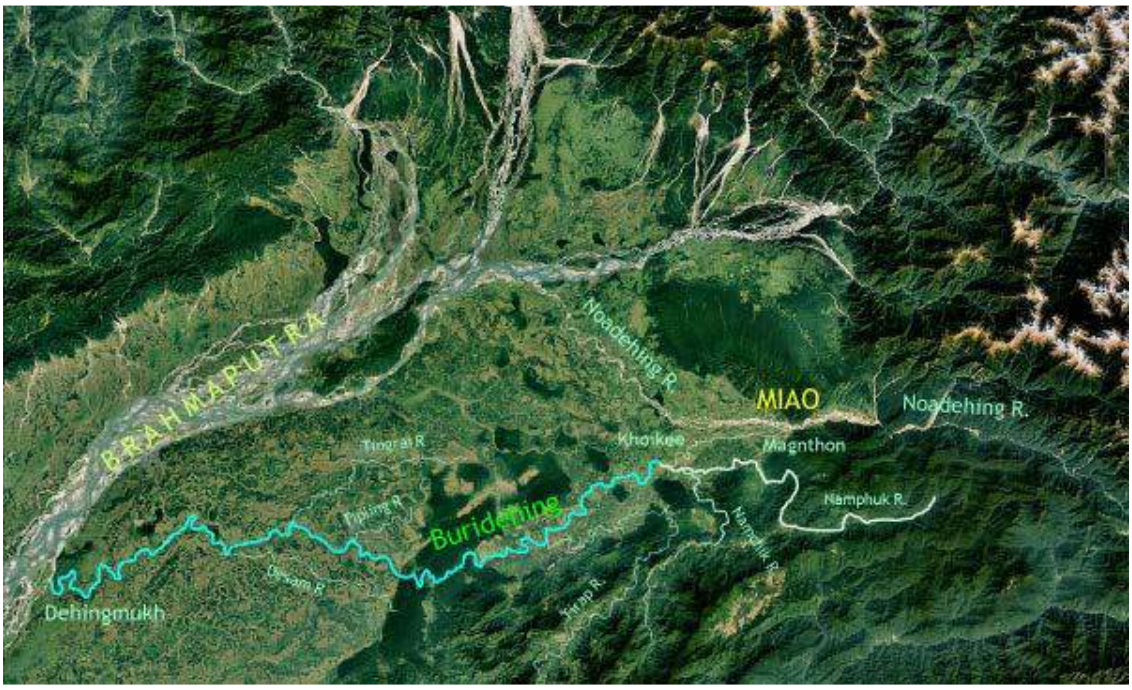
Govt. of Assam
Water Resources Department



Detailed Project Report

Name of the scheme:

Integrated Water Resources Management of Buridehing Basin (Vol-2)

Estimated Cost: Rs. 733,04,73,000.00

Submitted by:
Executive Engineer
Dibrugarh Water Resources Division

Dibrugarh Water Resources Division
Dibrugarh

Jan'2022

Contents

(Volume-2)

QUANTITY STATEMENT-I

Name of the Scheme: Integrated Water Resources Management of Buridehing Basin

STATEMENT OF QUANTITIES FOR CLEARING MEDIUM JUNGLES AND

Right Bank Embankments	**Chainage (m)**		**Trees**	
	rom	**To**		
E-29 CONSTRUCTION OF AN EMBANKMENT ALONG THE R/B OF BURIDEHING RIVER FROM DEOCHALI HILL TO TIPLING GHAT PH-I (FAKIAL GRAZING)	0	250	5	
	250	750	88	
	750	1250	176	
	1250	1500	88	
	1500	2000	147	
	2000	2750	88	
	2750	3000	88	
	3000	3250	29	
	3250	3750	147	
	3750	4250	147	
	4250	4750	88	
	4750	5250	29	
	5250	5750	59	
	5750	6250	88	
	6250	6750	147	
	6750	7250	59	
	7250	7500	88	
	7500	8000	176	
	8000	8250	29	
Sub-Total				***1776 Nos.***
E-30 CONSTRUCTION OF AN EMBANKMENT ALONG THE R/B OF BURIDEHING RIVER FROM DEOCHALI HILL TO TIPLING GHAT PH-II (FAKIAL GRAZING)	0	500	59	
	500	750	29	
	750	1500	221	
	1500	2000	118	
	2000	2750	88	
	2750	3000	44	
	3000	3750	44	
	3750	4500	44	
	4500	4750	44	
	4750	5250	88	
	5250	5500	29	
	5500	6500	59	
	6500	7000	59	
	7000	8250	441	
	8250	8500	15	
	8500	9000	176	
	9000	9750	44	
	9750	11330	93	
Sub-Total				***1695 Nos.***

Right Bank Emb kments	Ch inage (m)		Trees	
	rom	To		
E-26 CONSTRUCTION OF T/DYKE ALONG THE R/B OF BURIDEHING RIVER FROM DEOCHALI TO TIPLING GHAT FROM NOWJAN TO RLY LINE - PH- III	0	250	15	
	250	500	88	
	500	1000	29	
	1000	1500	29	
Sub-Total				***161 N s.***
E-25 TRIBUTARY DYKE FROM BHEKULAJAN TO TIPLING	0	2250	397	
	2250	4500	662	
	4500	5250	132	
	5250	7250	706	
	7250	9000	412	
	9000	10250	368	
	10250	12500	794	
	12500	13300	235	
Sub-Total				***3706 Nos.***
E-14 EXTENSION OF TENGAKHAT BUND UPTO JOKAI R.F.	0	2750	647	
	2750	3800	62	
	3800	4800	235	
	4800	7000	129	
	7000	8750	412	
	8750	9500	132	
	9500	12000	588	
	12000	15000	882	
	15000	18750	662	
	18750	19750	118	
	19750	20200	26	
Sub-Total				***3893 Nos.***
E-15 EXTENSION OF TENGAKHAT BUND FROM JOKAI R.F. TO A.T. ROAD	0	2250	265	
	2250	4750	882	
	4750	7000	397	
	7000	9250	132	
	9250	11750	294	
	11750	13500	412	
Sub-Total				***2382 Nos.***
E-09 DEHING MARGINAL BUND FROM KOTOHA TO BHOGAMUR	0	2800	494	
	2800	5150	276	
	5150	7000	435	
	7000	8400	329	
Sub-Total				***1534 Nos.***

Right Bank Emb kments	Ch inage (m)		Trees	
	rom	To		
E-10 DEHING BUND FROM BHOGAMUR TO SESSAMUKH	0	1500	494	
	1500	2200	276	
	2200	3200	123	
	15200	16700	118	
	16700	17500	435	
	17500	18600	329	
Sub-Total				***1775 Nos.***
E-28 TIPLING LB EMBKT.	0	1500	88	
	1500	3200	600	
	3200	4000	282	
Sub-Total				***970 Nos.***
E-27 TIPLING RB EMBKT	0	1250	147	
	1250	2750	176	
	2750	3800	62	
Sub-Total				***385 Nos.***
E-24 TINGRAI LB EMBKT	0	2250	529	
	2250	3000	44	
	3000	3750	265	
	3750	4700	112	
Sub-Total				***950 Nos.***
E-23 TINGRAI RB EMBKT	0	2750	971	
	2750	4300	182	
	4300	5400	129	
Sub-Total				***1282 Nos.***
Total for RB				***20509 Nos.***

Right Bank Emb kments	Ch inage (m)		Trees	
	rom	To		
Left Bank Embankments	**Chainage (m)**		**Turfing Area = Avg (4) x Length (2) sq.m**	
1	**2**		**6**	
E-39 T/DYKE ALONG THE L/B OF BURIDEHING RIVER FROM CHIPPIBASTI TO MOLONG GAON	0	2250	662	
	2250	2700	176	
Sub-Total				***38 Nos.***
E-31 T/DYKE ALONG THE L/B OF BURIDEHING RIVER FROM JOYPUR TO NAHARKATIA	0	1250	106	
	1250	2750	88	
	2750	5500	162	
	5500	7200	100	
Sub-Total				***456 Nos.***
E-17 EXTENSION OF SASSONI TINGKHONG BUND PH-II	0	2000	588	
	2000	4250	529	
	4250	5500	368	
Sub-Total				***1485 Nos.***
E-16 EXTENSION OF SASSONI TINGKHONG BUND PH-I	0	2250	662	
	2250	3300	371	
	3300	5000	400	
	5000	7000	471	
	7000	9750	324	
	9750	11000	147	
	11000	12000	235	
Sub-Total				***2610 Nos.***
E-22 TIE-BUND OF GELA DESAM	0	2500	735	
	2500	5750	765	
	5750	7200	426	
Sub-Total				***1926 Nos.***
E-19 DEHING BUND 1ST SECTION FROM AGHUNIBARI TO SESSUGHAT	0	3000	353	
	3000	6100	1094	
	6100	10500	1035	
	10500	12600	494	
	12600	15700	547	
	15700	18800	1094	
	18800	22250	203	
	22250	25200	521	
Sub-Total				***5341 Nos.***

Right Bank Embankments	Chainage (m)		Trees	
	From	To		
E-12 DEHING BUND 1ST SECTION FROM AGHUNIBARI TO SESSUGHAT	0	2750	162	
	2750	4800	241	
	4800	8750	232	
	8750	9100	191	
Sub-Total				***826 Nos.***
E-11 DEHING BUND OLD A.T. ROAD FROM SESSUGHAT TO JUNGAON	0	2500	294	
	2500	3250	176	
	3250	5100	218	
Sub-Total				***688 Nos.***
Total for LB				***14170 Nos.***

583107 sq.m

34679 Nos.

Executive Engineer
Dibrugarh Water Resources Division
Dibrugarh

QUANTITY STATEMENT-II

Name of the Scheme: Integrated Water Resources Management of Buridehing Basin

STATEMENT OF QUANTITIES FOR EARTHWORK, GRABBING AND TURFING

Embankment Code	Length in m	Turfing Area in Sq.m	Vol. of Filling above OGL in Cu.M	Vol. of Cutting in Grabbing below OGL in Cu.M	Total Volume of Filling in Cu.M
E-09	*8400*	*2,08,186*	*5,62,876*	*37,130*	*6,00,006*
E-10	*4500*	*97,717*	*2,12,418*	*17,615*	*2,30,033*
E-11	*5100*	*1,30,010*	*3,53,191*	*22,629*	*3,75,820*
E-12	*9100*	*1,94,387*	*4,09,383*	*35,132*	*4,44,515*
E-14	*20200*	*4,81,152*	*11,94,813*	*84,658*	*12,79,472*
E-15	*13500*	*3,18,765*	*7,66,472*	*56,482*	*8,22,955*
E-16	*12000*	*2,66,925*	*6,63,206*	*47,856*	*7,11,062*
E-17	*5500*	*1,31,183*	*3,04,290*	*23,101*	*3,27,391*
E-19	*25200*	*7,44,553*	*23,44,008*	*1,26,539*	*24,70,546*
E-22	*7200*	*1,87,767*	*5,04,757*	*32,560*	*5,37,317*
E-23	*5400*	*1,45,236*	*4,41,142*	*25,054*	*4,66,196*
E-24	*4700*	*1,07,434*	*2,82,697*	*19,132*	*3,01,829*
E-25	*13300*	*3,26,590*	*8,41,639*	*1,27,016*	*9,68,655*
E-26	*1500*	*29,804*	*78,011*	*5,494*	*83,505*
E-27	*3800*	*72,946*	*1,66,853*	*13,563*	*1,80,416*
E-28	*4000*	*77,211*	*1,74,702*	*14,320*	*1,89,022*
E-29	*8250*	*1,50,698*	*3,01,873*	*28,367*	*3,30,240*
E-30	*11330*	*2,21,712*	*4,07,092*	*41,069*	*4,48,161*
E-31	*7200*	*1,43,367*	*3,49,047*	*27,331*	*3,76,378*
E-39	*2700*	*54,742*	*1,15,816*	*10,028*	*1,25,844*
E-40	*2100*	*39,312*	*1,12,307*	*7,352*	*1,19,659*
E-41	*8500*	*1,54,907*	*4,18,486*	*28,461*	*4,46,947*
Total	**1,83,480**	**42,84,603**	**1,10,05,079**	**8,30,888**	**1,18,35,967**
		Grabbing Area (Volume/0.15m)		**5539255 Sqm**	
				553.93 Hec	

Executive Engineer
Dibrugarh WR Division
Dibrugarh

QUANTITY STATEMENT-II(A)

