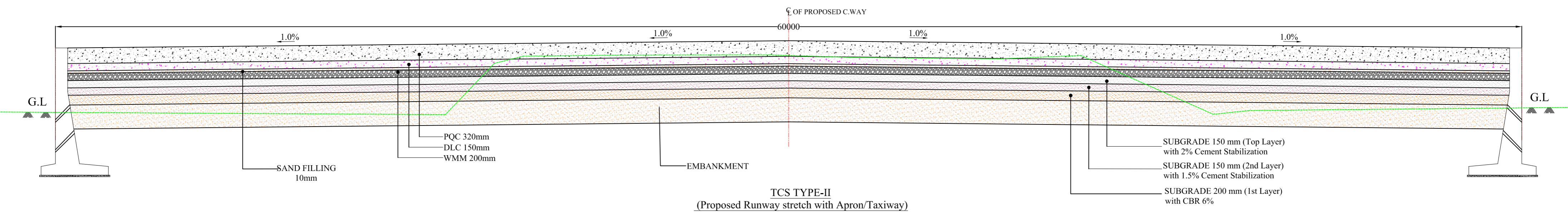
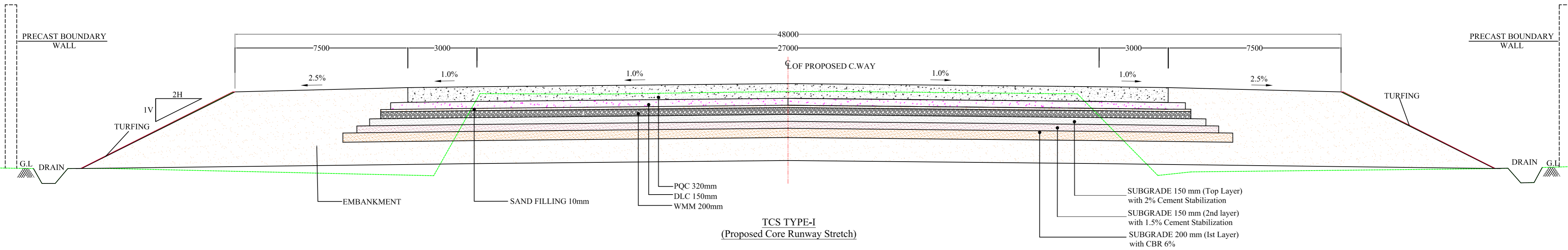
418, GROUND FLOOR

SARASWATI KUNJ, SECTOR 53

GURGAON-122011, HARYANA

TEL : +91 124 7178108, EMAIL : bd@npec.co.in

TYPICAL CROSS SECTION (T.C.S.)



NOTES:-

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS SPECIFIED OTHERWISE.
2. ALL WORK DEPICTED IN CROSS SECTION FOR CARRIAGEWAY/ SUBGRADE/ PAVEMENT LAYERS, BENCHING SHALL BE CARRIED OUT IN ACCORDANCE WITH RELEVANT CLAUSES OF MORTH SPECIFICATION.
3. WHEREVER THERE IS CHANGE IN WIDTH OF CROSS SECTION, CARRIAGEWAY, PAVED/ GRANULAR SHOULDER, TAPER SHALL BE PROVIDED AS PER IRC-SP:84.
4. NO W-BEAM CRASH BARRIER SHALL BE PROVIDED FOR EMBANKMENT HEIGHT > 3M AS PER IRC-SP:84 IN RUNWAY SECTION.
5. CARRIAGEWAY OF 27M WIDTH WITH 3M EACH PAVED SHOULDER OF EQUAL STRENGTH OF M:40 GRADE PQC i.e., 33MC SHALL BE PROVIDED WITH CARRIAGEWAY CONTROL LINE, WILL BE IN THE MEDIAN AND FRL/ CROSS FALL SHALL BE AS PER M.O.D AND IRC GUIDELINE.
6. TRANSVERSE GRADIENT/CAMBER IN RUNWAY PAVEMENT SHALL BE 1.0% FOR PAVED SHOULDER 1.5% AND IN EARTHEN SHOULDER 2.5%
7. BOUNDARY STONE, KILOMETER STONE, HECTOMETER STONE WILL BE PROVIDED AS PER CODAL PROVISION & DETAILS WILL BE SUBMITTED SEPARATELY WITH ROAD FURNITURE DRAWINGS.

8. DRAINS IF PROVIDED SHOULD BE COVERED AND COVER SHOULD BE CAPABLE OF RESISTING/ BERAING 25 TONS.
9. SLOPE PROTECTION AND EROSION CONTROL WHEREVER APPLICABLE SHALL BE PROVIDED AS PER IRC-SP: 84. HOWEVER, FOR THIS RUNWAY SECTION "GLASS TURFING" ONLY CONSIDERED TO MINIMIZE THE COST.
10. TCS SCHEDULE GIVEN MAY VARY AS PER FINAL PLAN & PROFIL DRAWING & MOD/ AIRFORCE GUIDELINES.
11. CRUST THICKNESS SHALL BE AS PER PAVMENT DESIGN & AIRPORT MANUALS 50 PCN. IN THIS CASE SUBGRADE 2 LAYERS PROPOSED TO BE CEMENT STABILIZED FOR ACHIEVING 40 TO 60 MN/MV/M SUBGRADE STRENGTH OR 8% TO 10% CBR OF SUBGRADE.
12. OBSTRUCTIONS: FREE FROM ALL OBSTRUCTIONS LIKE MEDIAN, SIGNBOARDS, TREES, FENCING, SIDE WALLS, HIGH TENSION CABLES. POLES OR ANY OTHER OBSTRUCTION.
13. ALL SPECIFICATIONS TO BE FOLLOWED ARE IRC-SP: 84: 2014, MORTH & IRC SPECIFICATION FOLLOWED BY MES/ MINISTRY OF DEFENSE GUIDELINES/ MANUALS. 14 ALL DESIGNS TO BE VETTED AND APPROVED BY AUTHORITY/ ITS ENGINEER/ MINISTRY OF DEFENSE BEFORE COMMENCEMENT OF WORK.

CLIENT :



Regional Office, Guwahati, NEDFi House, 4th Floor, G.S. Road
Dispur, Guwahati - 781006, Assam.

DPR CONSULTANTS:



Plot no. 418, Ground Floor, Saraswati kunj, Sector-53,
Gurgaon, Haryana-122002

PROJECT :

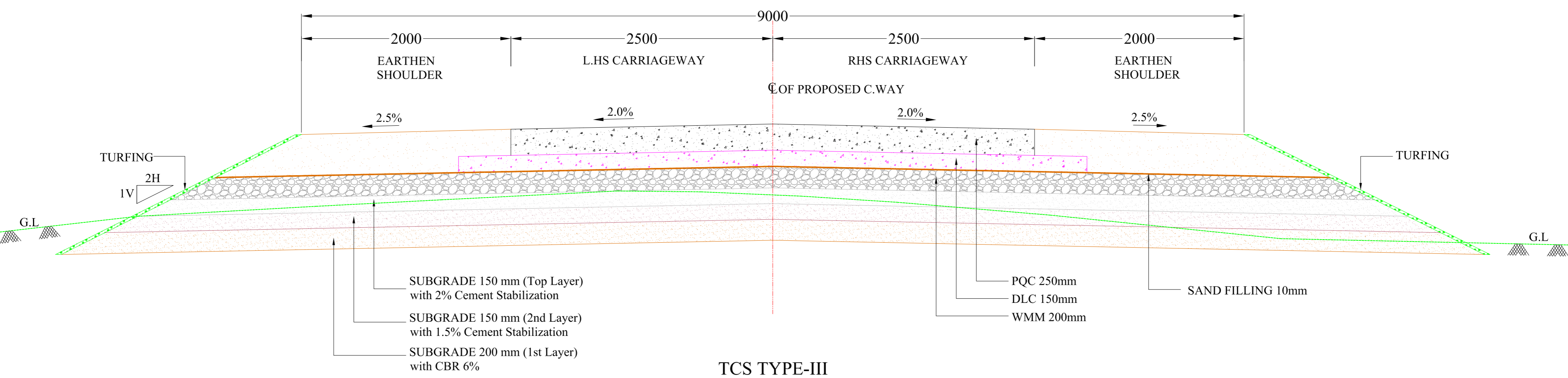
Consultancy Services for Preparation of Feasibility Study and Detailed Project Report for Development & Construction of Emergency Landing facilities of National Highways Moran Bypass (New Alignment) from Km. 550+500 to Km. 554+800 (total 4.30 Kms.) of NH-37 in the State of Assam under National Highway Authority of India (N.H.A.I).

REV.	DATE	DESCRIPTION
R1	11.11.2020	Submission For Approval
R0	07.09.2020	First Submission

DRAWN BY :	D.D.
DESIGNED BY :	N.R.
CHECKED BY :	S.K.S.
APPROVED BY :	B.P.
DATE :	07/09/2020

TITLE :	TYPICAL CROSS SECTION I & II
DRG. NO. :	DRG NO.: NHA/RO/GHY/NH-37/E.RLANG/NPEC/TCS/ 01
CHAINAGE :	

TCS TYPE-III
(For ATC Connecting Road)



CLIENT :



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Dispur, Guwahati - 781006, Assam.

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DESIGNED BY :	N.R.
CHECKED BY :	S.K.S.
APPROVED BY :	B.P.
DATE :	07/09/2020

TITLE :	TYPICAL CROSS SECTION III.
DRG. NO. :	DRG NO.: NHAI/RO/GHY/NH-37/E.RLANG/NPEC/TCS/02
CHAINAGE :	

PLAN & PROFILE FROM KM. 550+500 TO KM. 554+800

NOTES:

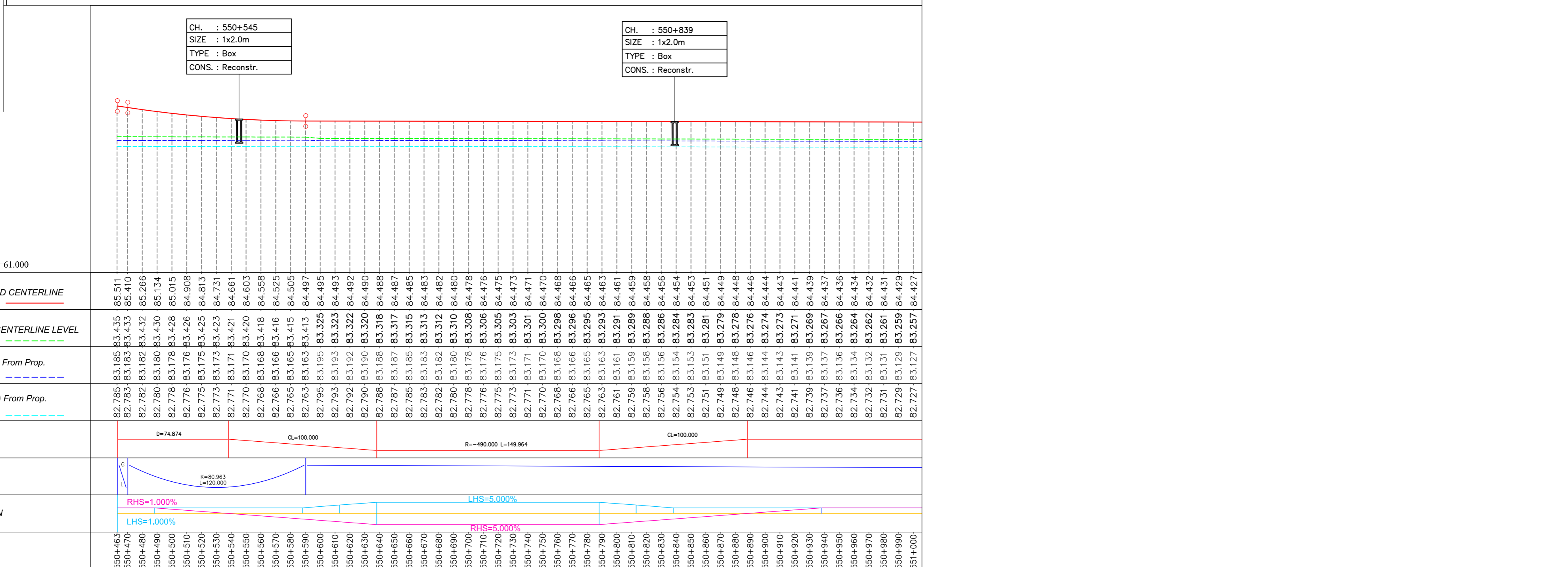
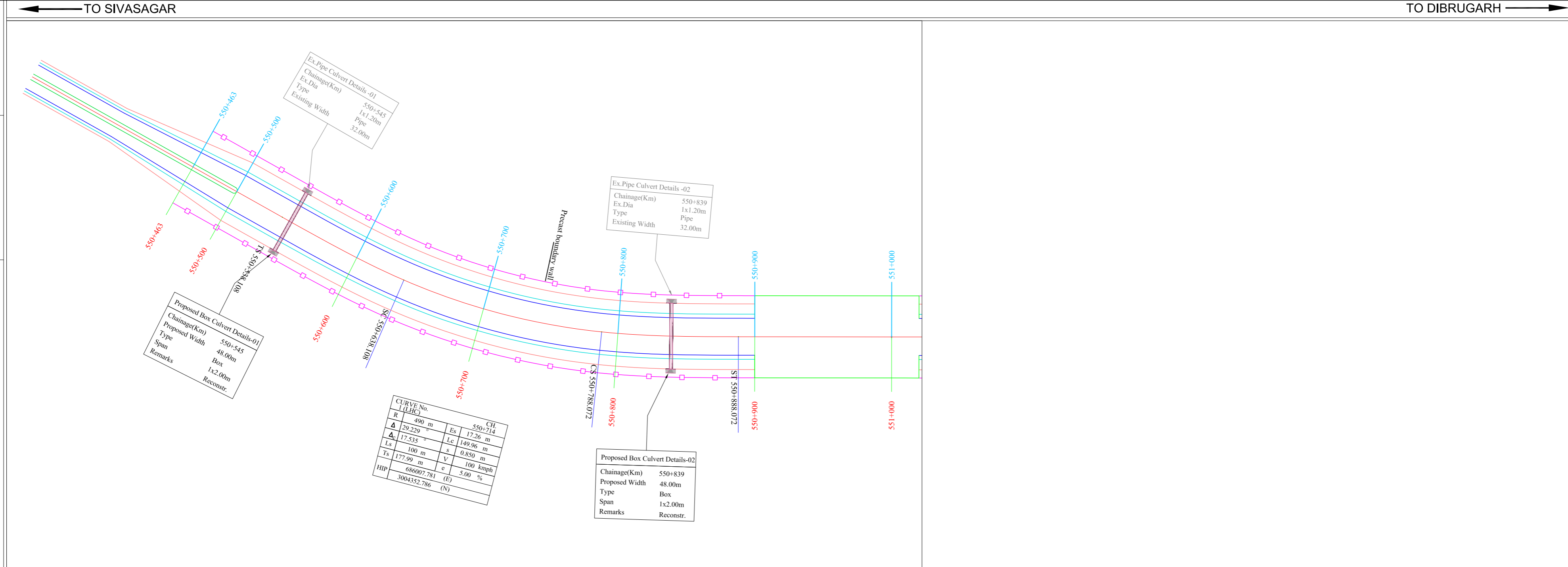
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LEGEND

HORIZONTAL PLAN

- PROPOSED CL —
- PRO. HARD SHOULDER —
- PRO. CARRIAGEWAY —
- PAVED SHOULDER —
- EARTHEN SHOULDER —
- PROPOSED ROW —
- PROPOSED DRAIN —
- EXISTING ROW —
- EXISTING ROAD —

- GPS Pillar
- BM Pillar
- Name Board
- Electric Pole
- Ext. Trees
- Transformer
- 200 m Stone
- Handpump
- Borewell
- OFC Pillar
- Telephone Box
- KM Stone
- Pylon
- Gaurd Stone
- Traffic Signal Board
- High Mast Post
- Lamp Pole



CHAINAGE (m)	550+463	550+470	550+480	550+490	550+500	550+510	550+520	550+530	550+540	550+550	550+560	550+570	550+580	550+590	550+600	550+610	550+620	550+630	550+640	550+650	550+660	550+670	550+680	550+690	550+700	550+710	550+720	550+730	550+740	550+750	550+760	550+770	550+780	550+790	550+800	550+810	550+820	550+830	550+840	550+850	550+860	550+870	550+880	550+890	550+900	550+910	550+920	550+930	550+940	550+950	550+960	550+970	550+980	550+990	551+000																																																																																																																																																																																																																																																																																																																																																																																		
FRL AT PROPOSED CENTERLINE	85.511	85.410	85.266	85.134	85.015	84.908	84.813	84.731	84.661	84.603	84.558	84.525	84.505	84.497	84.495	84.493	84.492	84.490	84.488	84.487	84.485	84.483	84.482	84.480	84.478	84.476	84.475	84.473	84.471	84.470	84.468	84.466	84.465	84.463	84.461	84.459	84.458	84.456	84.454	84.453	84.451	84.449	84.448	84.446	84.444	84.443	84.441	84.439	84.437	84.436	84.434	84.432	84.431	84.429	84.427																																																																																																																																																																																																																																																																																																																																																																																		
EXISTING ROAD CENTERLINE LEVEL	83.435	83.433	83.432	83.430	83.428	83.426	83.425	83.423	83.421	83.420	83.418	83.416	83.415	83.413	83.411	83.409	83.408	83.407	83.406	83.405	83.404	83.403	83.402	83.401	83.400	83.399	83.398	83.397	83.396	83.395	83.394	83.393	83.392	83.391	83.390	83.389	83.388	83.387	83.386	83.385	83.384	83.383	83.382	83.381	83.380	83.379	83.378	83.377	83.376	83.375	83.374	83.373	83.372	83.371	83.370	83.369	83.368	83.367	83.366	83.365	83.364	83.363	83.362	83.361	83.360	83.359	83.358	83.357	83.356	83.355	83.354	83.353	83.352	83.351	83.350	83.349	83.348	83.347	83.346	83.345	83.344	83.343	83.342	83.341	83.340	83.339	83.338	83.337	83.336	83.335	83.334	83.333	83.332	83.331	83.330	83.329	83.328	83.327	83.326	83.325	83.324	83.323	83.322	83.321	83.320	83.319	83.318	83.317	83.316	83.315	83.314	83.313	83.312	83.311	83.310	83.309	83.308	83.307	83.306	83.305	83.304	83.303	83.302	83.301	83.300	83.299	83.298	83.297	83.296	83.295	83.294	83.293	83.292	83.291	83.290	83.289	83.288	83.287	83.286	83.285	83.284	83.283	83.282	83.281	83.280	83.279	83.278	83.277	83.276	83.275	83.274	83.273	83.272	83.271	83.270	83.269	83.268	83.267	83.266	83.265	83.264	83.263	83.262	83.261	83.260	83.259	83.258	83.257	83.256	83.255	83.254	83.253	83.252	83.251	83.250	83.249	83.248	83.247	83.246	83.245	83.244	83.243	83.242	83.241	83.240	83.239	83.238	83.237	83.236	83.235	83.234	83.233	83.232	83.231	83.230	83.229	83.228	83.227	83.226	83.225	83.224	83.223	83.222	83.221	83.220	83.219	83.218	83.217	83.216	83.215	83.214	83.213	83.212	83.211	83.210	83.209	83.208	83.207	83.206	83.205	83.204	83.203	83.202	83.201	83.200	83.199	83.198	83.197	83.196	83.195	83.194	83.193	83.192	83.191	83.190	83.189	83.188	83.187	83.186	83.185	83.184	83.183	83.182	83.181	83.180	83.179	83.178	83.177	83.176	83.175	83.174	83.173	83.172	83.171	83.170	83.169	83.168	83.167	83.166	83.165	83.164	83.163	83.162	83.161	83.160	83.159	83.158	83.157	83.156	83.155	83.154	83.153	83.152	83.151	83.150	83.149	83.148	83.147	83.146	83.145	83.144	83.143	83.142	83.141	83.140	83.139	83.138	83.137	83.136	83.135	83.134	83.133	83.132	83.131	83.130	83.129	83.128	83.127	83.126	83.125	83.124	83.123	83.122	83.121	83.120	83.119	83.118	83.117	83.116	83.115	83.114	83.113	83.112	83.111	83.110	83.109	83.108	83.107	83.106	83.105	83.104	83.103	83.102	83.101	83.100	83.099	83.098	83.097	83.096	83.095	83.094	83.093	83.092	83.091	83.090	83.089	83.088	83.087	83.086	83.085	83.084	83.083	83.082	83.081	83.080	83.079	83.078	83.077	83.076	83.075	83.074	83.073	83.072	83.071	83.070	83.069	83.068	83.067	83.066	83.065	83.064	83.063	83.062	83.061	83.060	83.059	83.058	83.057	83.056	83.055	83.054	83.053	83.052	83.051	83.050	83.049	83.048	83.047	83.046	83.045	83.044	83.043	83.042	83.041	83.040	83.039	83.038	83.037	83.036	83.035	83.034	83.033	83.032	83.031	83.030	83.029	83.028	83.027	83.026	83.025	83.024	83.023	83.022	83.021	83.020	83.019	83.018	83.017	83.016	83.015	83.014	83.013	83.012	83.011	83.010	83.009	83.008	83.007	83.006	83.005	83.004	83.003	83.002	83.001	83.000
OGL AT 20m (LHS) From Prop. CENTER LINE	82.785	82.783	82.782	82.780	82.778	82.776	82.775	82.773	82.771	82.770	82.768	82.766	82.765	82.763	82.795	82.793	82.792	82.790	82.788	82.787	82.785	82.783	82.782	82.780	82.778	82.776	82.775	82.773	82.771	82.770	82.768	82.766	82.765	82.763	82.761	82.759	82.758	82.756	82.754	82.753	82.751	82.749	82.748	82.746	82.744	82.743	82.741	82.739	82.737	82.736	82.734	82.732	82.731	82.729	82.727	82.726	82.725	82.724	82.723	82.722	82.721	82.720	82.719	82.718	82.717	82.716	82.715	82.714	82.713	82.712	82.711	82.710	82.709	82.708	82.707	82.706	82.705	82.704	82.703	82.702	82.701	82.700	82.699	82.698	82.697	82.696	82.695	82.694	82.693	82.692	82.691	82.690	82.689	82.688	82.687	82.686	82.685	82.684	82.683	82.682	82.681	82.680	82.679	82.678	82.677	82.676	82.675	82.674	82.673	82.672	82.671	82.670	82.669	82.668	82.667	82.666	82.665	82.664	82.663	82.662	82.661	82.660	82.659	82.658	82.657	82.656	82.655	82.654	82.653	82.652	82.651	82.650	82.649	82.648	82.647	82.646	82.645	82.644	82.643	82.642	82.641	82.640	82.639	82.638	82.637	82.636	82.635	82.634	82.633	82.632	82.631	82.630	82.629	82.628	82.627	82.626	82.625	82.624	82.623	82.622	82.621	82.620	82.619	82.618	82.617	82.616	82.615	82.614	82.613	82.612	82.611	82.610	82.609	82.608	82.607	82.606	82.605	82.604	82.603	82.602	82.601	82.600	82.599	82.598	82.597	82.596	82.595	82.594	82.593	82.592	82.591	82.590	82.589	82.588	82.587	82.586	82.585	82.584	82.583	82.582	82.581	82.580	82.579	82.578	82.577	82.576	82.575	82.574	82.573	82.572	82.571	82.570	82.569	82.568	82.567	82.566	82.565	82.564	82.563	82.562	82.561	82.560	82.559	82.558	82.557	82.556	82.555	82.554	82.553	82.552	82.551	82.550	82.549	82.548	82.547	82.546	82.545	82.544	82.543	82.542	82.541	82.540	82.539	82.538	82.537	82.536	82.535	82.534	82.533	82.532	82.531	82.530	82.529	82.528	82.527	82.526	82.525	82.524	82.523	82.522	82.521	82.520	82.519	82.518	82.517	82.516	82.515	82.514	82.513	82.512	82.511	82.510	82.509	82.508	82.507	82.506	82.505	82.504	82.503	82.502	82.501	82.500																																																																																																																																															
OGL AT 20m (RHS) From Prop. CENTER LINE	82.785	82.783	82.782	82.780	82.778	82.776	82.775	82.773	82.771	82.770	82.768	82.766	82.765	82.763	82.795	82.793	82.792	82.790	82.788	82.787	82.785	82.783	82.782	82.780	82.778	82.776	82.775	82.773	82.771	82.770	82.768	82.766	82.765	82.763	82.761	82.759	82.758	82.756	82.754	82.753	82.751	82.749	82.748	82.746	82.744	82.743	82.741	82.739	82.737	82.736	82.734	82.732	82.731	82.729	82.727	82.726	82.725	82.724	82.723	82.722	82.721	82.720	82.719	82.718	82.717	82.716	82.715	82.714	82.713	82.712	82.711	82.710	82.709	82.708	82.707	82.706	82.705	82.704	82.703	82.702	82.701	82.700	82.699	82.698	82.697	82.696	82.695	82.694	82.693	82.692	82.691	82.690	82.689	82.688	82.687	82.686	82.685	82.684	82.683	82.682	82.681	82.680	82.679	82.678	82.677	82																																																																																																																																																																																																																																																																																																																															