Statement showing Quantity of Grabbing, Earthwork and Turfing

Sl.	Section	Previous	Grabbing (0.15m depth)				Filling Volume				Turfing						
No.	From	Section	Difference	Width	Average	Volume	Area	Previous	Average	Volume	Left Bank			Right Bank			Total
	Mtrs.	Mtrs.	Mtrs.	Mtrs.	Mtrs.	Cubic Metres	Sq. Mtrs	Area	Sq. Mtrs	Cubic Meters	Slope Length	Mean	Area	Slope Length	Mean	Area	Area
E-9																	
1	0.000	-		29.582	0.000	0.000	61.754				10.285			15.161			
2	300.000	0.000	300.000	32.334	30.958	1393.110	83.950	61.754	72.852	21855.600	10.835	10.560	3168.000	17.543	16.352	4905.600	8073.600
3	800.000	300.000	500.000	31.109	31.722	2379.113	76.887	83.950	80.419	40209.250	11.605	11.220	5610.000	15.526	16.535	8267.250	13877.250
4	1650.000	800.000	850.000	27.229	29.169	3719.048	57.040	76.887	66.964	56918.975	7.726	9.670	8219.500	15.094	15.310	13013.500	21233.000
5	2800.000	1650.000	1150.000	27.759	27.494	4742.715	60.748	57.040	58.894	67728.100	8.789	8.260	9499.000	14.650	14.872	17102.800	26601.800
6	4100.000	2800.000	1300.000	27.807	27.783	5417.685	60.124	60.748	60.436	78566.800	9.216	9.000	11700.000	14.298	14.474	18816.200	30516.200
7	5150.000	4100.000	1050.000	29.749	28.778	4532.535	67.402	60.124	63.763	66951.150	10.501	9.860	10353.000	15.133	14.716	15451.275	25804.275
8	6500.000	5150.000	1350.000	32.626	31.188	6315.469	76.394	67.402	71.898	97062.300	11.805	11.150	15052.500	16.859	15.996	21594.600	36647.100
9	7000.000	6500.000	500.000	32.326	32.476	2435.700	80.865	76.394	78.630	39314.750	10.745	11.280	5640.000	16.204	16.532	8265.750	13905.750
10	8000.000	7000.000	1000.000	28.963	30.645	4596.675	67.711	80.865	74.288	74288.000	8.523	9.630	9630.000	8.578	12.391	12391.000	22021.000
11	8400.000	8000.000	400.000	24.301	26.632	1597.920	32.193	67.711	49.952	19980.800	12.158	10.340	4136.000	18.271	13.425	5369.800	9505.800
						37129.969				**562875.725**						Total	**208185.775**
E-10																	
1	0.000	-		23.852			38.699				7.867			11.400			
2	300.000	0.000	300.000	21.267	22.560	1015.178	31.064	38.699	34.882	10464.450	8.000	7.934	2380.050	8.551	9.976	2992.650	5372.700
3	700.000	300.000	400.000	25.826	23.547	1412.790	45.401	31.064	38.233	15293.000	9.192	8.596	3438.400	12.232	10.392	4156.600	7595.000
4	1300.000	700.000	600.000	26.385	26.106	2349.495	50.359	45.401	47.880	28728.000	9.003	9.098	5458.500	12.999	12.616	7569.300	13027.800
5	1700.000	1300.000	400.000	25.970	26.178	1570.650	44.940	50.359	47.650	19059.800	9.879	9.441	3776.400	11.736	12.368	4947.000	8723.400
6	2000.000	1700.000	300.000	27.129	26.550	1194.728	49.772	44.940	47.356	14206.800	9.996	9.938	2981.250	12.847	12.292	3687.450	6668.700
7	2100.000	2000.000	100.000	27.148	27.139	407.078	54.669	49.772	52.221	5222.050	9.055	9.526	952.550	13.755	13.301	1330.100	2282.650
8	3000.000	2100.000	900.000	26.498	26.823	3621.105	50.791	54.669	52.730	47457.000	8.663	8.859	7973.100	13.439	13.597	12237.300	20210.400
9	3200.000	3000.000	200.000	28.959	27.729	831.855	65.194	50.791	57.993	11598.500	10.567	9.615	1923.000	14.238	13.839	2767.700	4690.700
1	15200.000			26.257			40.071				9.578			12.322			
2	15700.000	15200.000	500.000	24.068	25.163	1887.188	32.278	40.071	36.175	18087.250	9.214	9.396	4698.000	10.358	11.340	5670.000	10368.000
3	16200.000	15700.000	500.000	29.805	26.937	2020.238	63.999	32.278	48.139	24069.250	10.853	10.034	5016.750	14.860	12.609	6304.500	11321.250
4	16500.000	16200.000	300.000	28.187	28.996	1304.820	57.546	63.999	60.773	18231.750	10.636	10.745	3223.350	13.360	14.110	4233.000	7456.350
						17615.123				212417.850						Total	97716.950
E-11																	
1	0.000	-		25.484			45.619				11.739			9.332			
2	1000.000	0.000	1000.000	24.347	24.916	3737.325	46.336	45.619	45.978	45977.500	11.478	11.609	11608.500	8.338	8.835	8835.000	20443.500
3	2350.000	1000.000	1350.000	33.067	28.707	5813.168	81.226	46.336	63.781	86104.350	17.130	14.304	19310.400	11.910	10.124	13667.400	32977.800
4	2500.000	2350.000	150.000	30.507	31.787	715.208	73.292	81.226	77.259	11588.850	15.286	16.208	2431.200	11.662	11.786	1767.900	4199.100
5	3250.000	2500.000	750.000	33.069	31.788	3576.150	89.892	73.292	81.592	61194.000	16.263	15.775	11830.875	12.923	12.293	9219.375	21050.250
6	4250.000	3250.000	1000.000	30.779	31.924	4788.600	74.376	89.892	82.134	82134.000	15.399	15.831	15831.000	11.434	12.179	12178.500	28009.500
7	5100.000	4250.000	850.000	31.941	31.360	3998.400	81.370	74.376	77.873	66192.050	15.516	15.458	13138.875	12.545	11.990	10191.075	23329.950
						22628.850				353190.750						Total	130010.100
E-12																	
1	0.000	-		22.433			36.398				9.392			8.411			
2	1250.000	0.000	1250.000	24.895	23.664	4437.000	44.946	36.398	40.672	50840.000	11.257	10.325	12905.625	9.276	8.844	11054.375	23960.000
3	2750.000	1250.000	1500.000	29.326	27.111	6099.863	59.501	44.946	52.224	78335.250	14.626	12.942	19412.250	10.566	9.921	14881.500	34293.750
4	3500.000	2750.000	750.000	23.824	26.575	2989.688	39.985	59.501	49.743	37307.250	11.090	12.858	9643.500	8.165	9.366	7024.125	16667.625
5	4800.000	3500.000	1300.000	26.944	25.384	4949.880	44.744	39.985	42.365	55073.850	12.428	11.759	15286.700	10.234	9.200	11959.350	27246.050
6	6000.000	4800.000	1200.000	25.857	26.401	4752.090	47.777	44.744	46.261	55512.600	11.786	12.107	14528.400	9.700	9.967	11960.400	26488.800
7	7250.000	6000.000	1250.000	25.725	25.791	4835.813	41.933	47.777	44.855	56068.750	11.954	11.870	14837.500	9.374	9.537	11921.250	26758.750
8	8750.000	7250.000	1500.000	24.776	25.251	5681.363	37.995	41.933	39.964	59946.000	10.844	11.399	17098.500	9.490	9.432	14148.000	31246.500
9	9100.000	8750.000	350.000	28.037	26.407	1386.341	55.144	37.995	46.570	16299.325	13.653	12.249	4286.975	10.157	9.824	3438.225	7725.200

Sl.	Section	Previous	Grabbing (0.15m depth)				Filling Volume				Turfing						
No.	From	Section	Difference	Width	Average	Volume	Area	Previous	Average	Volume	Left Bank			Right Bank			Total
	Mtrs.	Mtrs.	Mtrs.	Mtrs.	Mtrs.	Cubic Metres	Sq. Mtrs	Area	Sq. Mtrs	Cubic Meters	Slope Length	Mean	Area	Slope Length	Mean	Area	Area
						35132.036				409383.025						Total	194386.675
E-14																	
1	0.000	-	0.000	28.236	0.000	0.000	53.178			0.000	8.583		0.000	15.347			0.000
2	1000.000	0.000	1000.000	28.792	28.514	4277.100	60.519	53.178	56.849	56848.500	10.298	9.441	9440.500	14.913	15.130	15130.000	24570.500
3	1800.000	1000.000	800.000	23.862	26.327	3159.240	41.553	60.519	51.036	40828.800	8.035	9.167	7333.200	11.700	13.307	10645.200	17978.400
4	2750.000	1800.000	950.000	26.393	25.128	3580.669	45.120	41.553	43.337	41169.675	8.017	8.026	7624.700	13.969	12.835	12192.775	19817.475
5	3800.000	2750.000	1050.000	23.972	25.183	3966.244	47.354	45.120	46.237	48548.850	8.343	8.180	8589.000	12.969	13.469	14142.450	22731.450
6	4800.000	3800.000	1000.000	29.745	26.859	4028.775	57.097	47.354	52.226	52225.500	8.980	8.662	8661.500	16.563	14.766	14766.000	23427.500
7	7000.000	4800.000	2200.000	29.396	29.571	9758.265	53.588	57.097	55.343	121753.500	10.560	9.770	21494.000	14.706	15.635	34395.900	55889.900
8	8750.000	7000.000	1750.000	26.688	28.042	7361.025	50.591	53.588	52.090	91156.625	9.395	9.978	17460.625	13.120	13.913	24347.750	41808.375
9	9500.000	8750.000	750.000	23.182	24.935	2805.188	42.228	50.591	46.410	34807.125	7.171	8.283	6212.250	11.479	12.300	9224.625	15436.875
10	12000.000	9500.000	2500.000	25.892	24.537	9201.375	49.264	42.228	45.746	114365.000	8.751	7.961	19902.500	12.663	12.071	30177.500	50080.000
11	15000.000	12000.000	3000.000	26.992	26.442	11898.900	57.492	49.264	53.378	160134.000	9.590	9.171	27511.500	13.067	12.865	38595.000	66106.500
12	16750.000	15000.000	1750.000	31.197	29.095	7637.306	80.394	57.492	68.943	120650.250	12.108	10.849	18985.750	15.014	14.041	24570.875	43556.625
13	18750.000	16750.000	2000.000	32.379	31.788	9536.400	90.485	80.394	85.440	170879.000	11.615	11.862	23723.000	16.825	15.920	31839.000	55562.000
14	19750.000	18750.000	1000.000	37.498	34.939	5240.775	113.750	90.485	102.118	102117.500	14.059	12.837	12837.000	19.946	18.386	18385.500	31222.500
15	20200.000	19750.000	450.000	27.892	32.695	2206.913	61.046	113.750	87.398	39329.100	9.400	11.730	5278.275	14.213	17.080	7685.775	12964.050
						84658.174				1194813.425						Total	481152.150
E-15																	
1	0.000	-		26.409			54.178				9.025			13.004			
2	250.000	0.000	250.000	24.618	25.514	956.756	40.362	54.178	47.270	11817.500	7.413	8.219	2054.750	12.636	12.820	3205.000	5259.750
3	500.000	250.000	250.000	27.834	26.226	983.475	50.849	40.362	45.606	11401.375	9.603	8.508	2127.000	13.961	13.299	3324.625	5451.625
4	1000.000	500.000	500.000	31.429	29.632	2222.363	71.888	50.849	61.369	30684.250	10.640	10.122	5060.750	16.933	15.447	7723.500	12784.250
5	1750.000	1000.000	750.000	26.190	28.810	3241.069	50.051	71.888	60.970	45727.125	8.801	9.721	7290.375	12.984	14.959	11218.875	18509.250
6	2250.000	1750.000	500.000	25.991	26.091	1956.788	45.378	50.051	47.715	23857.250	8.047	8.424	4212.000	13.486	13.235	6617.500	10829.500
7	2750.000	2250.000	500.000	28.235	27.113	2033.475	58.867	45.378	52.123	26061.250	9.621	8.834	4417.000	14.367	13.927	6963.250	11380.250
8	3250.000	2750.000	500.000	25.768	27.002	2025.113	51.609	58.867	55.238	27619.000	8.307	8.964	4482.000	13.005	13.686	6843.000	11325.000
9	3750.000	3250.000	500.000	25.723	25.746	1930.913	50.440	51.609	51.025	25512.250	7.918	8.113	4056.250	13.325	13.165	6582.500	10638.750
10	4250.000	3750.000	500.000	26.021	25.872	1940.400	51.279	50.440	50.860	25429.750	8.452	8.185	4092.500	13.135	13.230	6615.000	10707.500
11	4750.000	4250.000	500.000	24.811	25.416	1906.200	39.228	51.279	45.254	22626.750	8.343	8.398	4198.750	11.963	12.549	6274.500	10473.250
12	5250.000	4750.000	500.000	28.476	26.644	1998.263	50.660	39.228	44.944	22472.000	10.099	9.221	4610.500	14.170	13.067	6533.250	11143.750
13	6250.000	5250.000	1000.000	31.502	29.989	4498.350	76.326	50.660	63.493	63493.000	11.140	10.620	10619.500	16.379	15.275	15274.500	25894.000
14	7000.000	6250.000	750.000	25.151	28.327	3186.731	41.088	76.326	58.707	44030.250	8.317	9.729	7296.375	12.346	14.363	10771.875	18068.250
15	7500.000	7000.000	500.000	26.554	25.853	1938.938	50.828	41.088	45.958	22979.000	8.332	8.325	4162.250	13.811	13.079	6539.250	10701.500
16	8500.000	7500.000	1000.000	25.327	25.941	3891.075	50.200	50.828	50.514	50514.000	8.103	8.218	8217.500	12.733	13.272	13272.000	21489.500
17	9250.000	8500.000	750.000	28.086	26.707	3004.481	59.771	50.200	54.986	41239.125	9.535	8.819	6614.250	14.190	13.462	10096.125	16710.375
18	9750.000	9250.000	500.000	28.091	28.089	2106.638	59.565	59.771	59.668	29834.000	9.227	9.381	4690.500	14.588	14.389	7194.500	11885.000
19	10500.000	9750.000	750.000	27.811	27.951	3144.488	59.866	59.565	59.716	44786.625	9.337	9.282	6961.500	14.197	14.393	10794.375	17755.875
20	11750.000	10500.000	1250.000	31.588	29.700	5568.656	73.489	59.866	66.678	83346.875	10.849	10.093	12616.250	16.583	15.390	19237.500	31853.750
21	12250.000	11750.000	500.000	30.460	31.024	2326.800	67.419	73.489	70.454	35227.000	10.937	10.893	5446.500	15.593	16.088	8044.000	13490.500
22	12500.000	12250.000	250.000	30.197	30.329	1137.319	64.527	67.419	65.973	16493.250	10.955	10.946	2736.500	15.236	15.415	3853.625	6590.125
23	13500.000	12500.000	1000.000	29.591	29.894	4484.100	58.114	64.527	61.321	61320.500	10.284	10.620	10619.500	15.171	15.204	15203.500	25823.000
						56482.388				766472.125						Total	318764.750
E-16																	
1	0.000	-	0.000	25.068	0.000	0.000	44.546				10.832			9.830			
2	800.000	0.000	800.000	24.435	24.752	2970.180	46.061	44.546	45.304	36242.800	11.045	10.939	8750.800	8.896	9.363	7490.400	16241.200
3	1500.000	800.000	700.000	21.734	23.085	2423.873	33.830	46.061	39.946	27961.850	9.193	10.119	7083.300	7.841	8.369	5857.950	12941.250
4	1800.000	1500.000	300.000	23.404	22.569	1015.605	40.482	33.830	37.156	11146.800	10.566	9.880	2963.850	8.104	7.973	2391.750	5355.600
5	2250.000	1800.000	450.000	24.833	24.119	1627.999	45.357	40.482	42.920	19313.775	11.248	10.907	4908.150	9.037	8.571	3856.725	8764.875
6	2750.000	2250.000	500.000	25.495	25.164	1887.300	50.709	45.357	48.033	24016.500	11.934	11.591	5795.500	9.102	9.070	4534.750	10330.250
7	3200.000	2750.000	450.000	23.272	24.384	1645.886	41.599	50.709	46.154	20769.300	10.716	11.325	5096.250	8.078	8.590	3865.500	8961.750

Sl.	Section	Previous	Grabbing (0.15m depth)				Filling Volume				Turfing						
No.	From	Section	Difference	Width	Average	Volume	Area	Previous	Average	Volume	Left Bank			Right Bank			Total
	Mtrs.	Mtrs.	Mtrs.	Mtrs.	Mtrs.	Cubic Metres	Sq. Mtrs	Area	Sq. Mtrs	Cubic Meters	Slope Length	Mean	Area	Slope Length	Mean	Area	Area
8	3300.000	3200.000	100.000	25.498	24.385	365.775	48.994	41.599	45.297	4529.650	12.180	11.448	1144.800	8.260	8.169	816.900	1961.700
9	4300.000	3300.000	1000.000	31.297	28.398	4259.625	77.847	48.994	63.421	63420.500	14.713	13.447	13446.500	12.513	10.387	10386.500	23833.000
10	5000.000	4300.000	700.000	27.169	29.233	3069.465	53.865	77.847	65.856	46099.200	12.149	13.431	9401.700	10.951	11.732	8212.400	17614.100
11	5750.000	5000.000	750.000	20.151	23.660	2661.750	32.296	53.865	43.081	32310.375	8.783	10.466	7849.500	6.761	8.856	6642.000	14491.500
12	6250.000	5750.000	500.000	26.041	23.096	1732.200	51.027	32.296	41.662	20830.750	12.296	10.540	5269.750	9.029	7.895	3947.500	9217.250
13	7000.000	6250.000	750.000	26.227	26.134	2940.075	53.216	51.027	52.122	39091.125	13.507	12.902	9676.125	8.277	8.653	6489.750	16165.875
14	7400.000	7000.000	400.000	28.532	27.380	1642.770	63.018	53.216	58.117	23246.800	13.397	13.452	5380.800	10.825	9.551	3820.400	9201.200
15	7750.000	7400.000	350.000	26.406	27.469	1442.123	58.521	63.018	60.770	21269.325	12.111	12.754	4463.900	10.136	10.481	3668.175	8132.075
16	8300.000	7750.000	550.000	30.906	28.656	2364.120	68.901	58.521	63.711	35041.050	14.498	13.305	7317.475	12.243	11.190	6154.225	13471.700
17	9750.000	8300.000	1450.000	26.574	28.740	6250.950	60.592	68.901	64.747	93882.425	12.584	13.541	19634.450	9.823	11.033	15997.850	35632.300
18	10250.000	9750.000	500.000	30.202	28.388	2129.100	71.185	60.592	65.889	32944.250	15.276	13.930	6965.000	10.454	10.139	5069.250	12034.250
19	10500.000	10250.000	250.000	24.302	27.252	1021.950	51.033	71.185	61.109	15277.250	12.278	13.777	3444.250	8.754	9.604	2401.000	5845.250
20	10900.000	10500.000	400.000	30.592	27.447	1646.820	82.077	51.033	66.555	26622.000	15.432	13.855	5542.000	10.249	9.502	3800.600	9342.600
21	11000.000	10900.000	100.000	26.702	28.647	429.705	56.065	82.077	69.071	6907.100	14.456	14.944	1494.400	9.942	10.096	1009.550	2503.950
22	11300.000	11000.000	300.000	28.617	27.660	1244.678	62.657	56.065	59.361	17808.300	13.381	13.919	4175.550	10.734	10.338	3101.400	7276.950
23	11700.000	11300.000	400.000	28.170	28.394	1703.610	56.458	62.657	59.558	23823.000	13.828	13.605	5441.800	10.120	10.427	4170.800	9612.600
24	12000.000	11700.000	300.000	33.202	30.686	1380.870	81.218	56.458	68.838	20651.400	17.627	15.728	4718.250	11.717	10.919	3275.550	7993.800
						47856.428				663205.525						Total	266925.025
E-17																	
1	0.000	-	0.000	26.815			55.850				13.320			9.143			
2	500.000	0.000	500.000	28.069	27.442	2058.150	59.276	55.850	57.563	28781.500	12.950	13.135	6567.500	10.939	10.041	5020.500	11588.000
3	750.000	500.000	250.000	25.707	26.888	1008.300	51.407	59.276	55.342	13835.375	12.364	12.657	3164.250	8.920	9.930	2482.375	5646.625
4	1200.000	750.000	450.000	32.575	29.141	1967.018	78.847	51.407	65.127	29307.150	16.407	14.386	6473.475	12.621	10.771	4846.725	11320.200
5	1500.000	1200.000	300.000	25.378	28.977	1303.943	43.929	78.847	61.388	18416.400	11.854	14.131	4239.150	9.091	10.856	3256.800	7495.950
6	2000.000	1500.000	500.000	28.240	26.809	2010.675	60.815	43.929	52.372	26186.000	13.585	12.720	6359.750	10.276	9.684	4841.750	11201.500
7	2500.000	2000.000	500.000	27.037	27.639	2072.888	44.790	60.815	52.803	26401.250	13.200	13.393	6696.250	9.596	9.936	4968.000	11664.250
8	3000.000	2500.000	500.000	26.924	26.981	2023.538	45.560	44.790	45.175	22587.500	13.177	13.189	6594.250	9.432	9.514	4757.000	11351.250
9	3750.000	3000.000	750.000	26.664	26.794	3014.325	51.809	45.560	48.685	36513.375	12.465	12.821	9615.750	9.895	9.664	7247.625	16863.375
10	4250.000	3750.000	500.000	28.549	27.607	2070.488	53.977	51.809	52.893	26446.500	13.825	13.145	6572.500	10.441	10.168	5084.000	11656.500
11	4750.000	4250.000	500.000	27.193	27.871	2090.325	49.707	53.977	51.842	25921.000	12.614	13.220	6609.750	10.391	10.416	5208.000	11817.750
12	5250.000	4750.000	500.000	34.565	30.879	2315.925	81.196	49.707	65.452	32725.750	18.619	15.617	7808.250	13.131	11.761	5880.500	13688.750
13	5500.000	5250.000	250.000	27.604	31.085	1165.669	56.150	81.196	68.673	17168.250	13.052	15.836	3958.875	10.311	11.721	2930.250	6889.125
						23101.241				304290.050						Total	131183.275
E-19																	
1	0.000	-	0.000	32.651			90.803				16.898			11.874			
2	300.000	0.000	300.000	29.892	31.272	1407.218	76.908	90.803	83.856	25156.650	14.091	15.495	4648.350	11.766	11.820	3546.000	8194.350
3	700.000	300.000	400.000	34.041	31.967	1917.990	96.549	76.908	86.729	34691.400	17.420	15.756	6302.200	12.874	12.320	4928.000	11230.200
4	1300.000	700.000	600.000	34.144	34.093	3068.325	98.598	96.549	97.574	58544.100	17.937	17.679	10607.100	12.441	12.658	7594.500	18201.600
5	1700.000	1300.000	400.000	33.323	33.734	2024.010	89.889	98.598	94.244	37697.400	16.499	17.218	6887.200	13.106	12.774	5109.400	11996.600
6	2000.000	1700.000	300.000	34.095	33.709	1516.905	94.374	89.889	92.132	27639.450	17.198	16.849	5054.550	13.097	13.102	3930.450	8985.000
7	2100.000	2000.000	100.000	34.082	34.089	511.328	98.665	94.374	96.520	9651.950	17.927	17.563	1756.250	12.388	12.743	1274.250	3030.500
8	3000.000	2100.000	900.000	29.934	32.008	4321.080	75.496	98.665	87.081	78372.450	14.615	16.271	14643.900	11.384	11.886	10697.400	25341.300
9	3500.000	3000.000	500.000	35.383	32.659	2449.388	104.904	75.496	90.200	45100.000	17.186	15.901	7950.250	14.321	12.853	6426.250	14376.500
10	3900.000	3500.000	400.000	36.446	35.915	2154.873	113.232	104.904	109.068	43627.200	19.060	18.123	7249.200	13.827	14.074	5629.600	12878.800
11	4300.000	3900.000	400.000	37.125	36.786	2207.133	115.851	113.232	114.542	45816.600	19.424	19.242	7696.800	14.157	13.992	5596.800	13293.600
12	5200.000	4300.000	900.000	33.095	35.110	4739.850	94.994	115.851	105.423	94880.250	16.464	17.944	16149.600	12.951	13.554	12198.600	28348.200
13	6100.000	5200.000	900.000	32.020	32.557	4395.229	87.206	94.994	91.100	81990.000	16.355	16.410	14768.550	11.980	12.466	11218.950	25987.500
14	7900.000	6100.000	1800.000	29.012	30.516	8239.253	73.684	87.206	80.445	144801.000	12.587	14.471	26047.800	12.427	12.204	21966.300	48014.100
15	8600.000	7900.000	700.000	30.542	29.777	3126.585	76.286	73.684	74.985	52489.500	15.495	14.041	9828.700	10.946	11.687	8180.550	18009.250
16	9100.000	8600.000	500.000	29.693	30.118	2258.813	76.031	76.286	76.159	38079.250	14.036	14.766	7382.750	11.645	11.296	5647.750	13030.500
17	9800.000	9100.000	700.000	31.582	30.638	3216.938	80.269	76.031	78.150	54705.000	15.284	14.660	10262.000	12.240	11.943	8359.750	18621.750