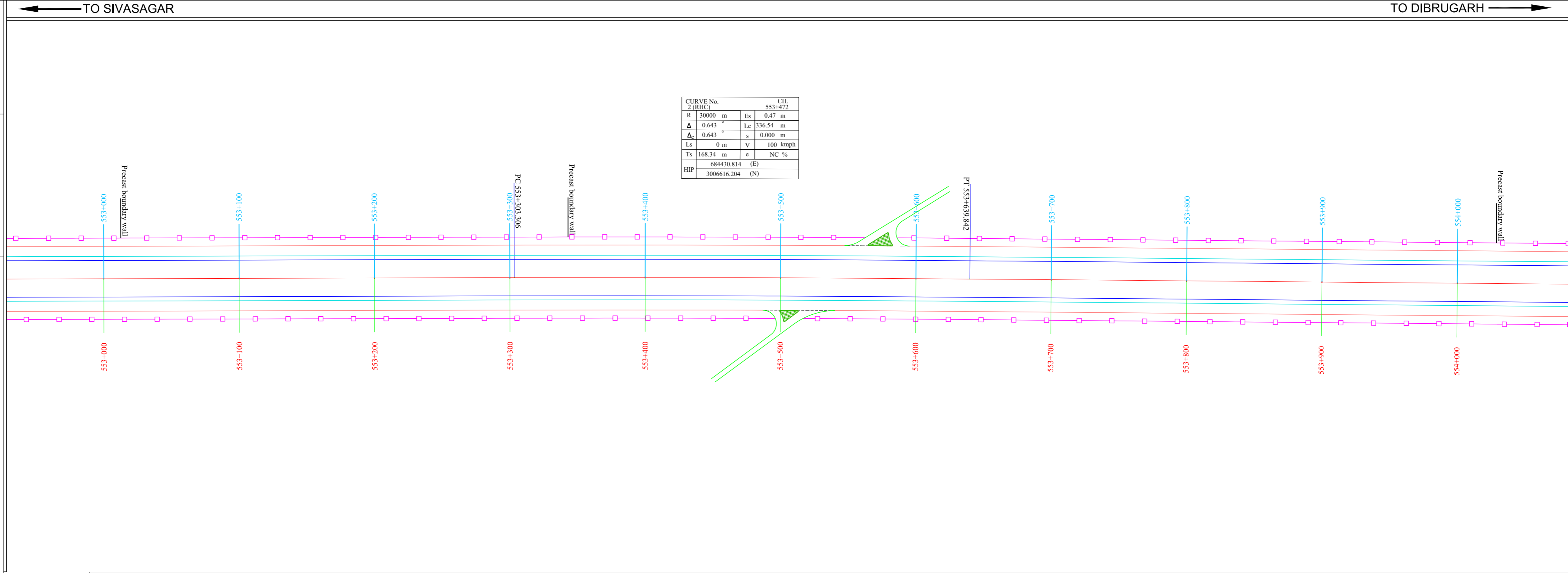
NOTES:

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LEGEND
HORIZONTAL PLAN

- PROPOSED CL —
- PRO. HARD SHOULDER —
- PRO. CARRIAGEWAY —
- PAVED SHOULDER —
- EARTHEN SHOULDER —
- PROPOSED ROW —
- PROPOSED DRAIN —
- EXISTING ROW —
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- GPS Pillar
- BM Pillar
- Name Board
- Electric Pole
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- 200 m Stone
- Handpump
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- OFC Pillar
- Telephone Box
- KM Stone
- Pylon
- Gaurd Stone
- Traffic Signal Board
- High Mast Post
- Lamp Pole



CURVE No.	CH
2 (RHC)	553+472
R	30000 m
Es	0.47 m
Δ	0.643
Lc	336.54 m
Δs	0.643
s	0.000 m
Ls	0 m
V	100 kmph
Ts	168.34 m
e	NC %
HIP	684430.814 (E)
	3006616.204 (N)

DATUM LEVEL =61.000

CHAINAGE (m)	FRL AT PROPOSED CENTERLINE	EXISTING ROAD CENTERLINE LEVEL	OGL AT 20m (LHS) From Prop. CENTER LINE	OGL AT 20m (RHS) From Prop. CENTER LINE	HORIZONTAL	VERTICAL	SUPERELEVATION
553+000	82.389	82.919	82.789	82.919	R=30000.000 L=336.536		LHS=1.000% RHS=1.000%
553+010	82.387	82.917	82.787	82.917			
553+020	82.385	82.915	82.785	82.915			
553+030	82.384	82.914	82.784	82.914			
553+040	82.382	82.912	82.782	82.912			
553+050	82.378	82.908	82.778	82.908			
553+060	82.377	82.907	82.777	82.907			
553+070	82.375	82.905	82.775	82.905			
553+080	82.373	82.903	82.773	82.903			
553+090	82.370	82.900	82.770	82.900			
553+100	82.368	82.898	82.768	82.898			
553+110	82.367	82.897	82.767	82.897			
553+120	82.365	82.895	82.765	82.895			
553+130	82.363	82.893	82.763	82.893			
553+140	82.362	82.892	82.762	82.892			
553+150	82.360	82.890	82.760	82.890			
553+160	82.358	82.888	82.758	82.888			
553+170	82.356	82.886	82.756	82.886			
553+180	82.355	82.885	82.755	82.885			
553+190	82.353	82.883	82.753	82.883			
553+200	82.351	82.881	82.751	82.881			
553+210	82.350	82.880	82.750	82.880			
553+220	82.348	82.878	82.748	82.878			
553+230	82.346	82.876	82.746	82.876			
553+240	82.345	82.875	82.745	82.875			
553+250	82.343	82.873	82.743	82.873			
553+260	82.341	82.871	82.741	82.871			
553+270	82.340	82.870	82.740	82.870			
553+280	82.338	82.868	82.738	82.868			
553+290	82.336	82.866	82.736	82.866			
553+300	82.334	82.864	82.734	82.864			
553+310	82.333	82.863	82.733	82.863			
553+320	82.331	82.861	82.731	82.861			
553+330	82.329	82.859	82.729	82.859			
553+340	82.328	82.858	82.728	82.858			
553+350	82.326	82.856	82.726	82.856			
553+360	82.324	82.854	82.724	82.854			
553+370	82.323	82.853	82.723	82.853			
553+380	82.321	82.851	82.721	82.851			
553+390	82.319	82.849	82.719	82.849			
553+400	82.318	82.848	82.718	82.848			
553+410	82.316	82.846	82.716	82.846			
553+420	82.314	82.844	82.714	82.844			
553+430	82.312	82.842	82.712	82.842			
553+440	82.311	82.841	82.711	82.841			
553+450	82.309	82.839	82.709	82.839			
553+460	82.307	82.837	82.707	82.837			
553+470	82.306	82.836	82.706	82.836			
553+480	82.304	82.834	82.704	82.834			
553+490	82.302	82.832	82.702	82.832			
553+500	82.301	82.831	82.701	82.831			
553+510	82.299	82.829	82.699	82.829			
553+520	82.297	82.827	82.697	82.827			
553+530	82.296	82.826	82.696	82.826			
553+540	82.294	82.824	82.694	82.824			
553+550	82.292	82.822	82.692	82.822			
553+560	82.290	82.820	82.690	82.820			
553+570	82.289	82.819	82.689	82.819			
553+580	82.287	82.817	82.687	82.817			
553+590	82.285	82.815	82.685	82.815			
553+600	82.284	82.814	82.684	82.814			
553+610	82.282	82.812	82.682	82.812			
553+620	82.280	82.810	82.680	82.810			
553+630	82.279	82.809	82.679	82.809			
553+640	82.277	82.807	82.677	82.807			
553+650	82.275	82.805	82.675	82.805			
553+660	82.273	82.803	82.673	82.803			
553+670	82.272	82.802	82.672	82.802			
553+680	82.270	82.800	82.670	82.800			
553+690	82.268	82.798	82.668	82.798			
553+700	82.267	82.797	82.667	82.797			
553+710	82.265	82.795	82.665	82.795			
553+720	82.263	82.793	82.663	82.793			
553+730	82.262	82.792	82.662	82.792			
553+740	82.260	82.790	82.660	82.790			
553+750	82.258	82.788	82.658	82.788			
553+760	82.257	82.787	82.657	82.787			
553+770	82.255	82.785	82.655	82.785			
553+780	82.253	82.783	82.653	82.783			
553+790	82.251	82.781	82.651	82.781			
553+800	82.250	82.780	82.650	82.780			
553+810	82.248	82.778	82.648	82.778			
553+820	82.246	82.776	82.646	82.776			
553+830	82.245	82.775	82.645	82.775			
553+840	82.243	82.773	82.643	82.773			
553+850	82.241	82.771	82.641	82.771			
553+860	82.240	82.770	82.640	82.770			
553+870	82.238	82.768	82.638	82.768			
553+880	82.236	82.766	82.636	82.766			
553+890	82.235	82.765	82.635	82.765			
553+900	82.233	82.763	82.633	82.763			
553+910	82.231	82.761	82.631	82.761			
553+920	82.229	82.759	82.629	82.759			
553+930	82.228	82.758	82.628	82.758			
553+940	82.226	82.756	82.626	82.756			
553+950	82.224	82.754	82.624	82.754			
553+960	82.223	82.753	82.623	82.753			
553+970	82.221	82.751	82.621	82.751			
553+980	82.219	82.749	82.619	82.749			
554+000							

CLIENT :

Regional Office, Guwahati, NEDFi House, 4th Floor, G.S. Road
Dispur, Guwahati - 781006, Assam.

DPR CONSULTANTS:

Plot no. 418, Ground Floor, Saraswati kunj, Sector-53,
Gurgaon, Haryana-122002

PROJECT :

Consultancy Services for Preparation of Feasibility Study and Detailed Project Report for Development & Construction of Emergency Landing facilities of National Highways Moran Bypass (New Alignment) from Km. 550+500 to Km. 554+800 (total 4.30 Kms.) of NH-37 in the State of Assam under National Highway Authority of India (N.H.A.I.).