Sl.	Section	Previous	Grabbing (0.15m depth)				Filling Volume				Turfing						
No.	From	Section	Difference	Width	Average	Volume	Area	Previous	Average	Volume	Left Bank			Right Bank			Total
	Mtrs.	Mtrs.	Mtrs.	Mtrs.	Mtrs.	Cubic Metres	Sq. Mtrs	Area	Sq. Mtrs	Cubic Meters	Slope Length	Mean	Area	Slope Length	Mean	Area	Area
18	10500.000	9800.000	700.000	32.007	31.795	3338.423	76.133	80.269	78.201	54740.700	14.308	14.796	10357.200	13.868	13.054	9137.800	19495.000
19	10800.000	10500.000	300.000	29.438	30.723	1382.513	71.210	76.133	73.672	22101.450	15.396	14.852	4455.600	10.356	12.112	3633.600	8089.200
20	11500.000	10800.000	700.000	34.261	31.850	3344.198	99.104	71.210	85.157	59609.900	17.112	16.254	11377.800	12.878	11.617	8131.900	19509.700
21	11600.000	11500.000	100.000	30.500	32.381	485.708	75.942	99.104	87.523	8752.300	16.526	16.819	1681.900	13.028	12.953	1295.300	2977.200
22	11900.000	11600.000	300.000	33.861	32.181	1448.123	92.869	75.942	84.406	25321.650	16.193	16.360	4907.850	13.033	13.031	3909.150	8817.000
23	12300.000	11900.000	400.000	34.631	34.246	2054.760	100.471	92.869	96.670	38668.000	17.140	16.667	6666.600	13.671	13.352	5340.800	12007.400
24	12600.000	12300.000	300.000	34.734	34.683	1560.713	104.664	100.471	102.568	30770.250	17.961	17.551	5265.150	12.877	13.274	3982.200	9247.350
25	13100.000	12600.000	500.000	31.653	33.194	2489.513	82.568	104.664	93.616	46808.000	15.950	16.956	8477.750	12.232	12.555	6277.250	14755.000
26	13600.000	13100.000	500.000	33.186	32.420	2431.463	93.636	82.568	88.102	44051.000	16.695	16.323	8161.250	12.435	12.334	6166.750	14328.000
27	14000.000	13600.000	400.000	36.153	34.670	2080.170	100.756	93.636	97.196	38878.400	18.699	17.697	7078.800	13.250	12.843	5137.000	12215.800
28	14600.000	14000.000	600.000	35.128	35.641	3207.645	98.587	100.756	99.672	59802.900	17.833	18.266	10959.600	13.794	13.522	8113.200	19072.800
29	15400.000	14600.000	800.000	37.618	36.373	4364.760	110.081	98.587	104.334	83467.200	18.870	18.352	14681.200	15.076	14.435	11548.000	26229.200
30	15700.000	15400.000	300.000	34.829	36.224	1630.058	94.842	110.081	102.462	30738.450	17.732	18.301	5490.300	14.262	14.669	4400.700	9891.000
31	16200.000	15700.000	500.000	35.460	35.145	2635.838	98.612	94.842	96.727	48363.500	18.038	17.885	8942.500	13.725	13.994	6996.750	15939.250
32	16500.000	16200.000	300.000	38.788	37.124	1670.580	124.418	98.612	111.515	33454.500	19.345	18.692	5607.450	15.313	14.519	4355.700	9963.150
33	17100.000	16500.000	600.000	28.690	33.739	3036.510	59.554	124.418	91.986	55191.600	14.359	16.852	10111.200	11.528	13.421	8052.300	18163.500
34	17800.000	17100.000	700.000	32.165	30.428	3194.888	78.977	59.554	69.266	48485.850	16.140	15.250	10674.650	11.686	11.607	8124.900	18799.550
35	18100.000	17800.000	300.000	33.449	32.807	1476.315	87.649	78.977	83.313	24993.900	16.724	16.432	4929.600	12.590	12.138	3641.400	8571.000
36	18800.000	18100.000	700.000	32.479	32.964	3461.220	84.181	87.649	85.915	60140.500	16.314	16.519	11563.300	12.407	12.499	8748.950	20312.250
37	19400.000	18800.000	600.000	35.244	33.861	3047.526	102.628	84.181	93.405	56042.700	18.580	17.447	10468.200	12.893	12.650	7590.000	18058.200
38	19850.000	19400.000	450.000	34.916	35.080	2367.893	95.307	102.628	98.968	44535.375	18.733	18.657	8395.425	12.911	12.902	5805.900	14201.325
39	20800.000	19850.000	950.000	31.131	33.024	4705.849	83.027	95.307	89.167	84708.650	16.016	17.375	16505.775	11.468	12.190	11580.025	28085.800
40	21200.000	20800.000	400.000	33.553	32.342	1940.532	97.914	83.027	90.471	36188.200	17.241	16.629	6651.400	12.386	11.927	4770.800	11422.200
41	21750.000	21200.000	550.000	34.202	33.878	2794.910	96.626	97.914	97.270	53498.500	17.539	17.390	9564.500	12.886	12.636	6949.800	16514.300
42	22250.000	21750.000	500.000	31.772	32.987	2474.029	86.452	96.626	91.539	45769.500	16.555	17.047	8523.500	11.946	12.416	6208.000	14731.500
43	22600.000	22250.000	350.000	34.172	32.972	1731.043	103.355	86.452	94.904	33216.225	17.307	16.931	5925.850	13.300	12.623	4418.050	10343.900
44	22750.000	22600.000	150.000	34.651	34.412	774.263	94.462	103.355	98.909	14836.275	17.294	17.301	2595.075	13.833	13.567	2034.975	4630.050
45	22800.000	22750.000	50.000	38.972	36.812	276.087	125.465	94.462	109.964	5498.175	17.127	17.211	860.525	13.917	13.875	693.750	1554.275
46	25200.000	22800.000	2400.000	36.462	37.717	13578.174	109.645	125.465	117.555	282132.000	19.063	18.095	43428.000	14.133	14.025	33660.000	77088.000
						126538.614				2344007.850						Total	744552.650
E-22																	
1	0.000	-	0.000	31.906			84.586				15.887			12.113			
2	500.000	0.000	500.000	27.984	29.945	2245.875	55.370	84.586	69.978	34989.000	13.061	14.474	7237.000	10.725	11.419	5709.500	12946.500
3	1000.000	500.000	500.000	30.028	29.006	2175.450	59.049	55.370	57.210	28604.750	15.856	14.459	7229.250	10.047	10.386	5193.000	12422.250
4	1500.000	1000.000	500.000	26.586	28.307	2123.025	49.771	59.049	54.410	27205.000	13.050	14.453	7226.500	9.175	9.611	4805.500	12032.000
5	1900.000	1500.000	400.000	29.981	28.284	1697.010	69.576	49.771	59.674	23869.400	14.701	13.876	5550.200	10.984	10.080	4031.800	9582.000
6	2500.000	1900.000	600.000	30.750	30.366	2732.895	73.579	69.576	71.578	42946.500	15.220	14.961	8976.300	11.493	11.239	6743.100	15719.400
7	3200.000	2500.000	700.000	30.051	30.401	3192.053	69.129	73.579	71.354	49947.800	14.218	14.719	10303.300	11.836	11.665	8165.150	18468.450
8	3800.000	3200.000	600.000	28.603	29.327	2639.430	66.628	69.129	67.879	40727.100	13.964	14.091	8454.600	10.528	11.182	6709.200	15163.800
9	4250.000	3800.000	450.000	31.485	30.044	2027.970	79.828	66.628	73.228	32952.600	17.120	15.542	6993.900	10.161	10.345	4655.025	11648.925
10	4800.000	4250.000	550.000	33.407	32.446	2676.795	84.457	79.828	82.143	45178.375	16.585	16.853	9268.875	12.950	11.556	6355.525	15624.400
11	5750.000	4800.000	950.000	27.137	30.272	4313.760	56.410	84.457	70.434	66911.825	13.401	14.993	14243.350	9.603	11.277	10712.675	24956.025
12	6500.000	5750.000	750.000	33.906	30.522	3433.669	93.387	56.410	74.899	56173.875	18.087	15.744	11808.000	11.763	10.683	8012.250	19820.250
13	6750.000	6500.000	250.000	29.645	31.776	1191.581	68.216	93.387	80.802	20200.375	13.929	16.008	4002.000	12.137	11.950	2987.500	6989.500
14	7200.000	6750.000	450.000	32.883	31.264	2110.320	87.564	68.216	77.890	35050.500	17.099	15.514	6981.300	11.919	12.028	5412.600	12393.900
						32559.833				504757.100						Total	187767.400
E-23																	
1	0.000	-	0.000	29.744	0.000	0.000	75.713	0.000	37.857	0.000	10.044			15.559			0.000
2	800.000	0.000	800.000	31.558	30.651	3678.120	87.136	75.713	81.425	65139.600	10.681	10.363	8290.000	16.871	16.215	12972.000	21262.000
3	1500.000	800.000	700.000	31.124	31.341	3290.805	83.740	87.136	85.438	59806.600	11.452	11.067	7746.550	15.686	16.279	11394.950	19141.500
4	1800.000	1500.000	300.000	30.697	30.911	1390.973	81.830	83.740	82.785	24835.500	10.411	10.932	3279.450	16.217	15.952	4785.450	8064.900

Sl.	Section	Previous	Grabbing (0.15m depth)				Filling Volume				Turfing						
No.	From	Section	Difference	Width	Average	Volume	Area	Previous	Average	Volume	Left Bank			Right Bank			Total
	Mtrs.	Mtrs.	Mtrs.	Mtrs.	Mtrs.	Cubic Metres	Sq. Mtrs	Area	Sq. Mtrs	Cubic Meters	Slope Length	Mean	Area	Slope Length	Mean	Area	Area
5	2250.000	1800.000	450.000	32.712	31.705	2140.054	91.462	81.830	86.646	38990.700	11.851	11.131	5008.950	16.983	16.600	7470.000	12478.950
6	2750.000	2250.000	500.000	29.281	30.997	2324.738	71.200	91.462	81.331	40665.500	10.495	11.173	5586.500	14.645	15.814	7907.000	13493.500
7	3200.000	2750.000	450.000	28.454	28.868	1948.556	63.559	71.200	67.380	30320.775	9.330	9.913	4460.625	14.872	14.759	6641.325	11101.950
8	3300.000	3200.000	100.000	30.687	29.571	443.558	78.894	63.559	71.227	7122.650	9.940	9.635	963.500	16.650	15.761	1576.100	2539.600
9	4300.000	3300.000	1000.000	31.877	31.282	4692.300	86.460	78.894	82.677	82677.000	11.211	10.576	10575.500	16.706	16.678	16678.000	27253.500
10	5000.000	4300.000	700.000	30.811	31.344	3291.120	81.049	86.460	83.755	58628.150	11.134	11.173	7820.750	15.655	16.181	11326.350	19147.100
11	5400.000	5000.000	400.000	30.972	30.892	1853.490	83.729	81.049	82.389	32955.600	11.433	11.284	4513.400	15.544	15.600	6239.800	10753.200
						25053.713				441142.075						Total	145236.200
E-24																	
1	0.000	-	0.000	24.594	0.000	0.000	51.166	0.000		0.000	10.631			9.513			0.000
2	500.000	0.000	500.000	26.613	25.604	1920.263	57.751	51.166	54.459	27229.250	13.406	12.019	6009.250	8.827	9.170	4585.000	10594.250
3	1600.000	500.000	1100.000	30.437	28.525	4706.625	74.936	57.751	66.344	72977.850	15.721	14.564	16019.850	10.647	9.737	10710.700	26730.550
4	2250.000	1600.000	650.000	28.675	29.556	2881.710	69.300	74.936	72.118	46876.700	14.107	14.914	9694.100	10.389	10.518	6836.700	16530.800
5	3000.000	2250.000	750.000	28.188	28.432	3198.544	60.897	69.300	65.099	48823.875	14.188	14.148	10610.625	9.758	10.074	7555.125	18165.750
6	3750.000	3000.000	750.000	24.987	26.588	2991.094	51.884	60.897	56.391	42292.875	11.679	12.934	9700.125	8.841	9.300	6974.625	16674.750
7	4700.000	3750.000	950.000	23.205	24.096	3433.680	41.792	51.884	46.838	44496.100	10.862	11.271	10706.975	8.066	8.454	8030.825	18737.800
						19131.915				282696.650						Total	107433.900
E-25																	
1	0.000	-		34.441	0.000	0.000	0.000				7.938			9.623			0.000
2	200.000	0.000	200.000	37.447	35.944	1078.320	37.046	0.000	18.523	3704.600	7.453	7.696	1539.100	11.432	10.528	2105.500	3644.600
3	300.000	200.000	100.000	57.350	47.399	710.978	51.971	37.046	44.509	4450.850	10.237	8.845	884.500	12.896	12.164	1216.400	2100.900
4	750.000	300.000	450.000	46.637	51.994	3509.561	47.177	51.971	49.574	22308.300	7.882	9.060	4076.775	12.987	12.942	5823.675	9900.450
5	1500.000	750.000	750.000	55.620	51.129	5751.956	55.316	47.177	51.247	38434.875	8.523	8.203	6151.875	13.645	13.316	9987.000	16138.875
6	2250.000	1500.000	750.000	66.006	60.813	6841.463	65.643	55.316	60.480	45359.625	10.213	9.368	7026.000	15.637	14.641	10980.750	18006.750
7	2750.000	2250.000	500.000	64.546	65.276	4895.700	64.642	65.643	65.143	32571.250	9.463	9.838	4919.000	14.679	15.158	7579.000	12498.000
8	3500.000	2750.000	750.000	75.563	70.055	7881.131	75.172	64.642	69.907	52430.250	9.692	9.578	7183.125	16.967	15.823	11867.250	19050.375
9	4500.000	3500.000	1000.000	76.329	75.946	11391.900	76.297	75.172	75.735	75734.500	9.931	9.812	9811.500	16.831	16.899	16899.000	26710.500
10	5250.000	4500.000	750.000	73.889	75.109	8449.763	74.012	76.297	75.155	56365.875	9.264	9.598	7198.125	16.562	16.697	12522.375	19720.500
11	6000.000	5250.000	750.000	77.827	75.858	8534.025	77.693	74.012	75.853	56889.375	10.296	9.780	7335.000	16.452	16.507	12380.250	19715.250
12	6750.000	6000.000	750.000	60.847	69.337	7800.413	61.416	77.693	69.555	52165.875	9.629	9.963	7471.875	13.825	15.139	11353.875	18825.750
13	7250.000	6750.000	500.000	58.955	59.901	4492.575	59.051	61.416	60.234	30116.750	9.506	9.568	4783.750	13.052	13.439	6719.250	11503.000
14	8000.000	7250.000	750.000	46.964	52.960	5957.944	47.378	59.051	53.215	39910.875	9.256	9.381	7035.750	12.636	12.844	9633.000	16668.750
15	8500.000	8000.000	500.000	76.226	61.595	4619.625	74.583	47.378	60.981	30490.250	10.588	9.922	4961.000	17.882	15.259	7629.500	12590.500
16	9000.000	8500.000	500.000	72.677	74.452	5583.863	72.825	74.583	73.704	36852.000	10.492	10.540	5270.000	16.805	17.344	8671.750	13941.750
17	10250.000	9000.000	1250.000	68.023	70.350	13190.625	68.104	72.825	70.465	88080.625	10.163	10.328	12909.375	16.491	16.648	20810.000	33719.375
18	11100.000	10250.000	850.000	51.269	59.646	7604.865	51.727	68.104	59.916	50928.175	8.608	9.386	7977.675	13.376	14.934	12693.475	20671.150
19	12100.000	11100.000	1000.000	55.160	53.215	7982.175	55.060	51.727	53.394	53393.500	9.250	8.929	8929.000	14.531	13.954	13953.500	22882.500
20	12500.000	12100.000	400.000	46.930	51.045	3062.700	47.503	55.060	51.282	20512.600	8.298	8.774	3509.600	11.966	13.249	5299.400	8809.000
21	13300.000	12500.000	800.000	81.004	63.967	7676.040	79.844	47.503	63.674	50938.800	11.558	9.928	7942.400	16.908	14.437	11549.600	19492.000
						127015.620				841638.950						Total	326589.975
E-26																	
1	0.000	-	0.000	23.493	0.000	0.000	44.983			0.000	7.310			11.548		0.000	
2	250.000	0.000	250.000	22.949	23.221	870.788	47.737	44.983	46.360	11590.000	8.119	7.715	1928.625	10.211	10.880	2719.875	4648.500
3	500.000	250.000	250.000	25.088	24.019	900.694	55.186	47.737	51.462	12865.375	8.141	8.130	2032.500	12.445	11.328	2832.000	4864.500
4	1500.000	500.000	1000.000	24.541	24.815	3722.175	51.926	55.186	53.556	53556.000	7.893	8.017	8017.000	12.102	12.274	12273.500	20290.500
						5493.656				78011.375						Total	29803.500
E-27																	
1	0.000	-	0.000	25.070	0.000	0.000	45.291	0.000	22.646	0.000	8.288		0.000	12.287		0.000	0.000
2	250.000	0.000	250.000	19.408	22.239	833.963	29.383	45.291	37.337	9334.250	4.905	6.597	1649.125	9.509	10.898	2724.500	4373.625
3	500.000	250.000	250.000	26.526	22.967	861.263	57.107	29.383	43.245	10811.250	8.902	6.904	1725.875	13.244	11.377	2844.125	4570.000
4	1000.000	500.000	500.000	27.082	26.804	2010.300	58.173	57.107	57.640	28820.000	9.832	9.367	4683.500	12.953	13.099	6549.250	11232.750