REV.	DATE	DESCRIPTION
R1	11.11.2020	Submission For Approval
R0	07.09.2020	First Submission

DRAWN BY :	D.D.
DESIGNED BY :	N.R.
CHECKED BY :	S.K.S.
APPROVED BY :	B.P.
DATE :	07/09/2020

TITLE :	PLAN & PROFILE
DRG. NO. :	DRG NO.: NPEC/NH - 37/P&P/04
CHAINAGE :	553+000 TO 554+000

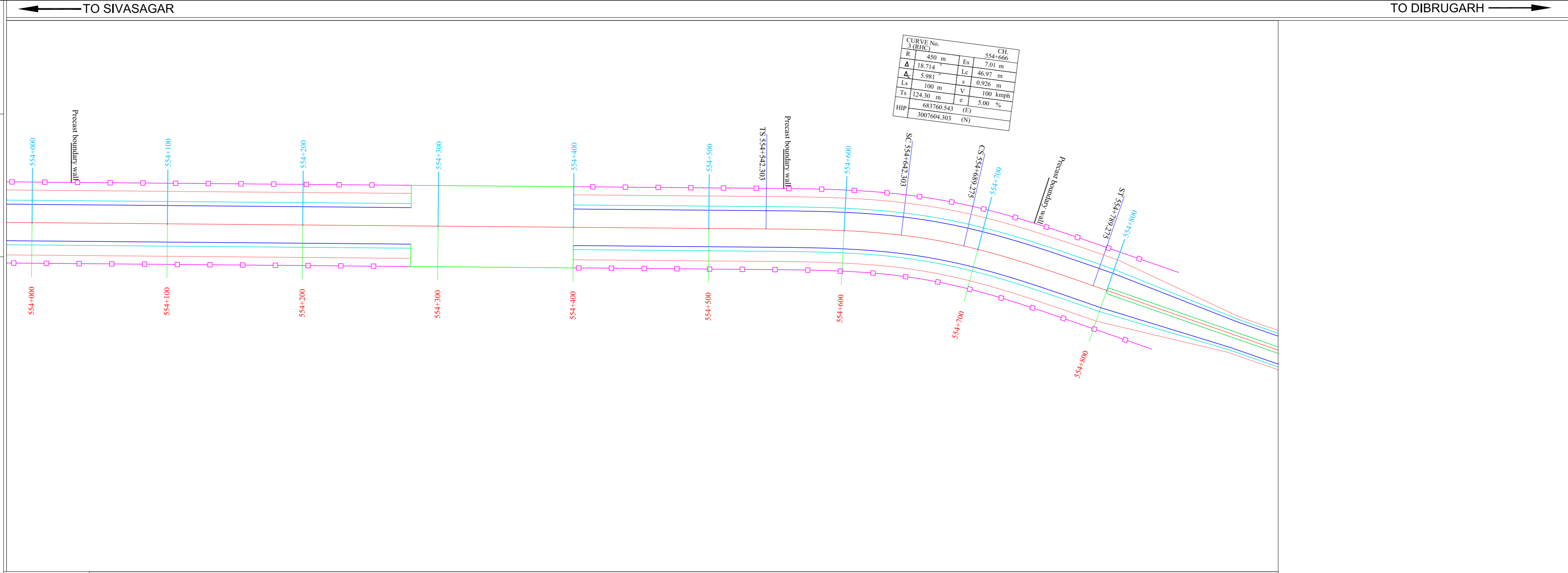
NOTES:

1. ALL LEVELS ARE IN METERS UNLESS OTHERWISE SPECIFIED.

LEGEND
HORIZONTAL PLAN

- PROPOSED CL
- PRO. HARD SHOULDER
- PRO. CARRIAGEWAY
- PAVED SHOULDER
- EARTHEN SHOULDER
- PROPOSED ROW
- PROPOSED DRAIN
- EXISTING ROW
- EXISTING ROAD

GPS Pillar
BM Pillar
Name Board
Electric Pole
Ext. Trees
Transformer
200 m Stone
Handpump
Borewell
OFC Pillar
Telephone Box
KM Stone
Pylon
Gaurd Stone
Traffic Signal Board
High Mast Post
Lamp Pole



DATUM LEVEL =61.000	
FRL AT PROPOSED CENTERLINE	83.919, 83.918, 83.916, 83.913, 83.911, 83.909, 83.906, 83.904, 83.902, 83.901, 83.899, 83.897, 83.896, 83.894, 83.892, 83.891, 83.889, 83.887, 83.885, 83.884, 83.882, 83.880, 83.879, 83.877, 83.875, 83.874, 83.872, 83.870, 83.869, 83.867, 83.865, 83.863, 83.860, 83.858, 83.857, 83.855, 83.853, 83.852, 83.850, 83.848, 83.846, 83.845, 83.843, 83.841, 83.840, 83.838, 83.836, 83.835, 83.833, 83.831, 83.830, 83.828, 83.826, 83.824, 83.823, 83.821, 83.819, 83.817, 83.814, 83.811, 83.810, 83.808, 83.806, 83.802, 83.796, 83.791, 83.785, 83.778, 83.771, 83.763, 83.755, 83.746, 83.736, 83.726, 83.716, 83.705, 83.693, 83.681, 83.669, 83.657
EXISTING ROAD CENTERLINE LEVEL	82.749, 82.748, 82.746, 82.743, 82.741, 82.739, 82.736, 82.734, 82.732, 82.731, 82.729, 82.727, 82.726, 82.724, 82.722, 82.721, 82.719, 82.717, 82.715, 82.714, 82.712, 82.710, 82.709, 82.707, 82.705, 82.704, 82.702, 82.700, 82.699, 82.697, 82.695, 82.693, 82.692, 82.690, 82.688, 82.687, 82.685, 82.683, 82.682, 82.680, 82.678, 82.676, 82.675, 82.673, 82.671, 82.670, 82.668, 82.666, 82.665, 82.663, 82.661, 82.660, 82.658, 82.656, 82.654, 82.653, 82.651, 82.649, 82.647, 82.644, 82.640, 82.632, 82.626, 82.621, 82.615, 82.608, 82.601, 82.593, 82.585, 82.576, 82.566, 82.556, 82.546, 82.536, 82.523, 82.517, 82.514, 82.510, 82.506, 82.502, 82.496, 82.491, 82.485, 82.478, 82.471, 82.463, 82.455, 82.446, 82.436, 82.426, 82.416, 82.405, 82.393, 82.381, 82.369, 82.357
OGL AT 20m (LHS) From Prop. CENTER LINE	82.619, 82.618, 82.616, 82.613, 82.611, 82.609, 82.607, 82.606, 82.604, 82.602, 82.601, 82.599, 82.597, 82.596, 82.594, 82.591, 82.589, 82.587, 82.585, 82.584, 82.582, 82.580, 82.579, 82.577, 82.575, 82.574, 82.572, 82.570, 82.569, 82.567, 82.565, 82.563, 82.562, 82.560, 82.558, 82.557, 82.555, 82.553, 82.552, 82.550, 82.548, 82.546, 82.545, 82.543, 82.541, 82.540, 82.538, 82.536, 82.535, 82.533, 82.531, 82.530, 82.528, 82.526, 82.524, 82.523, 82.521, 82.519, 82.517, 82.514, 82.510, 82.506, 82.502, 82.496, 82.491, 82.485, 82.478, 82.471, 82.463, 82.455, 82.446, 82.436, 82.426, 82.416, 82.405, 82.393, 82.381, 82.369, 82.357
OGL AT 20m (RHS) From Prop. CENTER LINE	82.219, 82.216, 82.214, 82.213, 82.211, 82.209, 82.207, 82.206, 82.204, 82.202, 82.201, 82.199, 82.197, 82.196, 82.194, 82.192, 82.191, 82.189, 82.187, 82.185, 82.184, 82.182, 82.180, 82.179, 82.177, 82.175, 82.174, 82.172, 82.170, 82.169, 82.167, 82.165, 82.163, 82.162, 82.160, 82.158, 82.155, 82.153, 82.152, 82.150, 82.148, 82.146, 82.145, 82.143, 82.141, 82.140, 82.138, 82.136, 82.135, 82.133, 82.131, 82.130, 82.128, 82.126, 82.124, 82.123, 82.121, 82.119, 82.117, 82.114, 82.110, 82.106, 82.102, 82.096, 82.091, 82.085, 82.078, 82.071, 82.063, 82.055, 82.046, 82.036, 82.026, 82.016, 82.005, 81.993, 81.981, 81.969, 81.957
HORIZONTAL	D=902.461, CL=100.000, R=450.000 L=46.972, CL=100.000
VERTICAL	L=200.000, K=-1871.222
SUPERELEVATION	LHS=1.000%, RHS=1.000%, RHS=5.000%, LHS=5.000%
CHAINAGE (m)	554+000, 554+010, 554+020, 554+030, 554+040, 554+050, 554+060, 554+070, 554+080, 554+090, 554+100, 554+110, 554+120, 554+130, 554+140, 554+150, 554+160, 554+170, 554+180, 554+190, 554+200, 554+210, 554+220, 554+230, 554+240, 554+250, 554+260, 554+270, 554+280, 554+290, 554+300, 554+310, 554+320, 554+330, 554+340, 554+350, 554+360, 554+370, 554+380, 554+390, 554+400, 554+410, 554+420, 554+430, 554+440, 554+450, 554+460, 554+470, 554+480, 554+490, 554+500, 554+510, 554+520, 554+530, 554+540, 554+550, 554+560, 554+570, 554+580, 554+590, 554+600, 554+610, 554+620, 554+630, 554+640, 554+650, 554+660, 554+670, 554+680, 554+690, 554+700, 554+710, 554+720, 554+730, 554+740, 554+750, 554+760, 554+770, 554+780, 554+790, 554+800

CLIENT : Regional Office, Guwahati, NEDFi House, 4th Floor, G.S. Road Dispur, Guwahati - 781006, Assam.	DPR CONSULTANTS: NPCC Plot no. 418, Ground Floor, Saraswati kunj, Sector-53, Gurgaon, Haryana-122002	PROJECT : Consultancy Services for Preparation of Feasibility Study and Detailed Project Report for Development & Construction of Emergency Landing facilities of National Highways Moran Bypass (New Alignment) from Km. 550+500 to Km. 554+800 (total 4.30 Kms.) of NH-37 in the State of Assam under National Highway Authority of India (N.H.A.I.).	DRAWN BY : D.D. DESIGNED BY : N.R. CHECKED BY : S.K.S. APPROVED BY : B.P. DATE : 07/09/2020	TITLE : PLAN & PROFILE DRG. NO. : DRG NO.: NPCC/NH - 37/P&P/05 CHAINAGE : 554+000 TO 554+800
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Horizontal Alignment Report of the project NH - 37 from Ch. 550+500 to 554+800

SI No.	Hip No	HIP Chainage	Easting	Northing	Radius	Transition Length	Transition Start Ch.	Circular Start	Circular End	Transition End Ch.	Delta	Length of Curve	Shift (S)	Es	Ts (m)	e	Hand of Curve	Speed
		m	m	m	m	m	m	m	m	m	m	D	m	m	m	m	%	
1	1	550713.681	686007.781	3004352.786	490	100	550538.108	550638.108	550788.072	550888.072	29.229	149.964	0.850	17.26	177.99	5.00%	Left	100
2	2	553471.576	684430.814	3006616.204	30000	0	553303.306	553303.306	553639.842	553639.842	0.643	336.536	0.000	0.47	168.34	-1.00%	Right	100
3	3	554665.811	683760.543	3007604.303	450	100	554542.303	554642.303	554689.275	554789.275	18.714	46.972	0.926	7.01	124.30	5.00%	Right	100

CLIENT :



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DPR CONSULTANTS:



Plot no. 418, Ground Floor, Saraswati kunj, Sector-53,
Gurgaon, Haryana-122002

PROJECT :

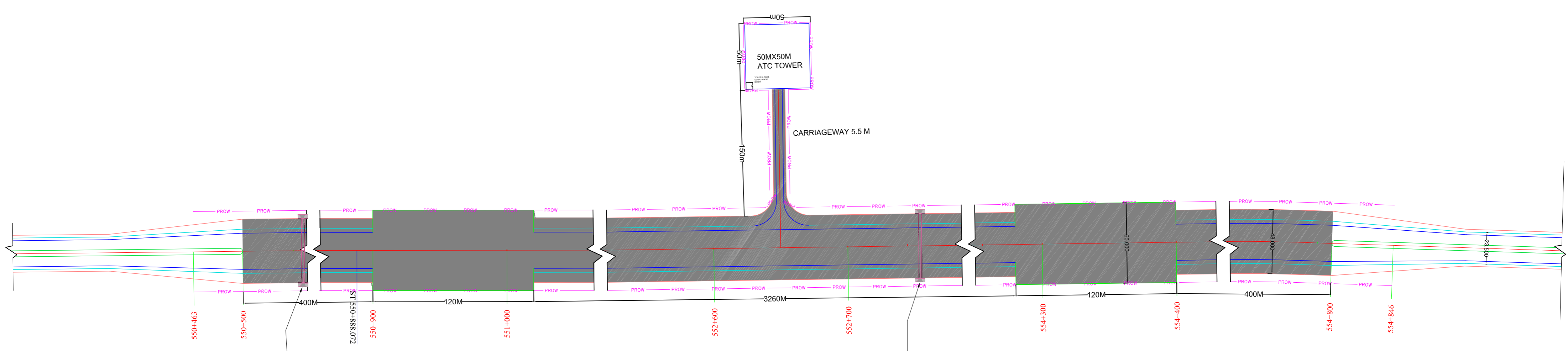
Consultancy Services for Preparation of Feasibility Study and Detailed Project Report for Development & Construction of Emergency Landing facilities of National Highways Moran Bypass (New Alignment) from Km. 550+500 to Km. 554+800 (total 4.30 Kms.) of NH-37 in the State of Assam under National Highway Authority of India (N.H.A.I).

REV.	DATE	DESCRIPTION
R0	07.09.2020	Submission For Approval

DRAWN BY : D.D.
DESIGNED BY : N.R.
CHECKED BY : S.K.S.
APPROVED BY : B.P.
DATE : 07/09/2020

TITLE : HORIZONTAL ALIGNMENT REPORT
DRG. NO. :
 DRG NO.: NPEC/NH - 37/HOR/ 01
CHAINAGE :

KEY PLAN OF EMERGENCY LANDING SECTION



Proposed Box Culvert Details-01

Chainage(Km)	550+545
Proposed Width	48.00m
Type	Box
Span	1x2.00m
Remarks	Reconstr.

Proposed Box Culvert Details-10

Chainage(Km)	552+754
Proposed Width	48.00m
Type	Box
Span	1x2.00m
Remarks	Reconstr.

CLIENT :



Regional Office, Guwahati, NEDFi House, 4th Floor, G.S. Road
Dispur, Guwahati - 781006, Assam.

DPR CONSULTANTS:



Plot no. 418, Ground Floor, Saraswati kunj, Sector-53,
Gurgaon, Haryana-122002

PROJECT :

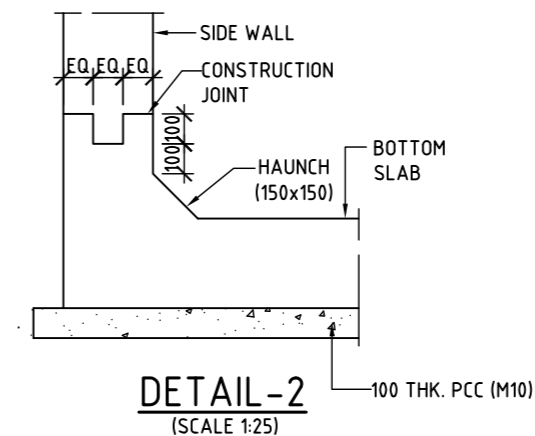
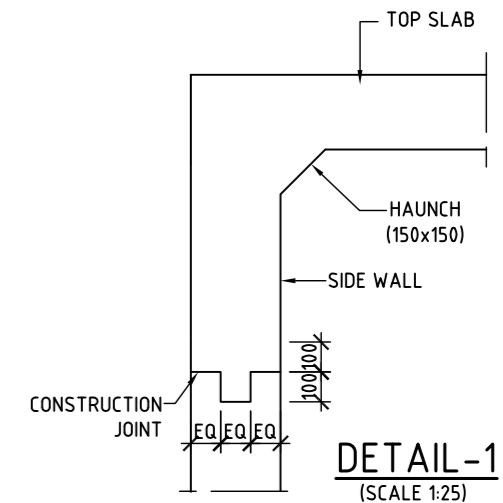
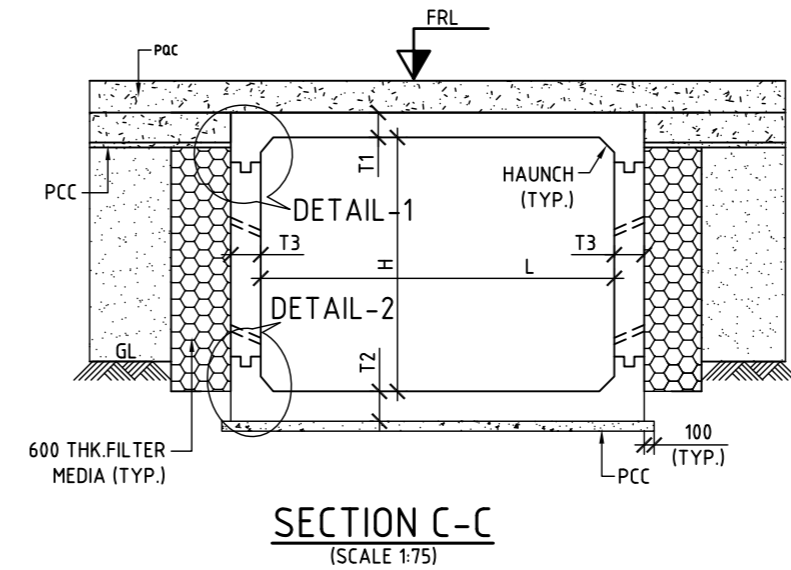
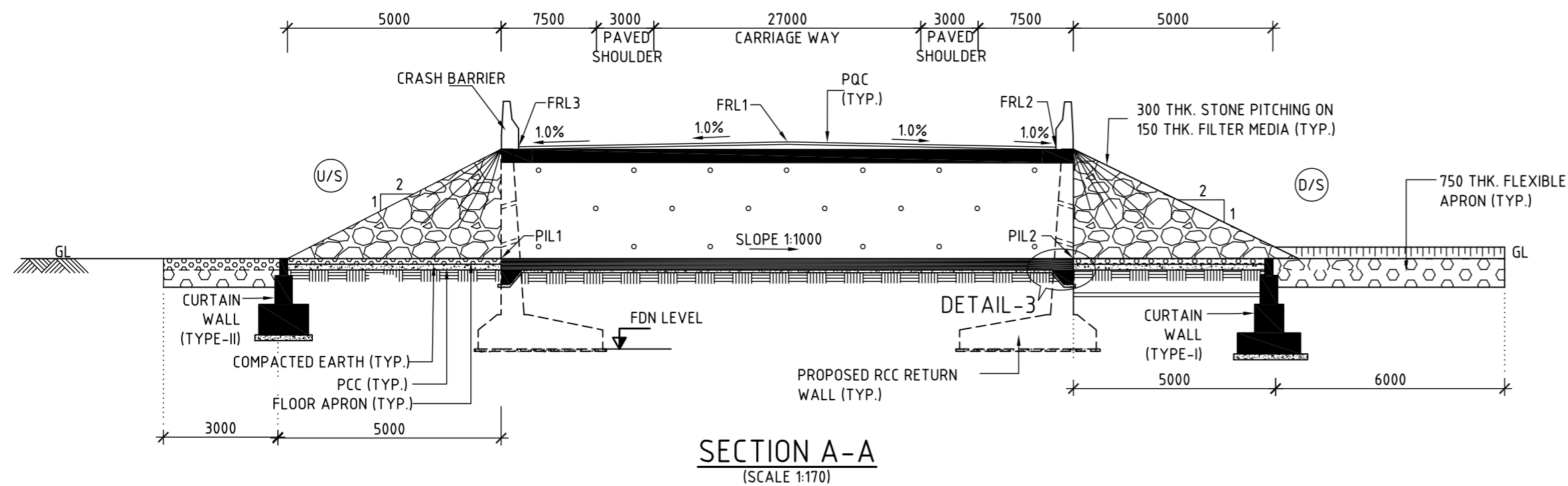
Consultancy Services for Preparation of Feasibility Study and Detailed Project Report for Development & Construction of Emergency Landing facilities of National Highways Moran Bypass (New Alignment) from Km. 550+500 to Km. 554+800 (total 4.30 Kms.) of NH-37 in the State of Assam under National Highway Authority of India (N.H.A.I).

REV.	DATE	DESCRIPTION
R0	07.09.2020	Submission For Approval

DRAWN BY :	D.D.
DESIGNED BY :	N.R.
CHECKED BY :	S.K.S.
APPROVED BY :	B.P.
DATE :	07/09/2020

TITLE :	KEY PLAN FOR EMERGENCY AIRCRAFT LANDING IN NATIONAL HIGHWAY -37
DRG. NO. :	DRG NO.: NPEC/NH - 37/KEY PLAN/ 01
CHAINAGE :	

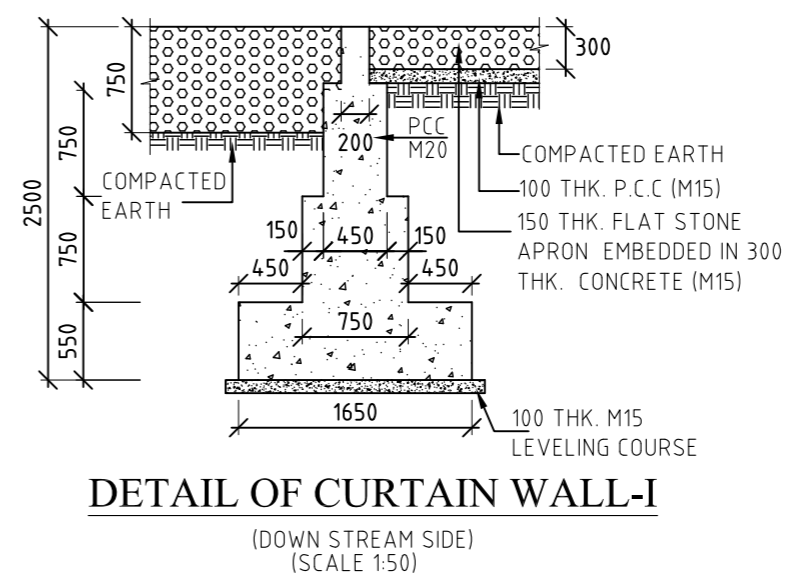
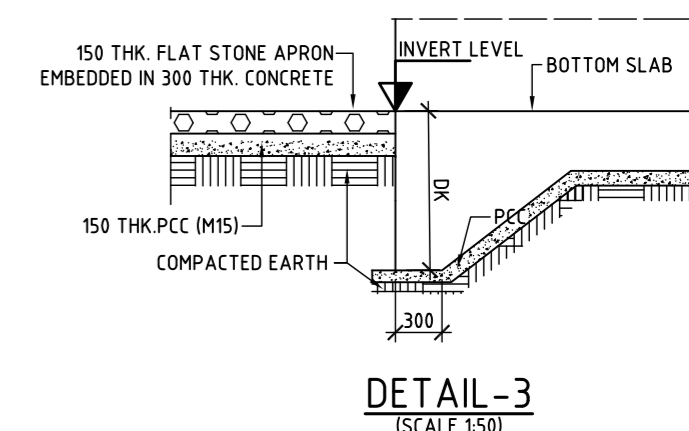
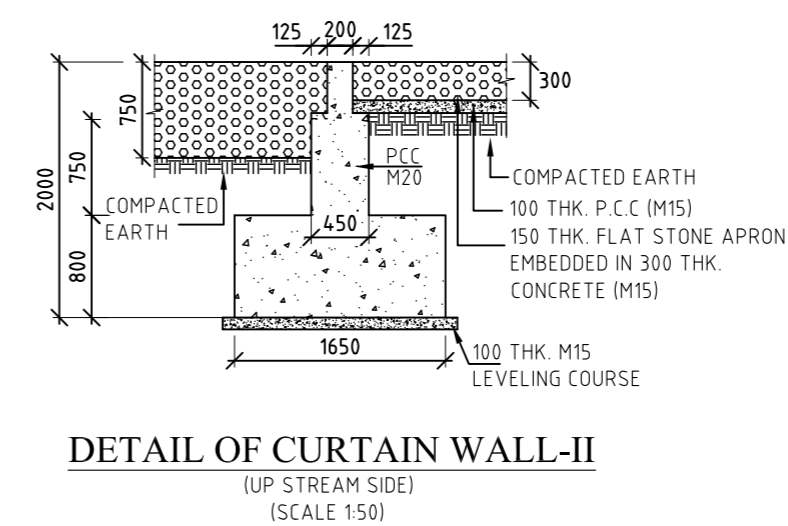
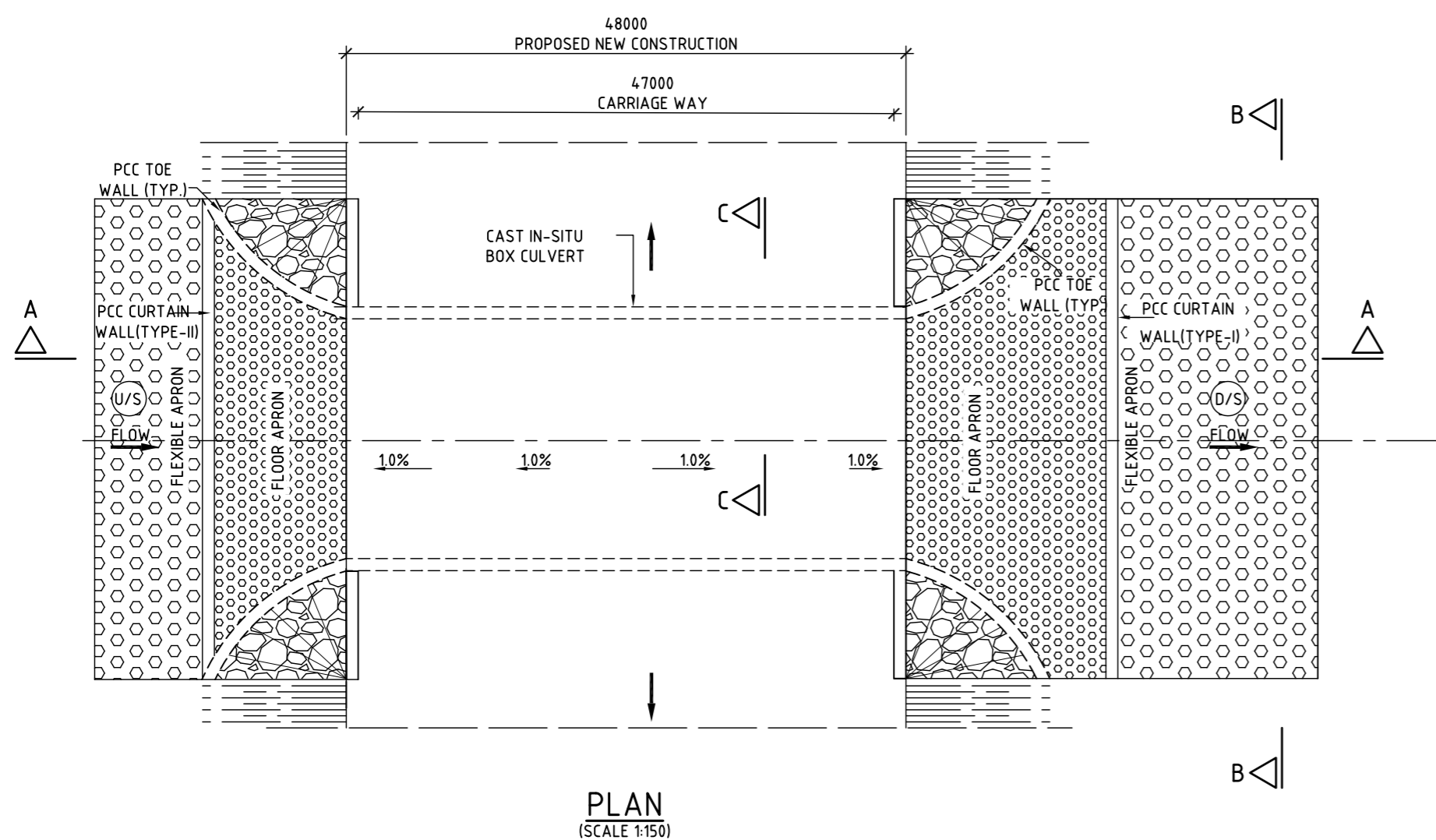
**GENERAL ARRANGEMENT DRAWINGS OF CULVERTS &
STRUCTURES**