Sl.	Section	Previous	Grabbing (0.15m depth)				Filling Volume				Turfing						
No.	From	Section	Difference	Width	Average	Volume	Area	Previous	Average	Volume	Left Bank			Right Bank			Total
	Mtrs.	Mtrs.	Mtrs.	Mtrs.	Mtrs.	Cubic Metres	Sq. Mtrs	Area	Sq. Mtrs	Cubic Meters	Slope Length	Mean	Area	Slope Length	Mean	Area	Area
5	1250.000	1000.000	250.000	26.316	26.699	1001.213	53.303	58.173	55.738	13934.500	9.157	9.495	2373.625	12.782	12.868	3216.875	5590.500
6	1350.000	1250.000	100.000	24.411	25.364	380.453	42.490	53.303	47.897	4789.650	9.356	9.257	925.650	10.586	11.684	1168.400	2094.050
7	1750.000	1350.000	400.000	22.889	23.650	1419.000	38.865	42.490	40.678	16271.000	7.625	8.491	3396.200	10.614	10.600	4240.000	7636.200
8	2250.000	1750.000	500.000	24.650	23.770	1782.713	45.574	38.865	42.220	21109.750	8.370	7.998	3998.750	11.767	11.191	5595.250	9594.000
9	2750.000	2250.000	500.000	22.513	23.582	1768.613	39.800	45.574	42.687	21343.500	5.876	7.123	3561.500	11.866	11.817	5908.250	9469.750
10	3800.000	2750.000	1050.000	22.003	22.258	3505.635	37.227	39.800	38.514	40439.175	7.144	6.510	6835.500	10.133	11.000	11549.475	18384.975
						13563.150				166853.075						Total	72945.850
E-28																	
1	0.000	-	0.000	22.417	0.000	0.000	35.013	0.000	17.507	0.000	10.405			7.319			0.000
2	500.000	0.000	500.000	22.291	22.354	1676.550	38.337	35.013	36.675	18337.500	10.603	10.504	5252.000	6.968	7.144	3571.750	8823.750
3	1025.000	500.000	525.000	24.143	23.217	1828.339	47.567	38.337	42.952	22549.800	11.360	10.982	5765.288	8.235	7.602	3990.788	9756.075
4	1500.000	1025.000	475.000	25.061	24.602	1752.893	45.729	47.567	46.648	22157.800	12.397	11.879	5642.288	8.356	8.296	3940.363	9582.650
5	1900.000	1500.000	400.000	26.094	25.578	1534.650	50.954	45.729	48.342	19336.600	12.563	12.480	4992.000	9.141	8.749	3499.400	8491.400
6	2500.000	1900.000	600.000	24.289	25.192	2267.235	48.217	50.954	49.586	29751.300	12.163	12.363	7417.800	7.547	8.344	5006.400	12424.200
7	3200.000	2500.000	700.000	24.087	24.188	2539.740	44.117	48.217	46.167	32316.900	11.377	11.770	8239.000	8.155	7.851	5495.700	13734.700
8	4000.000	3200.000	800.000	21.250	22.669	2720.220	31.513	44.117	37.815	30252.000	9.653	10.515	8412.000	6.811	7.483	5986.400	14398.400
						14319.626				174701.900						Total	77211.175
E-29																	
1	0.000	-	0.000	15.973	0.000	0.000	14.973	0.000	7.490	0.000	4.318		0.000	6.442		0.000	0.000
2	250.000	225.000	250.000	20.608	18.291	685.894	26.468	14.973	20.720	5180.000	5.767	5.040	1260.000	9.961	8.200	2050.000	3310.000
3	750.000	725.000	500.000	17.655	19.132	1434.863	15.742	26.468	21.110	10555.000	5.905	5.840	2920.000	6.719	8.340	4170.000	7090.000
4	1250.000	1225.000	500.000	21.166	19.411	1455.788	25.409	15.742	20.580	10290.000	7.207	6.560	3280.000	9.191	7.960	3980.000	7260.000
5	1500.000	1475.000	250.000	22.543	21.855	819.544	32.683	25.409	29.050	7262.500	7.268	7.240	1810.000	10.585	9.890	2472.500	4282.500
6	2000.000	1975.000	500.000	23.509	23.026	1726.950	36.073	32.683	34.380	17190.000	8.124	7.700	3850.000	10.797	10.690	5345.000	9195.000
7	2750.000	2725.000	750.000	17.195	20.352	2289.600	14.821	36.073	25.450	19087.500	3.887	6.010	4507.500	8.136	9.470	7102.500	11610.000
8	3000.000	2975.000	250.000	20.813	19.004	712.650	32.237	14.821	23.530	5882.500	5.404	4.650	1162.500	10.520	9.330	2332.500	3495.000
9	3250.000	3225.000	250.000	20.918	20.866	782.456	24.294	32.237	28.270	7067.500	6.401	5.900	1475.000	9.690	10.110	2527.500	4002.500
10	3750.000	3725.000	500.000	22.040	21.479	1610.925	30.777	24.294	27.540	13770.000	7.509	6.960	3480.000	9.828	9.760	4880.000	8360.000
11	4250.000	4225.000	500.000	28.460	25.250	1893.750	61.687	30.777	46.230	23115.000	10.950	9.230	4615.000	13.351	11.590	5795.000	10410.000
12	4750.000	4725.000	500.000	21.652	25.056	1879.200	29.820	61.687	45.750	22875.000	6.752	8.850	4425.000	10.133	11.740	5870.000	10295.000
13	5250.000	5225.000	500.000	26.237	23.945	1795.838	41.747	29.820	35.780	17890.000	9.095	7.920	3960.000	12.757	11.450	5725.000	9685.000
14	5750.000	5725.000	500.000	21.407	23.822	1786.650	27.660	41.747	34.700	17350.000	8.139	8.620	4310.000	8.567	10.660	5330.000	9640.000
15	6250.000	6225.000	500.000	20.582	20.995	1574.588	31.642	27.660	29.650	14825.000	6.687	7.410	3705.000	9.066	8.820	4410.000	8115.000
16	6750.000	6725.000	500.000	26.745	23.664	1774.763	57.344	31.642	44.490	22245.000	8.766	7.730	3865.000	13.602	11.330	5665.000	9530.000
17	7250.000	7225.000	500.000	28.906	27.826	2086.913	67.371	57.344	62.360	31180.000	9.616	9.190	4595.000	15.079	14.340	7170.000	11765.000
18	7500.000	7475.000	250.000	25.568	27.237	1021.388	54.741	67.371	61.060	15265.000	8.354	8.990	2247.500	12.750	13.910	3477.500	5725.000
19	8000.000	7975.000	500.000	30.416	27.992	2099.400	65.810	54.741	60.280	30140.000	8.461	8.410	4205.000	17.759	15.250	7625.000	11830.000
20	8250.000	8225.000	250.000	19.509	24.963	936.094	19.815	65.810	42.810	10702.500	5.332	6.900	1725.000	9.213	13.490	3372.500	5097.500
						28367.25				301872.50						Total	150697.50
E-30																	
1	0.000	-	0.000	19.260	0.000	0.000	18.669	0.000	9.335	0.000	5.136		0.000	9.135		0.000	0.000
2	500.000	0.000	500.000	20.879	20.070	1505.213	23.744	18.669	21.207	10603.250	6.439	5.790	2895.000	9.613	9.370	4685.000	7580.000
3	750.000	500.000	250.000	28.646	24.763	928.594	50.457	23.744	37.101	9275.130	8.239	7.340	1835.000	16.103	12.860	3215.000	5050.000
4	1500.000	750.000	750.000	25.458	27.052	3043.350	42.484	50.457	46.471	34852.880	8.499	8.370	6277.500	12.497	14.300	10725.000	17002.500
5	2000.000	1500.000	500.000	19.852	22.655	1699.125	25.263	42.484	33.874	16936.750	4.937	6.720	3360.000	9.947	11.220	5610.000	8970.000
6	2750.000	2000.000	750.000	19.968	19.910	2239.875	24.182	25.263	24.723	18541.880	6.265	5.600	4200.000	8.817	9.380	7035.000	11235.000
7	3000.000	2750.000	250.000	23.237	21.603	810.094	37.160	24.182	30.671	7667.750	6.790	6.530	1632.500	11.768	10.290	2572.500	4205.000
8	3750.000	3000.000	750.000	22.042	22.640	2546.944	29.366	37.160	33.263	24947.250	6.933	6.860	5145.000	10.373	11.070	8302.500	13447.500
9	4500.000	3750.000	750.000	27.962	25.002	2812.725	47.650	29.366	38.508	28881.000	7.206	7.070	5302.500	16.356	13.360	10020.000	15322.500
10	4750.000	4500.000	250.000	26.257	27.110	1016.606	46.320	47.650	46.985	11746.250	9.227	8.220	2055.000	12.653	14.500	3625.000	5680.000
11	5250.000	4750.000	500.000	18.567	22.412	1680.900	18.211	46.320	32.266	16132.750	4.673	6.950	3475.000	8.841	10.750	5375.000	8850.000

Sl.	Section	Previous	Grabbing (0.15m depth)				Filling Volume				Turfing						
No.	From	Section	Difference	Width	Average	Volume	Area	Previous	Average	Volume	Left Bank			Right Bank			Total
	Mtrs.	Mtrs.	Mtrs.	Mtrs.	Mtrs.	Cubic Metres	Sq. Mtrs	Area	Sq. Mtrs	Cubic Meters	Slope Length	Mean	Area	Slope Length	Mean	Area	Area
12	5500.000	5250.000	250.000	20.112	19.340	725.231	21.987	18.211	20.099	5024.750	5.960	5.320	1330.000	9.256	9.050	2262.500	3592.500
13	6500.000	5500.000	1000.000	27.801	23.957	3593.475	43.153	21.987	32.570	32570.000	7.870	6.920	6920.000	15.561	12.410	12410.000	19330.000
14	7000.000	6500.000	500.000	22.326	25.064	1879.763	22.279	43.153	32.716	16358.000	9.251	8.560	4280.000	8.488	12.020	6010.000	10290.000
15	8250.000	7000.000	1250.000	24.319	23.323	4372.969	32.732	22.279	27.506	34381.880	7.708	8.480	10600.000	12.043	10.270	12837.500	23437.500
16	8500.000	8250.000	250.000	24.447	24.383	914.363	37.506	32.732	35.119	8779.750	8.161	7.930	1982.500	11.751	11.900	2975.000	4957.500
17	9000.000	8500.000	500.000	26.025	25.236	1892.700	47.296	37.506	42.401	21200.500	8.344	8.250	4125.000	13.241	12.500	6250.000	10375.000
18	9750.000	9000.000	750.000	27.761	26.893	3025.463	50.047	47.296	48.672	36503.630	8.268	8.310	6232.500	15.086	14.160	10620.000	16852.500
19	11330.000	9750.000	1580.000	26.093	26.927	6381.699	41.964	50.047	46.006	72688.690	7.542	7.910	12497.800	14.069	14.580	23036.400	35534.200
						41069.090				407092.090						Total	221711.700
E-31																	
1	0.000			19.727			31.788				8.947			5.857			
2	250.000	0.000	250.000	18.996	19.362	726.056	24.781	31.788	28.285	7071.125	8.150	8.549	2137.125	5.885	5.871	1467.750	3604.875
3	500.000	250.000	250.000	21.368	20.182	756.825	31.472	24.781	28.127	7031.625	9.026	8.588	2147.000	9.331	7.608	1902.000	4049.000
4	1000.000	500.000	500.000	22.987	22.178	1663.313	40.782	31.472	36.127	18063.500	0.000	4.513	2256.500	0.000	4.666	2332.750	4589.250
5	1250.000	1000.000	250.000	22.352	22.670	850.106	35.855	40.782	38.319	9579.625	9.633	4.817	1204.125	11.910	5.955	1488.750	2692.875
6	1350.000	1250.000	100.000	20.089	21.221	318.308	29.467	35.855	32.661	3266.100	11.596	10.615	1061.450	11.693	11.802	1180.150	2241.600
7	1750.000	1350.000	400.000	25.475	22.782	1366.920	48.907	29.467	39.187	15674.800	10.788	11.192	4476.800	7.420	9.557	3822.600	8299.400
8	2250.000	1750.000	500.000	24.645	25.060	1879.500	41.851	48.907	45.379	22689.500	10.569	10.679	5339.250	7.577	7.499	3749.250	9088.500
9	2750.000	2250.000	500.000	26.605	25.625	1921.883	60.028	41.851	50.940	25469.750	12.307	11.438	5719.000	8.260	7.919	3959.250	9678.250
10	3500.000	2750.000	750.000	25.788	26.197	2947.118	53.915	60.028	56.972	42728.625	13.920	13.114	9835.125	9.442	8.851	6638.250	16473.375
11	4250.000	3500.000	750.000	24.748	25.268	2842.650	46.410	53.915	50.163	37621.875	12.385	13.153	9864.375	8.951	9.197	6897.375	16761.750
12	4800.000	4250.000	550.000	25.289	25.019	2064.026	47.298	46.410	46.854	25769.700	11.449	11.917	6554.350	9.086	9.019	4960.175	11514.525
13	5500.000	4800.000	700.000	31.315	28.302	2971.710	69.060	47.298	58.179	40725.300	12.032	11.741	8218.350	8.770	8.928	6249.600	14467.950
14	5900.000	5500.000	400.000	26.533	28.924	1735.452	54.584	69.060	61.822	24728.800	13.976	13.004	5201.600	10.555	9.663	3865.000	9066.600
15	6150.000	5900.000	250.000	25.007	25.770	966.383	44.788	54.584	49.686	12421.500	15.050	14.513	3628.250	11.819	11.187	2796.750	6425.000
16	6750.000	6150.000	600.000	27.483	26.245	2362.050	51.472	44.788	48.130	28878.000	12.316	13.683	8209.800	9.530	10.675	6404.700	14614.500
17	7125.000	6750.000	375.000	30.027	28.755	1617.474	67.366	51.472	59.419	22282.125	12.360	12.338	4626.750	9.319	9.425	3534.188	8160.938
18	7200.000	7125.000	75.000	30.654	30.341	341.332	67.175	67.366	67.271	5045.288	12.636	12.498	937.350	9.374	9.347	700.988	1638.338
						27331.104				349047.238						Total	143366.725
E-39																	
1	0.000	-		20.437			28.034				8.076			7.574			
2	500.000	0.000	500.000	22.422	21.430	1607.213	37.091	28.034	32.563	16281.250	10.422	9.249	4624.500	7.306	7.440	3720.000	8344.500
3	1600.000	500.000	1100.000	25.603	24.013	3962.063	40.197	37.091	38.644	42508.400	11.986	11.204	12324.400	9.204	8.255	9080.500	21404.900
4	2250.000	1600.000	650.000	25.173	25.388	2475.330	46.409	40.197	43.303	28146.950	11.740	11.863	7710.950	8.985	9.095	5911.425	13622.375
5	2500.000	2250.000	250.000	32.297	28.735	1077.563	79.099	46.409	62.754	15688.500	16.520	14.130	3532.500	11.879	10.432	2608.000	6140.500
6	2700.000	2500.000	200.000	28.079	30.188	905.640	52.807	79.099	65.953	13190.600	12.895	14.708	2941.500	11.008	11.444	2288.700	5230.200
						10027.808				115815.700						Total	54742.475

Sl.	Section	Previous	Grabbing (0.15m depth)				Filling Volume				Turfing						
No.	From	Section	Difference	Width	Average	Volume	Area	Previous	Average	Volume	Left Bank			Right Bank			Total
	Mtrs.	Mtrs.	Mtrs.	Mtrs.	Mtrs.	Cubic Metres	Sq. Mtrs	Area	Sq. Mtrs	Cubic Meters	Slope Length	Mean	Area	Slope Length	Mean	Area	Area
E-40																	
1	0.000	-		25.122			47.117				12.537			8.082			
2	300.000	0.000	300.000	30.989	28.056	1262.498	94.326	47.117	70.722	21216.450	16.121	14.329	4298.700	10.840	9.461	2838.300	7137.000
3	700.000	300.000	400.000	20.711	25.850	1551.000	40.501	94.326	67.414	26965.400	9.040	12.581	5032.200	6.859	8.850	3539.800	8572.000
4	1050.000	700.000	350.000	27.140	23.926	1256.089	71.924	40.501	56.213	19674.375	13.064	11.052	3868.200	9.778	8.319	2911.475	6779.675
5	1602.000	1050.000	552.000	20.222	23.681	1960.787	37.742	71.924	54.833	30267.816	9.164	11.114	6134.928	6.180	7.979	4404.408	10539.336
6	2100.000	1602.000	498.000	15.162	17.692	1321.592	19.219	37.742	28.481	14183.289	5.749	7.457	3713.337	4.145	5.163	2570.925	6284.262
						7351.965				112307.330						Total	39312.273
E-41																	
1	0.000			20.450			30.845				5.942			9.629			
2	250.000	0.000	250.000	24.625	22.538	845.156	53.870	30.845	42.358	10589.375	6.998	6.470	1617.500	6.727	8.178	2044.500	3662.000
3	750.000	250.000	500.000	21.304	22.965	1722.338	41.446	53.870	47.658	23829.000	7.193	7.096	3547.750	6.204	6.466	3232.750	6780.500
4	1250.000	750.000	500.000	23.811	22.558	1691.813	54.621	41.446	48.034	24016.750	9.345	8.269	4134.500	11.956	9.080	4540.000	8674.500
5	1500.000	1250.000	250.000	24.620	24.216	908.081	59.752	54.621	57.187	14296.625	6.625	7.985	1996.250	10.282	11.119	2779.750	4776.000
6	2000.000	1500.000	500.000	24.541	24.581	1843.538	60.744	59.752	60.248	30124.000	6.673	6.649	3324.500	10.366	10.324	5162.000	8486.500
7	2750.000	2000.000	750.000	20.361	22.451	2525.738	37.436	60.744	49.090	36817.500	6.723	6.698	5023.500	10.453	10.410	7807.125	12830.625
8	3000.000	2750.000	250.000	23.916	22.139	830.194	52.511	37.436	44.974	11243.375	7.224	6.974	1743.375	11.301	10.877	2719.250	4462.625
9	3250.000	3000.000	250.000	20.289	22.103	828.844	39.330	52.511	45.921	11480.125	7.829	7.527	1881.625	11.827	11.564	2891.000	4772.625
10	3750.000	3250.000	500.000	22.461	21.375	1603.125	50.418	39.330	44.874	22437.000	11.921	9.875	4937.500	11.511	11.669	5834.500	10772.000
11	4250.000	3750.000	500.000	28.510	25.486	1911.413	82.958	50.418	66.688	33344.000	9.881	10.901	5450.500	10.253	10.882	5441.000	10891.500
12	4750.000	4250.000	500.000	19.577	24.044	1803.263	35.431	82.958	59.195	29597.250	7.203	8.542	4271.000	10.263	10.258	5129.000	9400.000
13	5250.000	4750.000	500.000	22.122	20.850	1563.713	48.838	35.431	42.135	21067.250	6.507	6.855	3427.500	9.694	9.979	4989.250	8416.750
14	5750.000	5250.000	500.000	23.692	22.907	1718.025	63.549	48.838	56.194	28096.750	8.089	7.298	3649.000	12.047	10.871	5435.250	9084.250
15	6250.000	5750.000	500.000	22.147	22.920	1718.963	48.737	63.549	56.143	28071.500	8.868	8.479	4239.250	13.338	12.693	6346.250	10585.500
16	6750.000	6250.000	500.000	20.529	21.338	1600.350	41.540	48.737	45.139	22569.250	5.783	7.326	3662.750	9.496	11.417	5708.500	9371.250
17	7250.000	6750.000	500.000	21.974	21.252	1593.863	43.431	41.540	42.486	21242.750	7.097	6.440	3220.000	11.166	10.331	5165.500	8385.500
18	7500.000	7250.000	250.000	20.647	21.311	799.144	45.848	43.431	44.640	11159.875	7.825	7.461	1865.250	12.512	11.839	2959.750	4825.000
19	8000.000	7500.000	500.000	22.608	21.628	1622.063	47.682	45.848	46.765	23382.500	7.150	7.488	3743.750	11.956	12.234	6117.000	9860.750
20	8500.000	8000.000	500.000	12.887	17.748	1331.063	12.804	47.682	30.243	15121.500	6.367	6.759	3379.250	10.004	10.980	5490.000	8869.250
						28460.681				418486.375						Total	154907.125

Executive Engineer
Dibrugarh WR Division
Dibrugarh

1. Embankment Works Proforma-A

A. Main River

Sl No.	Name of River/Stream	Location	Raising & Strengthening of embankment			Newly Proposed Embankment			Final Total
			Left Bank	Right Bank	Total	Lef Bank	Right Bank	Total	
E-09	Buridehing	DEHING MARGINAL BUND FROM KOTOHA TO BHOGAMUR		8400	8400				
E-10	Buridehing	EXTENSION OF DEHING BUND FROM BHOGAMUR TO SESSAMUKH (Ch. 0 to 3.2 Km & 15.2 Km to 16.5 Km)		4500	4500				
E-11	Buridehing	DEHING BUND OLD A.T. ROAD FROM SESSUGHAT TO JAGUNGAON	5100		5100				
E-12	Buridehing	DEHING BUND 1ST SECTION FROM AGHUNIBARI TO SESSUGHAT(UNDER DIBRUGARH EAST WR SUB-DIVN)	9100		9100				
E-14	Buridehing	EXTENSION OF TENGAKHAT BUND UPTO JOKAI R.F.		20200	20200				
E-15	Buridehing	EXTENSION OF TENGAKHAT BUND FROM JOKAI R.F. TO A.T. ROAD		13500	13500				
E-16	Buridehing	EXTENSION OF SASSONI TINGKHONG BUND PH-I	12000		12000				
E-17	Buridehing	EXTENSION OF SASSONI TINGKHONG BUND PH-II	5500		5500				
E-19	Buridehing	DEHING BUND 1ST SECTION FROM AGHUNIBARI TO SESSUGHAT (UNDER DIBRUGARH WEST WR SUB-DIVN)	25200		25200				
E-22	Buridehing	TIE-BUND OF GELA DESAM	7200		7200				
E-25	Buridehing	TRIBUTARY DYKE FROM BHEKULAJAN TO TIPLING		13300	13300				
E-26	Buridehing	CONSTRUCTION OF T/DYKE ALONG THE R/B OF BURIDEHING RIVER FROM DEOCHALI TO TIPLING GHAT FROM NOWJAN TO RLY LINE - PH-III		1500	1500				
E-29	Buridehing	CONSTRUCTION OF AN EMBANKMENT ALONG THE R/B OF BURIDEHING RIVER FROM DEOCHALI HILL TO TIPLING GHAT PH-I (FAKIAL GRAZING)		8250	8250				
E-30	Buridehing	CONSTRUCTION OF AN EMBANKMENT ALONG THE R/B OF BURIDEHING RIVER FROM DEOCHALI HILL TO TIPLING GHAT PH-II (FAKIAL GRAZING)		11330	11330				
E-31	Buridehing	T/DYKE ALONG THE L/B OF BURIDEHING RIVER FROM JOYPUR TO NAHARKATIA	7200		7200				

Sl No.	Name of River/Stream	Location	Raising & Strengthening of embankment			Newly Proposed Embankment			Final Total
			Left Bank	Right Bank	Total	Lef Bank	Right Bank	Total	
E-39	Buridehing	T/DYKE ALONG THE L/B OF BURIDEHING RIVER FROM CHIPPIBASTI TO MOLONG GAON	2700		2700				
E-40	Buridehing	EXTENSION OF T/DYKE ALONG THE L/B OF BURIDEHING RIVER FROM CHIPPIBASTI TO MOLONG GAON				2100		2100	
E-41	Buridehing	PROPOSED EMBANKMENT AT MAICHANG PATHAR					8500	8500	
Total			74000	80980	154980	2100	8500	10600	165580

B. Tributories

Sl No.	Name of River/Stream	Location	Raising & Strengthening of embankment			Newly Proposed Embankment			Final Total
			Left Bank	Right Bank	Total	Lef Bank	Right Bank	Total	
E-23	Tingrai	RECLAIMATION OF LOW-LYING AREA NEAR TINGRAIMUKH IN KHEREMIA MOUZA (R/B OF AMILGURI T.E. TO TINGRAIMUKH)		5400	5400				
E-24	Tingrai	TINGRAI L/B DYKE FROM BALIJAN TO TINGRAIMUKH	4700		4700				
E-27	Tipling	CONSTRUCTION OF AN EMBANKMENT ALONG THE TIPLING BRIDGE TO TIPLING T.E.		3800	3800				
E-28	Tipling	CONSTRUCTION OF AN EMBANKMENT ALONG THE L/B OF TIPLING RIVER	4000		4000				
			8700	9200	17900	0	0	0	17900

Total Length of Earth Work 183480 m (A+B)