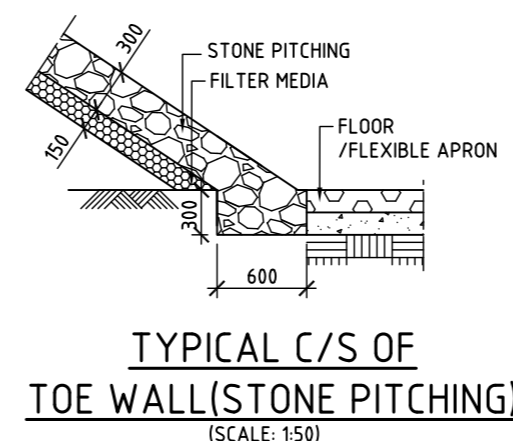
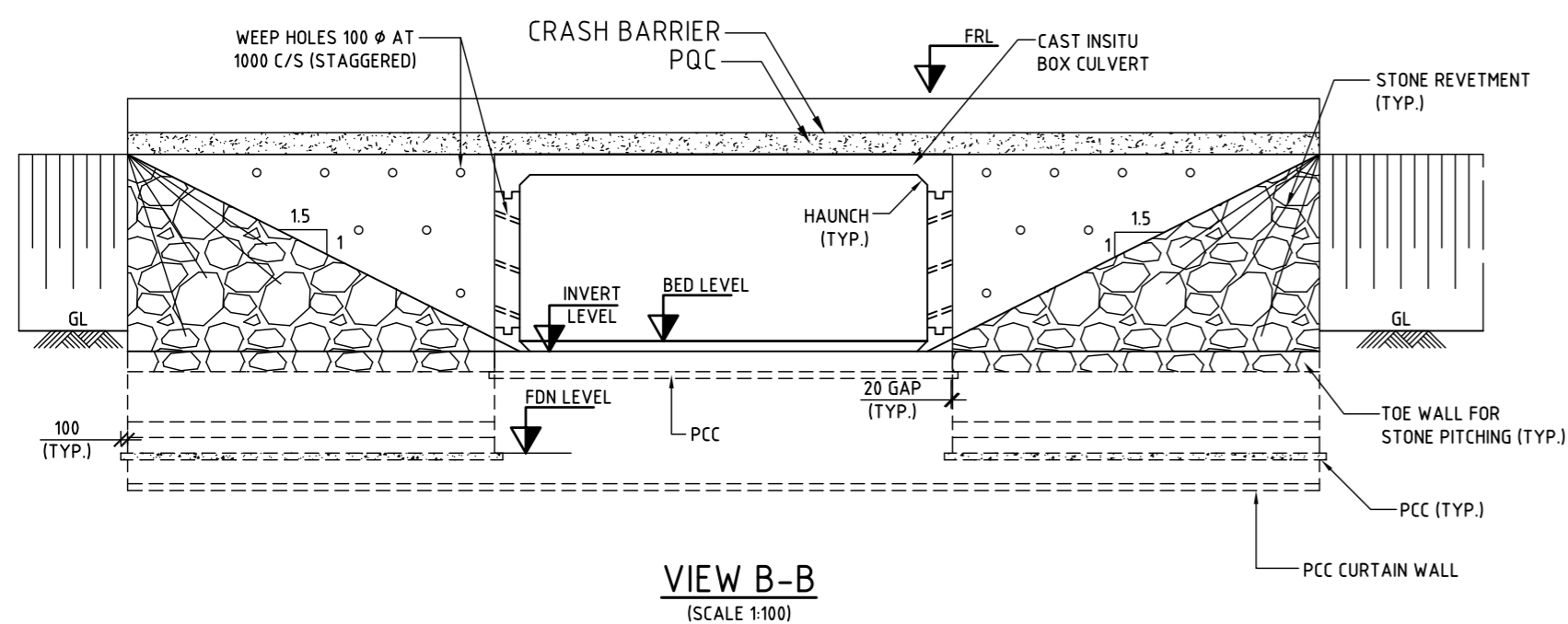
LEGEND:
 FRL - FINISHED ROAD LEVEL
 U/S - UP STREAM SIDE
 D/S - DOWN STREAM SIDE

SCHEDULE OF LEVELS: (SCALE 1:1000)

FINISHED ROAD LEVEL (m)			PROPOSED INVERT LEVEL (m)		DIMENSIONS (mm)					SKEW ANGLE
FRL1	FRL2	FRL3	PIL1	PIL2	T1	T2	T3	L	H	θ



- NOTES:**
- ALL DIMENSIONS ARE IN MILLIMETRES, LEVELS AND CHAINAGES ARE IN METRES OR OTHER WISE MENTIONED.
 - DIMENSIONS ARE NOT TO BE SCALED, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
 - THIS DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT HIGHWAY DRAWINGS. FRL & CAMBER/SUPER ELEVATION AT PARTICULAR LOCATION SHALL BE VERIFIED WITH THE HIGHWAY DRAWINGS. DISCREPANCY IF ANY IS TO BE IMMEDIATELY BROUGHT TO THE NOTICE OF ENGINEER FOR NECESSARY MODIFICATIONS IN THE DRAWING.
 - THE SELECTED BACK FILL MATERIAL BEHIND RCC BOX /RETURN WALL SHALL HAVE FOLLOWING PROPERTIES:
 $\phi = 30^\circ$, $\gamma = 2.0T/m^3$. THIS MATERIAL MAY BE FILLED ONLY FOR THE PORTION AS INDICATED IN APPENDIX-6 OF IRC-78.
 - LONGITUDINAL SLOPE OF BOX CULVERT SHALL BE MINIMUM 1:1000
 - FLOW DIRECTION SHOWN IN THE PLAN IS INDICATIVE ONLY. BED PROTECTION FOR UPSTREAM AND DOWNSTREAM SHALL BE BASED ON FLOW DIRECTION AT THE SITE.
 - 600mm THICK FILTER MEDIA PROVIDED BEHIND THE RCC BOX AND RETURN WALL.
 - THE SAFE BEARING CAPACITY IS CONSIDERED AS $150kN/m^2$ IN DESIGN AND THE SAME SHALL BE ENSURED AT SITE BY ENGINEER-IN-CHARGE.
 - WEEP HOLES IN SLOPE 1:20, 100 DIA P.V.C PIPE AT SPACING 1000mm C/C BOTH HORIZONTALLY AND VERTICALLY SHALL BE PROVIDED IN STAGGERED MANNER ABOVE GROUND LEVEL.
 - THE 20mm GAP BETWEEN RETURN WALL AND CAST IN SITU BOX TO BE FILLED WITH COMPRESSIBLE FILLER BOARD AND POLYSULPHIDE /BITUMINOUS SEALANT.
 - IF BC / CLAYEY SOIL IS ENCOUNTERED AS FOUNDING SOIL, THEN 900MM DEPTH OF SOIL BELOW FOUNDING LEVEL TO BE REMOVED AND FILLED BY METAL/BOULDER WITH SAND AS PER SP 13:2004.
 - BACKFILLING SHALL BE DONE SIMULTANEOUSLY ON BOTH SIDES OF BOX.
 - SOFT AND LOOSE PATCHES IN THE BEARING AREA ARE TO BE REPLACED BY COMPACTED GRANULAR FILLS WITH SANDY MOORUM AND WITH LAYERS NOT EXCEEDING 300mm.
 - PROPOSED RAFT TOP SHOULD BE KEPT 300mm BELOW THE LOWEST BED LEVEL.
 - FLEXIBLE APRON SHALL BE PROVIDED BASED ON SITE CONDITION & SHALL BE DECIDED BY ENGINEER INCHARGE. WHERE EVER ROCK IS AVAILABLE AT TOP LEVEL FLEXIBLE APRON SHALL BE DISPOSED.
 - 'DK' IS THE DEPTH OF SHEAR KEY
 BASE SLAB THICKNESS VALUE OF DK
 UPTO 900mm 1200mm
 BEYOND 900mm T2+900mm
 WHERE T2 IS THE THICKNESS OF BASE SLAB



CLIENT :



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 Dispur, Guwahati - 781006, Assam.