183.48 Km

Executive Engineer
Dibrugarh WR Division
Dibrugarh

Summery of Quantity Statement-S

Name of the Scheme: Integrated Water Resources Management of Buridehing Basin

Code	Protection Reaches	Distance from Divisional Store at Dibrugarh	Reach Length (m)	Geo Bags Supply	Carriage of Geo Bags	Total bags in Apron	Geo bags at toe Key	Geo Sheet Supply	Geo Sheet laying	Carriage of Geo Sheet	Supply of Sewing Thread	Supply WN Box	Trimming	Earthwork in Exc.	Supply of sand = Sl 7 + (Sl 8) x .084	CC Block in Revetment
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
AE-1	MANMOW PATHAR	125	800	107090	107090	94286	12804	30008	27280	30008	1177990.00	1067	9600	738.00	8995.56	3864
AE-2	MOULANG GAON	120	1000	133853	133853	117857	15996	37510	34100	37510	1472383.00	1333	12000	922.50	11243.65	4830
AE-3	BORFAKIAL-A	110	600	80314	80314	70714	9600	21846	19860	21846	883454.00	800	7200	553.50	6746.38	2718
AE-4	BORFAKIAL-B	111	1000	133853	133853	117857	15996	36410	33100	36410	1472383.00	1333	12000	922.50	11243.65	4530
AE-5	BANSBARI	115	1000	133853	133853	117857	15996	36410	33100	36410	1472383.00	1333	12000	922.50	11243.65	4530
AE-6	TANTIPATHAR MANIPURI BAST	61	300	40157	40157	35357	4800	10923	9930	10923	441727.00	400	3600	276.75	3373.19	1359
AE-7	TANTIPATHAR MANIPURI BAST	60	200	26775	26775	23571	3204	7282	6620	7282	294525.00	267	2400	184.50	2249.1	906
AE-8	NOCTE GAON	60	700	93696	93696	82500	11196	25487	23170	25487	1030656.00	933	8400	645.75	7870.46	3171
AE-9	KONWARGAON A	59	600	80314	80314	70714	9600	21846	19860	21846	883454.00	800	7200	553.50	6746.38	2718
AE-10	KONWARGAON B	59	500	66933	66933	58929	8004	18205	16550	18205	736263.00	667	6000	461.25	5622.37	2265
AE-11	UTTAMMATI	55	650	87011	87011	76607	10404	23666.5	21515	23667	957121.00	867	7800	599.63	7308.92	2944.5
AE-12	BAMUNGAON-1	52	280	37476	37476	33000	4476	10194.8	9268	10195	412236.00	373	3360	258.30	3147.98	1268.4
AE-13	BAMUNGAON-2	53	340	45507	45507	40071	5436	12379.4	11254	12379	500577.00	453	4080	313.65	3822.59	1540.2
AE-14	JAGUNGAON	54	600	80314	80314	70714	9600	21186	19260	21186	883454.00	800	7200	553.50	6746.38	2538
AE-15	NAGAON 1	51	220	29445	29445	25929	3516	7768.2	7062	7768	323895.00	293	2640	202.95	2473.38	930.6
AE-16	NAGAON 2	50	595	79641	79641	70125	9516	21009.45	19099.5	21009	876051.00	793	7140	548.89	6689.84	2517
AE-17	BORDOLOICHUK	47	700	93696	93696	82500	11196	24717	22470	24717	1030656.00	933	8400	645.75	7870.46	2961
AE-18	MOHMARI	45	500	66933	66933	58929	8004	17655	16050	17655	736263.00	667	6000	461.25	5622.37	2115
AE-19	AMGURI	41	500	93696	93696	82500	11196	24717	22470	24717	1030656.00	933	8400	645.75	7870.46	2961
AE-20	PANCHUTI	41	650	87011	87011	76607	10404	22951.5	20865	22952	957121.00	867	7800	599.63	7308.92	2749.5
AE-21	TINGRAI NEPALIGAON A	36	450	60236	60236	53036	7200	15889.5	14445	15890	662596.00	600	5400	415.13	5059.82	1903.5
AE-22	TINGRAI NEPALIGAON B	37	90	12047	12047	10607	1440	3177.9	2889	3178	132517.00	120	1080	83.03	1011.95	380.7
AE-23	TINGRAI NEPALIGAON C	38	410	54885	54885	48321	6564	14477.1	13161	14477	603735.00	547	4920	378.23	4610.34	1734.3
AE-24	KAIBARTAGAON	75	400	53539	53539	47143	6396	14124	12840	14124	588929.00	533	4800	369.00	4497.28	1692
AE-25	URIAMGURI	76	700	93696	93696	82500	11196	24717	22470	24717	1030656.00	933	8400	645.75	7870.46	2961
AE-26	BAMUNIBEEL	77	300	40157	40157	35357	4800	10593	9630	10593	441727.00	400	3600	276.75	3373.19	1269
AE-27	KOLAGORA	81	400	53539	53539	47143	6396	14124	12840	14124	588929.00	533	4800	369.00	4497.28	1692
AE-28	SESSA NEPALI	45	600	80314	80314	70714	9600	21186	19260	21186	883454.00	800	7200	553.50	6746.38	2538
AE-29	DEHINGHOLLA	45	1000	133853	133853	117857	15996	35310	32100	35310	1472383.00	1333	12000	922.50	11243.65	4230
AE-30	AGHUNIBARI	42	300	40157	40157	35357	4800	10593	9630	10593	441727.00	400	3600	276.75	3373.19	1269
AE-31	SOLOGURI	45	500	66933	66933	58929	8004	17655	16050	17655	736263.00	667	6000	461.25	5622.37	2115
AE-32	TELPANI BONGAON	46	500	66933	66933	58929	8004	17655	16050	17655	736263.00	667	6000	461.25	5622.37	2115
AE-33	KORAIGURI	45	500	66933	66933	58929	8004	17655	16050	17655	736263.00	667	6000	461.25	5622.37	2115
AE-34	SINGIMARI	40	500	66933	66933	58929	8004	17655	16050	17655	736263.00	667	6000	461.25	5622.37	2115
AE-35	BHURBHURI-1	29	2150	287797	287797	253393	34404	75916.5	69015	75917	3165767.00	2867	25800	1983.38	24174.95	9094.5
AE-36	BHURBHURI-2	26	515	68940	68940	60696	8244	18184.65	16531.5	18185	758340.00	687	6180	475.09	5790.96	2178.6
AE-37	BORBEEL A	29	525	70275	70275	61875	8400	18537.75	16852.5	18538	773025.00	700	6300	484.31	5903.1	2220.9
AE-38	BORBEEL B	30	400	53539	53539	47143	6396	14124	12840	14124	588929.00	533	4800	369.00	4497.28	1692
AE-39	CHARAIHABI KHAMTIGHAT	46	880	117790	117790	103714	14076	31072.8	28248	31073	1295690.00	1173	10560	811.80	9894.36	3722.4
AE-40	KOLOLUA DEORI GAON	46	1125	150589	150589	132589	18000	39723.75	36112.5	39724	1656479.00	1500	13500	1037.81	12649.48	4758.9
AE-41	NATUNBOLAI	30	600	80314	80314	70714	9600	21186	19260	21186	883454.00	800	7200	553.50	6746.38	2538

Code	Protection Reaches	Distance from Divisional Store at Dibrugarh	Reach Length (m)	Geo Bags Supply	Carriage of Geo Bags	Total bags in Apron	Geo bags at toe Key	Geo Sheet Supply	Geo Sheet laying	Carriage of Geo Sheet	Supply of Sewing Thread	Supply WN Box	Trimming	Earthwork in Exc.	Supply of sand = Sl 7 + (Sl 8) x .084	CC Block in Revetment
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
AE-42	KOTOHA	28	675	90354	90354	79554	10800	23834.25	21667.5	23834	993894.00	900	8100	622.69	7589.74	2855.4
AE-43	BHOGAMUR A	30	600	80314	80314	70714	9600	21186	19260	21186	883454.00	800	7200	553.50	6746.38	2538
AE-44	BHOGAMUR B	30	300	40157	40157	35357	4800	10593	9630	10593	441727.00	400	3600	276.75	3373.19	1269
AE-45	PANIMIRI	33	450	60236	60236	53036	7200	15889.5	14445	15890	662596.00	600	5400	415.13	5059.82	1903.5
AE-46	JHANJIMUKH GAON	45	500	66933	66933	58929	8004	17655	16050	17655	736263.00	667	6000	461.25	5622.37	2115
AE-47	SESSUGHAT A	45	300	40157	40157	35357	4800	10263	9330	10263	441727.00	400	3600	276.75	3373.19	1179
AE-48	SESSUGHAT B	39	300	40157	40157	35357	4800	10263	9330	10263	441727.00	400	3600	276.75	3373.19	1179
AE-49	CHARAIBAHI	38	500	66933	66933	58929	8004	17105	15550	17105	736263.00	667	6000	461.25	5622.37	1965
AE-50	ITAKHULI	36	700	93696	93696	82500	11196	23947	21770	23947	1030656.00	933	8400	645.75	7870.46	2751
AE-51	THANGAON	32	700	93696	93696	82500	11196	23947	21770	23947	1030656.00	933	8400	645.75	7870.46	2751
Total				**3989600**	**3989600**	**3512732**	**476868**	**1060412**	**964010.5**	**1060411.6**	**43885600**	**39739**	**357660**	**27495.15**	**335126.39**	**128256.9**

Executive Engineer
Dibrugarh Water Resources Division
Dibrugarh

STATEMENT-III (C)

Name of the Scheme: Integrated Water Resources Management of Buridehing Basin

Statement of quantities for protection reach having CC block as Revetment

Sl. No.	Reach	Reach Length (m)	Avg. Slope Length (m)	Geobags in Apron (16.5m x 0.60m)/.084 (Nos.)	Geobags in Toe-Key (1.50m x 0.9m) (Nos.)	Surface Area for CC Block for slope pitching 0.3m x 0.30m x 0.3m (Reach Length x Avg. Slope Length) (SqM)	Surface Area for CC Block for Anchorage 0.3m x 0.30m x 0.3m (Reach Length x 2.1M) (SqM)	Qty Of CC Block @ 0.3m thick in Cum	Total Geobags (Nos.)	PVC coated W.N.Cages at Toe key (Nos.)	Geo-textile filter mattress From Revetment to apron + (2.1M anchorage) & 10% for laping. (SqM)	Geo-textile filter mattress adding 10% for laping. (SqM)	Earthwork in bank trimming (CuM)	Earthwork in Excavation for top Key and Bottom Key (CuM)
AE-1	MANMOW PATH	800	14	94286	12804	11200	1680	3864	107090	1067	27280	30008	9600	738.00
AE-2	MOULANG GAON	1000	14	117857	15996	14000	2100	4830	133853	1333	34100	37510	12000	922.50
AE-3	BORFAKIAL-A	600	13	70714	9600	7800	1260	2718	80314	800	19860	21846	7200	553.50
AE-4	BORFAKIAL-B	1000	13	117857	15996	13000	2100	4530	133853	1333	33100	36410	12000	922.50
AE-5	BANSBARI	1000	13	117857	15996	13000	2100	4530	133853	1333	33100	36410	12000	922.50
AE-6	TATIPATHAR MA	300	13	35357	4800	3900	630	1359	40157	400	9930	10923	3600	276.75
AE-7	TATIPATHAR MA	200	13	23571	3204	2600	420	906	26775	267	6620	7282	2400	184.50
AE-8	NOCTE GAON	700	13	82500	11196	9100	1470	3171	93696	933	23170	25487	8400	645.75
AE-9	KONWARGAON-	600	13	70714	9600	7800	1260	2718	80314	800	19860	21846	7200	553.50
AE-10	KONWARGAON-	500	13	58929	8004	6500	1050	2265	66933	667	16550	18205	6000	461.25
AE-11	UTTAMMATI	650	13	76607	10404	8450	1365	2944.5	87011	867	21515	23666.5	7800	599.63
AE-12	BAMUNGAON-A	280	13	33000	4476	3640	588	1268.4	37476	373	9268	10194.8	3360	258.30
AE-13	BAMUNGAON-B	340	13	40071	5436	4420	714	1540.2	45507	453	11254	12379.4	4080	313.65
AE-14	JAGUNGAON	600	12	70714	9600	7200	1260	2538	80314	800	19260	21186	7200	553.50
AE-15	NAGAON-A	220	12	25929	3516	2640	462	930.6	29445	293	7062	7768.2	2640	202.95
AE-16	NAGAON-B	595	12	70125	9516	7140	1250	2517	79641	793	19099.5	21009.45	7140	548.89
AE-17	BORDOLOICHUK	700	12	82500	11196	8400	1470	2961	93696	933	22470	24717	8400	645.75
AE-18	MOHMARI	500	12	58929	8004	6000	1050	2115	66933	667	16050	17655	6000	461.25
AE-19	AMGURI	700	12	82500	11196	8400	1470	2961	93696	933	22470	24717	8400	645.75
AE-20	PANCHUTI	650	12	76607	10404	7800	1365	2749.5	87011	867	20865	22951.5	7800	599.63
AE-21	TINGRAI NEPALI	450	12	53036	7200	5400	945	1903.5	60236	600	14445	15889.5	5400	415.13
AE-22	TINGRAI NEPALI	90	12	10607	1440	1080	189	380.7	12047	120	2889	3177.9	1080	83.03
AE-23	TINGRAI NEPALI	410	12	48321	6564	4920	861	1734.3	54885	547	13161	14477.1	4920	378.23
AE-24	KAIBARTAGAON	400	12	47143	6396	4800	840	1692	53539	533	12840	14124	4800	369.00
AE-25	URIAMGURI	700	12	82500	11196	8400	1470	2961	93696	933	22470	24717	8400	645.75
AE-26	BAMUNIBEEL	300	12	35357	4800	3600	630	1269	40157	400	9630	10593	3600	276.75
AE-27	KOLAGORA	400	12	47143	6396	4800	840	1692	53539	533	12840	14124	4800	369.00
AE-28	SESSA NEPAL1	600	12	70714	9600	7200	1260	2538	80314	800	19260	21186	7200	553.50
AE-29	DEHINGHOLLA	1000	12	117857	15996	12000	2100	4230	133853	1333	32100	35310	12000	922.50
AE-30	AGHUNIBARI	300	12	35357	4800	3600	630	1269	40157	400	9630	10593	3600	276.75
AE-31	SOLOGURI	500	12	58929	8004	6000	1050	2115	66933	667	16050	17655	6000	461.25
AE-32	TELPANI BONGA	500	12	58929	8004	6000	1050	2115	66933	667	16050	17655	6000	461.25
AE-33	KORAIGURI	500	12	58929	8004	6000	1050	2115	66933	667	16050	17655	6000	461.25
AE-34	SINGIMARI	500	12	58929	8004	6000	1050	2115	66933	667	16050	17655	6000	461.25
AE-35	BHURBHURI-1	2150	12	253393	34404	25800	4515	9094.5	287797	2867	69015	75916.5	25800	1983.38