DPR CONSULTANTS:



Plot no. 418, Ground Floor, Saraswati kunj, Sector-53,
 Gurgaon, Haryana-122002

PROJECT :

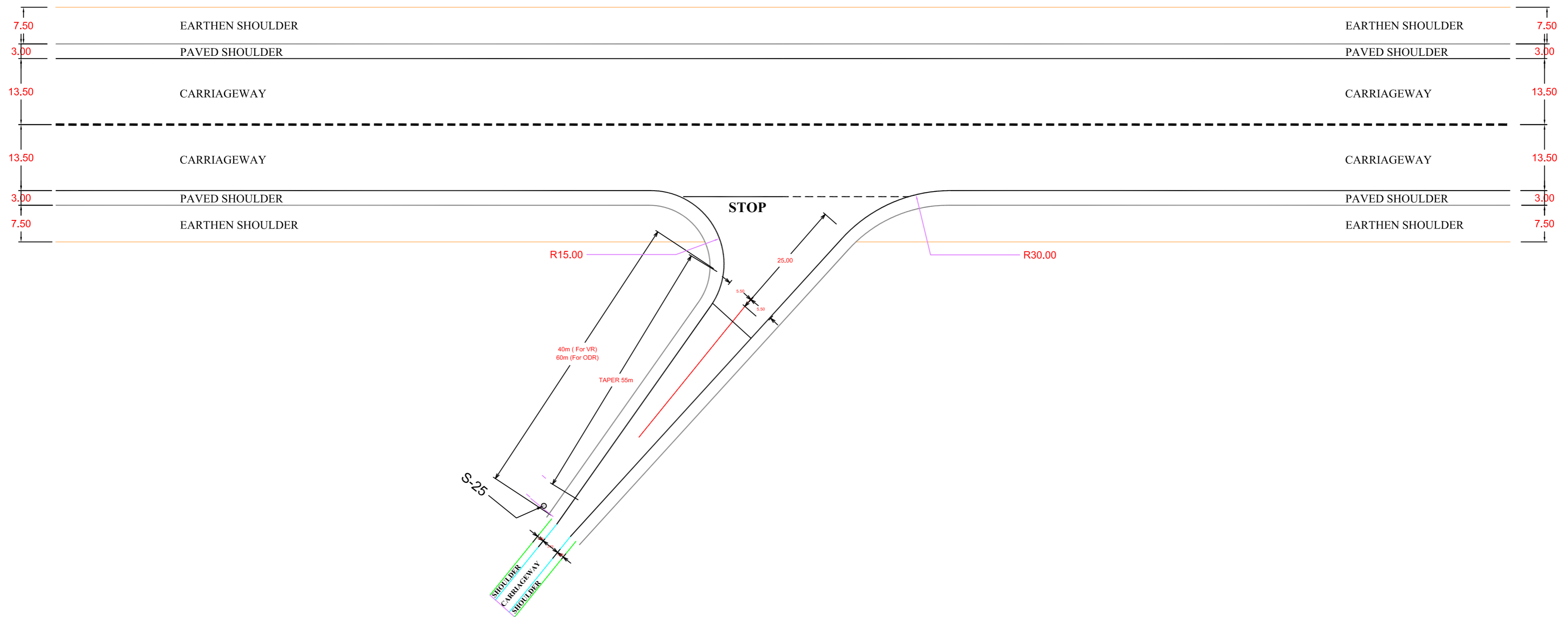
Consultancy Services for Preparation of Feasibility Study and Detailed Project Report for Development & Construction of Emergency Landing facilities of National Highways Moran Bypass (New Alignment) from Km. 550+500 to Km. 554+800 (total 4.30 Kms.) of NH-37 in the State of Assam under National Highway Authority of India (N.H.A.I).

REV.	DATE	DESCRIPTION
R0	07.09.2020	Submission For Approval

DRAWN BY :	D.D.
DESIGNED BY :	N.R.
CHECKED BY :	S.K.S.
APPROVED BY :	B.P.
DATE :	07/09/2020

TITLE :	GENERAL ARRANGEMENT DRAWING OF BOX CULVERT
DRG. NO. :	DRG NO.: NHA/RO/GH/NH-37/E.RLANG/NPEC/GAD/01
CHAINAGE :	

TYPICAL DRAWINGS OF INTERSECTIONS



TYPICAL DRAWING OF Y - TYPE CROSS ROAD INTERSECTION

Note:
 1) All dimensions are in mtr.
 2) Dimensions are not to be scaled, only written dimensions are to followed .

CLIENT :



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 Dispur, Guwahati - 781006, Assam.

DPR CONSULTANTS:



Plot no. 418, Ground Floor, Saraswati kunj, Sector-53,
 Gurgaon, Haryana-122002

PROJECT :

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REV.	DATE	DESCRIPTION
R0	07.09.2020	Submission For Approval

DRAWN BY : D.D.

DESIGNED BY : N.R.

CHECKED BY : S.K.S.

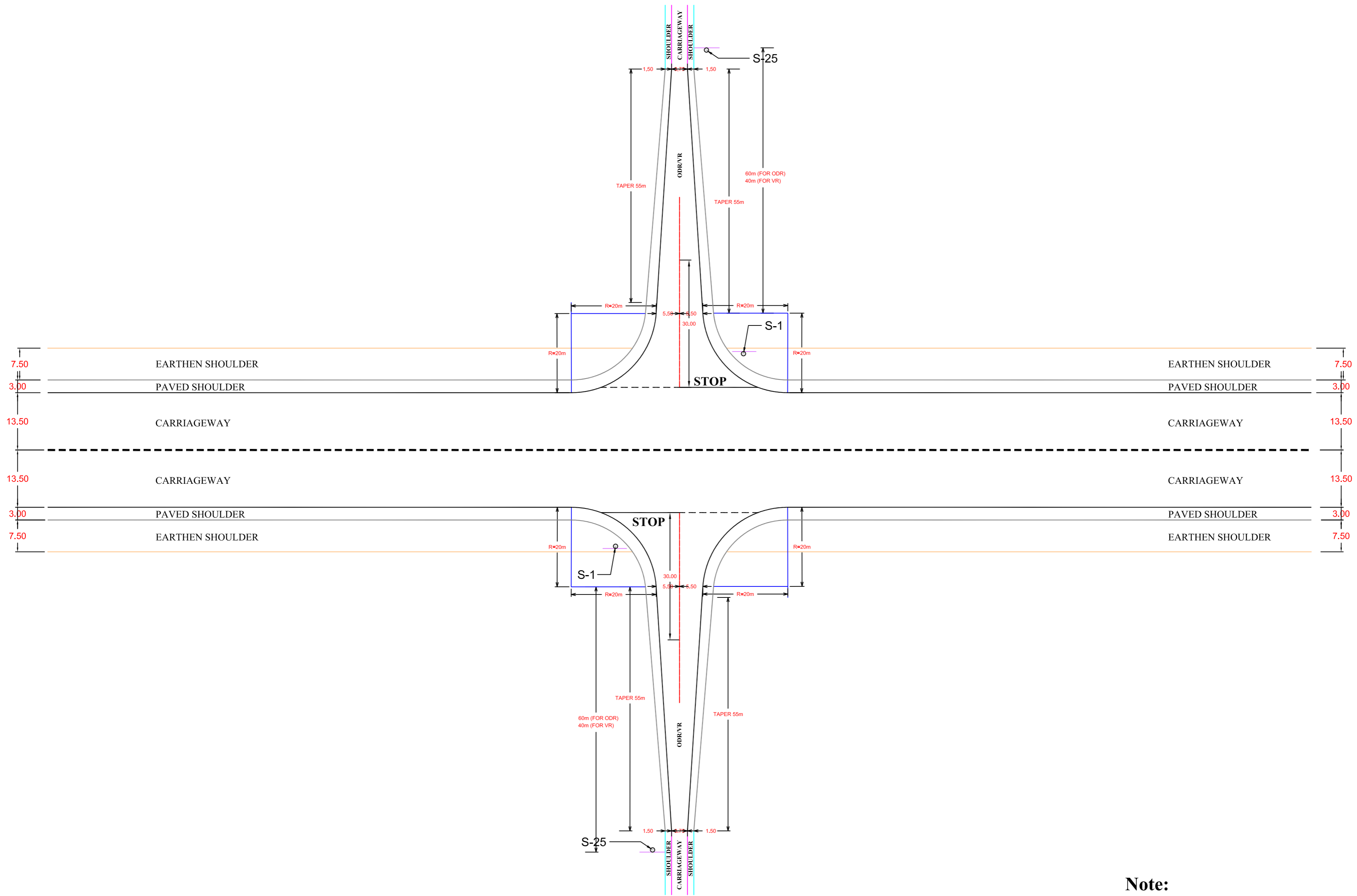
APPROVED BY : B.P.

DATE : 07/09/2020

TITLE : TYPICAL JUNCTION TYPE -Y

DRG. NO. :
 DRG NO.: NHAI/RO/GHY/NH - 31/ERLANG/NPEC/JN/03

CHAINAGE :



TYPICAL DRAWING OF X - TYPE CROSS ROAD INTERSECTION

Note:

- 1) All dimensions are in mtr.
- 2) Dimensions are not to be scaled, only written dimensions are to followed .

CLIENT :



Regional Office, Guwahati, NEDFi House, 4th Floor, G.S. Road
Dispur, Guwahati - 781006, Assam.

DPR CONSULTANTS:



Plot no. 418, Ground Floor, Saraswati kunj, Sector-53,
Gurgaon, Haryana-122002

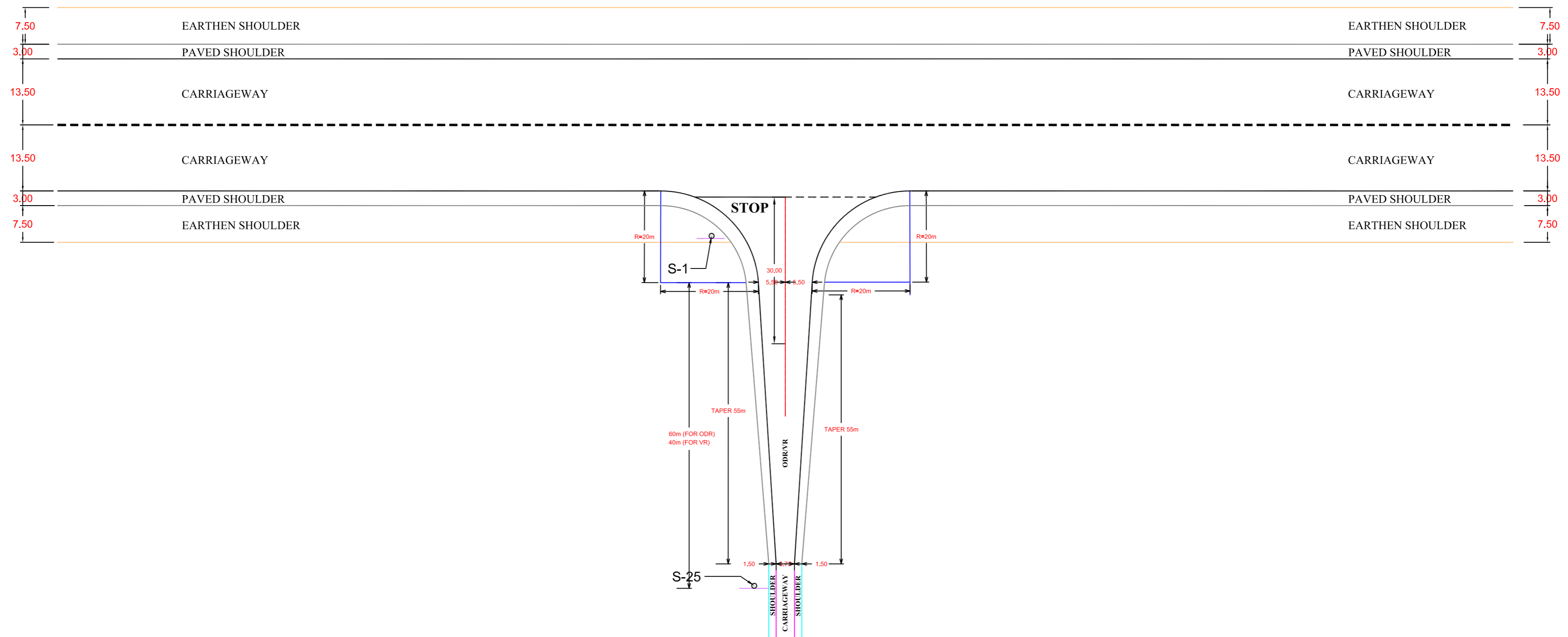
PROJECT :

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REV.	DATE	DESCRIPTION
R0	07.09.2020	Submission For Approval

DRAWN BY :	D.D.
DESIGNED BY :	N.R.
CHECKED BY :	S.K.S.
APPROVED BY :	B.P.
DATE :	07/09/2020

TITLE :	TYPICAL JUNCTION TYPE-X
DRG. NO. :	DRG NO.: NHAI/RO/GHY/NH - 31/E.ERLANG/NPEC/JN/01
CHAINAGE :	



TYPICAL DRAWING OF T - TYPE CROSS ROAD INTERSECTION

Note:

- 1) All dimensions are in mtr.
- 2) Dimensions are not to be scaled, only written dimensions are to followed .

CLIENT :



Regional Office, Guwahati, NEDFi House, 4th Floor, G.S. Road
Dispur, Guwahati - 781006, Assam.

DPR CONSULTANTS:



Plot no. 418, Ground Floor, Saraswati kunj, Sector-53,
Gurgaon, Haryana-122002

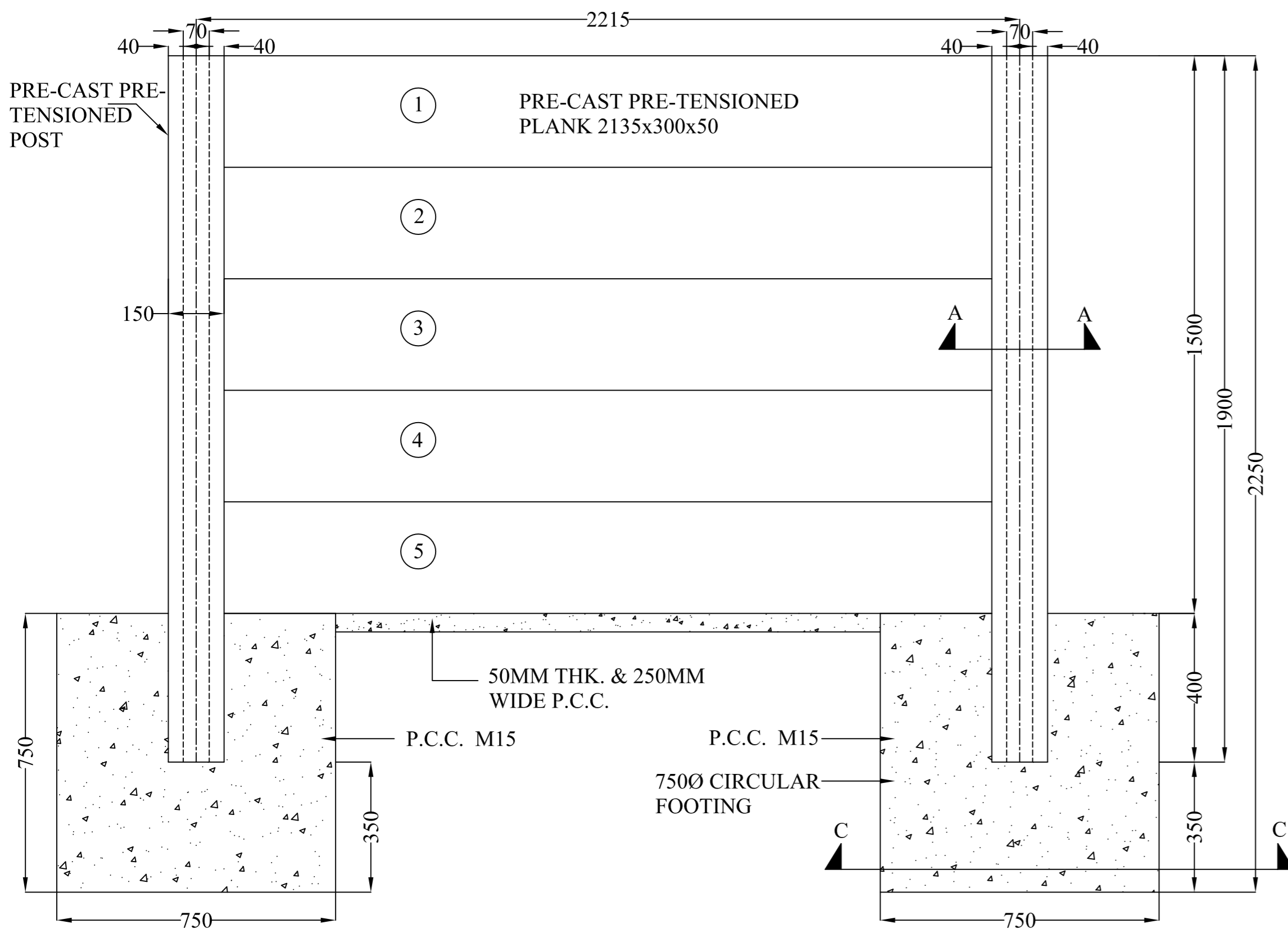
PROJECT :

Consultancy Services for Preparation of Feasibility Study and Detailed Project Report for Development & Construction of Emergency Landing facilities of National Highways Moran Bypass (New Alignment) from Km. 550+500 to Km. 554+800 (total 4.30 Kms.) of NH-37 in the State of Assam under National Highway Authority of India (N.H.A.I).

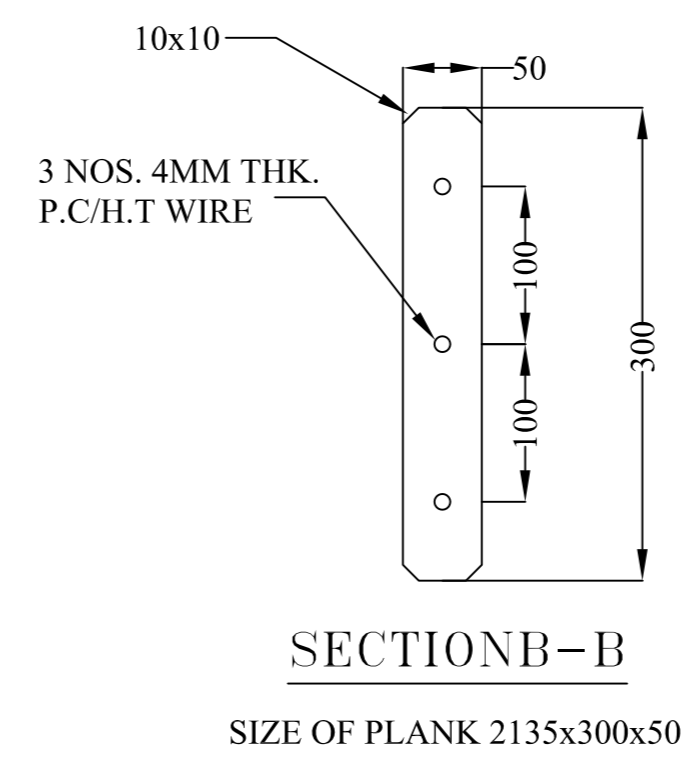
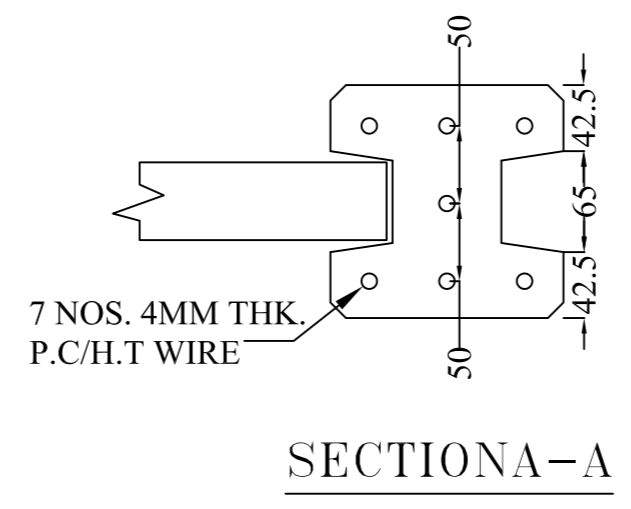
REV.	DATE	DESCRIPTION
R0	07.09.2020	Submission For Approval

DRAWN BY :	D.D.
DESIGNED BY :	N.R.
CHECKED BY :	S.K.S.
APPROVED BY :	B.P.
DATE :	07/09/2020

TITLE :	TYPICAL JUNCTION TYPE-T
DRG. NO. :	DRG NO.: NHAI/RO/GHY/NH - 31/ERLANG/NPEC/JN/ 02
CHAINAGE :	



TYPICAL DETAILS OF PRE-CAST BOUNDARY WALL



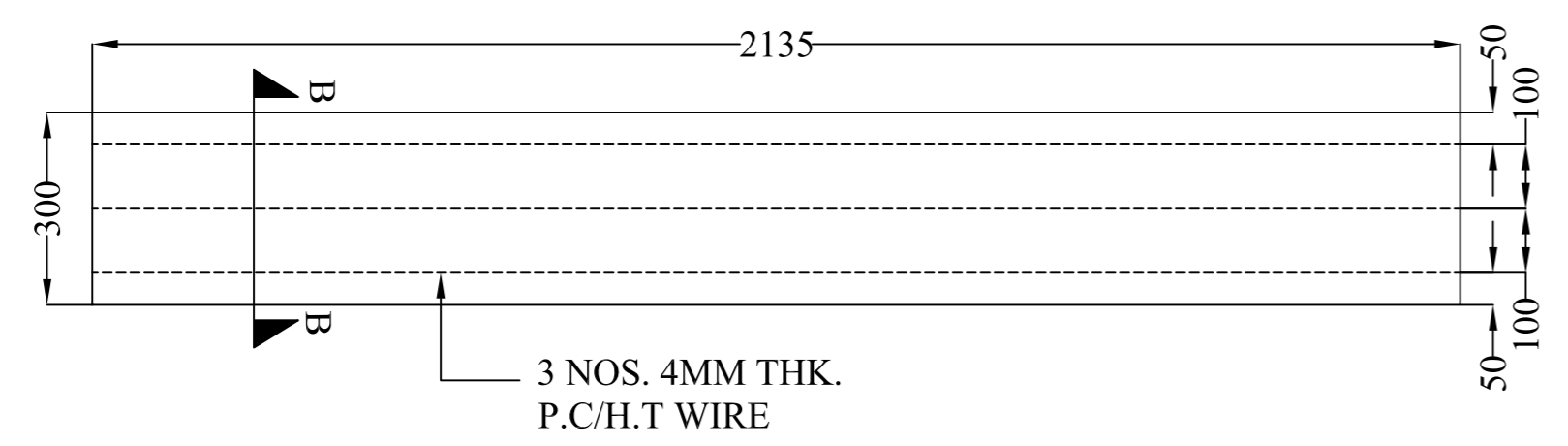
SECTION B-B
SIZE OF PLANK 2135x300x50

NOTES:-

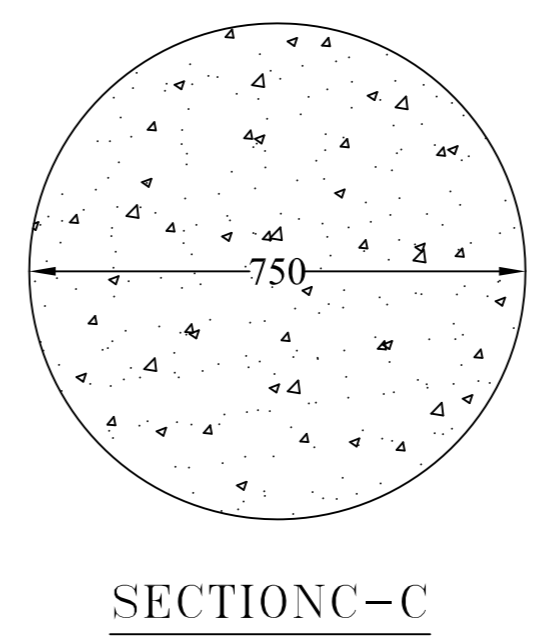
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.
2. DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED
3. SAFE BEARING CAPACITY AT FOUNDING IS 10.0t/M².
4. CONCRETE SHALL BE DESIGN MIX WITH A MINIMUM CHARACTERISTIC OF 35MPa.

PRESTRESSING DETAIL:-

1. ULTIMATE BREAKING STRENGTH OF SINGLE PLAN WIRE OF 4MM IS 2.6 TONNE.
2. STRAND SHALL BE STRESSED UPTO 50% OF ULTIMATE BREAKING STRENGTH IN SUCH A MANNER THAT STRAND WILL REMAIN STRAIGHT.



ELEVATION OF PRE-CAST PANEL



SECTION C-C

CLIENT :



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Dispur, Guwahati - 781006, Assam.

DPR CONSULTANTS:



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REV.	DATE	DESCRIPTION
R0	11.11.2020	Submission For Approval

DRAWN BY :	D.D.
DESIGNED BY :	N.R.
CHECKED BY :	S.K.S.
APPROVED BY :	B.P.
DATE :	11/11/2020

TITLE :	
DRG. NO. :	DRG NO.: NPEC/NH - 37/BOUNDARY WALL/ 01
CHAINAGE :	