Sl. No.	Reach	Reach Length (m)	Avg. Slope Length (m)	Geobags in Apron (16.5m x 0.60m)/.084 (Nos.)	Geobags in Toe-Key (1.50m x 0.9m) (Nos.)	Surface Area for CC Block for slope pitching 0.3m x 0.30m x 0.3m (Reach Length x Avg. Slope Length) (SqM)	Surface Area for CC Block for Anchorage 0.3m x 0.30m x 0.3m (Reach Length x 2.1M) (SqM)	Qty Of CC Block @ 0.3m thick in Cum	Total Geobags (Nos.)	PVC coated W.N.Cages at Toe key (Nos.)	Geo-textile filter mattress From Revetment to apron + (2.1M anchorage) & 10% for laping. (SqM)	Geo-textile filter mattress adding 10% for laping. (SqM)	Earthwork in bank trimming (CuM)	Earthwork in Excavation for top Key and Bottom Key (CuM)
AE-36	BHURBHURI-2	515	12	60696	8244	6180	1082	2178.6	68940	687	16531.5	18184.65	6180	475.09
AE-37	BORBEEL-A	525	12	61875	8400	6300	1103	2220.9	70275	700	16852.5	18537.75	6300	484.31
AE-38	BORBEEL-B	400	12	47143	6396	4800	840	1692	53539	533	12840	14124	4800	369.00
AE-39	CHARAIHABI KH	880	12	103714	14076	10560	1848	3722.4	117790	1173	28248	31072.8	10560	811.80
AE-40	KOLOLUA DEOR	1125	12	132589	18000	13500	2363	4758.9	150589	1500	36112.5	39723.75	13500	1037.81
AE-41	NATUNBOLAI	600	12	70714	9600	7200	1260	2538	80314	800	19260	21186	7200	553.50
AE-42	KOTOHA	675	12	79554	10800	8100	1418	2855.4	90354	900	21667.5	23834.25	8100	622.69
AE-43	BHOGAMUR-A	600	12	70714	9600	7200	1260	2538	80314	800	19260	21186	7200	553.50
AE-44	BHOGAMUR-B	300	12	35357	4800	3600	630	1269	40157	400	9630	10593	3600	276.75
AE-45	PANIMIRI	450	12	53036	7200	5400	945	1903.5	60236	600	14445	15889.5	5400	415.13
AE-46	JHANJIMUKH GA	500	12	58929	8004	6000	1050	2115	66933	667	16050	17655	6000	461.25
AE-47	SESSUGHAT-A	300	11	35357	4800	3300	630	1179	40157	400	9330	10263	3600	276.75
AE-48	SESSUGHAT-B	300	11	35357	4800	3300	630	1179	40157	400	9330	10263	3600	276.75
AE-49	CHARAIBAHI	500	11	58929	8004	5500	1050	1965	66933	667	15550	17105	6000	461.25
AE-50	ITAKHULI	700	11	82500	11196	7700	1470	2751	93696	933	21770	23947	8400	645.75
AE-51	THANGAON	700	11	82500	11196	7700	1470	2751	93696	933	21770	23947	8400	645.75
		29805		**3512732**	**476868**	**364930**	**62593**	**128256.9**	**3989600**	**39739**	**964010.5**	**1060411.55**	**357660**	**27495.15**

i	Earthwork in excavation for bank trimming works	=	357660	cu.m	cu.m
ii	Total supply of Type-A geobags	=	3989600	Nos.	Nos.
	A. Geo bags at apron launching by boat	=	3512732	Nos.	Nos.
	B. Geo bags at toe key launching without boat (At Toe key in Cages)	=	476868	Nos.	Nos.
iii	Supply of Sewing Thread/Yarn PPMF stitching thread @ 11 Rm/Bag	=	43885600	Rm	Rm
iii	Total supply of PVC coated W.N. cages ofsize 1.5mx 1.5m x 0.45m	=	39739	Nos.	Nos.
iv	Total supply of geo-fabric filter mattress sheet	=	1060411.6	SqM	SqM
v	Total supply of silt	=	335126.4	CuM	CuM
vi	Total Surface area for CC Blocks = S.A. at slopes + S.A. at top anchorages	=	427523	SqM	SqM
	Total volume for CC Blocks = Total S.A. x Thickness (0.30m)				
	CC Block at slope pitching @ 0.3m thick	=	128256.9	CuM	CuM
vii	Providing and laying Filter material underneath pitching	=	54739.5	CuM	CuM

Executive Engineer
Dibrugarh Water Resources Division
Dibrugarh

Summary of Protection Reach Annexure-1

Name of the Scheme: Integrated Water Resources Management of Buridehing Basin

Sl. No.	Reach	Reach Length (m) as per DPR recommended by Cost Dte.	Actual Reach Length (Required + already executed since 2016)	Executed Length		Reach Length (m)	Co-ordinate of		Reach Length	
				HoA	Length		Starting Ch.	End Ch.	L/Bank	R/Bank
AE-1	MANMOW PATHAR	800	800			800	27°21'29.38"N 95°46'32.72"E	27°21'35.70"N 95°46'5.49"E		800
AE-2	MOULANG GAON	1000	1000			1000	27°19'29.11"N 95°43'49.04"E	27°19'37.67"N 95°43'17.96"E	1000	
AE-3	BORFAKIAL-A	1175	1870	SDRF	270	600	27°20'8.48"N 95°42'43.15"E	27°19'54.32"N 95°42'32.74"E		600
AE-4	BORFAKIAL-B					1000	27°19'45.24"N 95°42'35.29"E	27°19'13.61"N 95°42'36.17"E		1000
AE-5	BANSBARI	700	1000			1000	27°18'3.03"N 95°42'15.22"E	27°17'48.00"N 95°41'50.08"E	1000	
AE-6	TATIPATHAR MANIPURIBASTI-A	500	500			300	27°15'35.97"N 95°24'14.19"E	27°15'42.55"N 95°24'6.33"E	300	
AE-7	TATIPATHAR MANIPURIBASTI-B		500			200	27°15'53.80"N 95°23'58.39"E	27°15'59.71"N 95°23'55.54"E	200	
AE-8	NOCTE GAON	700	700			700	27°16'51.72"N 95°23'22.84"E	27°17'11.87"N 95°23'11.48"E	700	
AE-9	KONWARGAON-A	500	1500	NABARD/SDRF	400	600	27°17'46.66"N 95°22'58.60"E	27°17'52.22"N 95°22'39.45"E		600
AE-10	KONWARGAON-B					500	27°17'50.04"N 95°22'31.01"E	27°17'44.61"N 95°22'14.40"E		500
AE-11	UTTAMMATI		800	SDRF	159	650	27°17'24.03"N 95°21'17.05"E	27°17'40.90"N 95°21'3.40"E	650	
AE-12	BAMUNGAON-A	500	1020	SDRF	400	280	27°18'7.45"N 95°20'52.34"E	27°18'9.51"N 95°20'42.64"E		280
AE-13	BAMUNGAON-B					340	27°18'5.62"N 95°20'28.61"E	27°18'0.57"N 95°20'17.61"E		340
AE-14	JAGUNGAON	600	690	SDRF	90	600	27°18'4.55"N 95°19'46.00"E	27°18'22.93"N 95°19'51.06"E	600	
AE-15	NAGAON-A	800	965	NABARD	150	220	27°18'34.42"N 95°20'7.20"E	27°18'41.48"N 95°20'8.76"E		220
AE-16	NAGAON-B					595	27°18'46.88"N 95°20'8.93"E	27°19'4.75"N 95°20'1.10"E		595
AE-17	BORDOLOICHUK	700				700	27°18'48.77"N 95°17'57.95"E	27°18'31.08"N 95°17'42.39"E		700
AE-18	MOHMARI	500				500	27°19'5.14"N 95°16'31.28"E	27°19'16.75"N 95°16'20.29"E		500
AE-19	AMGURI	700	700			700	27°20'6.79"N 95°14'5.84"E	27°20'20.02"N 95°13'46.77"E	700	
AE-20	PANCHUTI	200	950	NABARD	300	650	27°20'0.55"N 95°14'53.08"E	27°20'8.05"N 95°14'31.11"E		650
AE-21	TINGRAI NEPALIGAON-A	700	1520	NABARD/SDRF	570	450	27°20'54.63"N 95°13'40.66"E	27°21'3.01"N 95°13'28.72"E		450
AE-22	TINGRAI NEPALIGAON-B					90	27°21'6.05"N 95°13'19.81"E	27°21'6.24"N 95°13'16.59"E		90
AE-23	TINGRAI NEPALIGAON-C					410	27°21'7.98"N 95°13'4.82"E	27°21'10.44"N 95°12'58.19"E		410
AE-24	KAIBARTAGAON	400	400			400	27°21'9.78"N 95°12'23.14"E	27°21'16.11"N 95°12'10.59"E	400	
AE-25	URIAMGURI	300	810	SDRF-2016-17	110	700	27°20'10.00"N 95°10'14.00"E	27°20'27.19"N 95° 9'58.17"E	700	
AE-26	BAMUNIBEEL	300	300			300	27°19'43.13"N 95° 8'47.24"E	27°19'42.07"N 95° 8'36.48"E	300	
AE-27	KOLAGORA	400	400			400	27°19'22.77"N 95° 6'46.57"E	27°19'27.75"N 95° 6'29.80"E	400	
AE-28	SESSA NEPAL1	600	760	SDRF-2019-20	160	600	27°19'1.58"N 95° 5'15.66"E	27°19'3.31"N 95° 4'54.88"E	600	
AE-29	DEHINGHOLLA	600	1000			1000	27°19'37.35"N 95° 5'55.52"E	27°19'20.42"N 95° 5'25.15"E		1000
AE-30	AGHUNIBARI	300	1100	SRDF 2016-17	800	300	27°18'29.93"N 95° 3'34.05"E	27°18'39.41"N 95° 3'32.05"E	300	
AE-31	SOLOGURI	500	500			500	27°19'25.95"N 95° 2'18.53"E	27°19'32.27"N 95° 2'1.97"E	500	
AE-32	TELPANI BONGAON	500	500			500	27°20'17.93"N 95° 2'28.83"E	27°20'33.48"N 95° 2'26.26"E		500
AE-33	KORAIGURI	500	950	NABARD/SDRF	450	500	27°20'44.47"N 95° 1'58.18"E	27°20'37.98"N 95° 1'41.74"E		500

Sl. No.	Reach	Reach Length (m) as per DPR recommended by Cost Dte.	Actual Reach Length (Required + already executed since 2016)	Executed Length		Reach Length (m)	Co-ordinate of		Reach Length	
				HoA	Length		Starting Ch.	End Ch.	L/Bank	R/Bank
AE-34	SINGIMARI	500	1200	NABARD/SDRF	700	500	27°21'28.28"N 95° 1'13.24"E	27°21'29.83"N 95° 0'55.27"E		500
AE-35	BHURBHURI-1	500	2150			2150	27°22'6.18"N 95° 0'8.90"E	27°22'54.94"N 95° 0'0.86"E		2150
AE-36	BHURBHURI-2	300	515			515	27°21'26.14"N 94°58'52.46"E	27°21'13.86"N 94°58'39.89"E		515
AE-37	BORBEEL-A	300	1525	SDRF	600	525	27°20'58.64"N 94°57'59.20"E	27°20'53.80"N 94°57'41.03"E		525
AE-38	BORBEEL-B					400	27°20'40.67"N 94°57'25.08"E	27°20'28.48"N 94°57'20.34"E		400
AE-39	CHARAIHABI KHAMTIGHAT		800			880	27°20'15.74"N 94°57'24.68"E	27°20'4.37"N 94°56'59.31"E	880	
AE-40	KOLOLUA DEORI GAON	865	1355	SDRF	230	1125	27°18'25.72"N 94°54'49.40"E	27°18'47.03"N 94°54'28.61"E	1125	
AE-41	NATUNBOLAI	400	950	SDRF	350	600	27°19'15.97"N 94°54'17.51"E	27°19'13.14"N 94°53'56.64"E		600
AE-42	KOTOHA	500	675			675	27°19'1.52"N 94°53'11.69"E	27°18'46.48"N 94°52'56.70"E		675
AE-43	BHOGAMUR-A	600	1350	SOPD FDR	450	600	27°17'53.22"N 94°50'49.57"E	27°17'15.36"N 94°50'25.14"E		600
AE-44	BHOGAMUR-B					300	27°16'59.52"N 94°50'28.62"E	27°16'42.36"N 94°50'29.68"E		300
AE-45	PANIMIRI		450			450	27°17'25.46"N 94°48'27.13"E	27°17'26.31"N 94°48'12.21"E		450
AE-46	JHANJIMUKH GAON	500	500			500	27°16'45.78"N 94°47'57.71"E	27°16'30.02"N 94°48'1.37"E		500
AE-47	SESSUGHAT-A	600	700	SDRF	100	300	27°15'17.72"N 94°47'57.29"E	27°15'3.13"N 94°47'50.82"E	300	
AE-48	SESSUGHAT-B					300	27°15'0.17"N 94°47'47.38"E	27°14'54.85"N 94°47'38.55"E	300	
AE-49	CHARAIBAHI		500			500	27°15'3.89"N 94°47'1.96"E	27°14'55.85"N 94°46'46.50"E		500
AE-50	ITAKHULI	500				700	27°14'35.83"N 94°46'13.74"E	27°14'50.11"N 94°45'56.71"E		700
AE-51	THANGAON	700				700	27°14'57.16"N 94°45'3.81"E	27°14'57.26"N 94°44'34.86"E		700
Total		**20740**	**33905**		**6289**	**29805**			**10955**	**18850**

AE-11, AE-39, AE-45 & AE-49 are new erosion reaches

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2. Anti-Erosion Works Proforma-B

A. Main River

Sl No.	Name of River/Stream	Location	Anti-Erosion Works		Total Length
			Left Bank	Right Bank	
AE-1	Buridehing	MANMOW PATHAR		800	800
AE-2	Buridehing	MOULANG GAON	1000		1000
AE-3	Buridehing	BORFAKIAL-A		600	600
AE-4	Buridehing	BORFAKIAL-B		1000	1000
AE-5	Buridehing	BANSBARI	1000		1000
AE-6	Buridehing	TANTIPATHAR MANIPURI BASTI A	300		300
AE-7	Buridehing	TANTIPATHAR MANIPURI BASTI B	200		200
AE-8	Buridehing	NOCTE GAON	700		700
AE-9	Buridehing	KONWARGAON A		600	600
AE-10	Buridehing	KONWARGAON B		500	500
AE-11	Buridehing	UTTAMMATI	650		650
AE-12	Buridehing	BAMUNGAON-1		280	280
AE-13	Buridehing	BAMUNGAON-2		340	340
AE-14	Buridehing	JAGUNGAON	600		600
AE-15	Buridehing	NAGAON 1		220	220
AE-16	Buridehing	NAGAON 2		595	595
AE-17	Buridehing	BORDOLOICHUK		700	700
AE-18	Buridehing	MOHMARI		500	500
AE-19	Buridehing	AMGURI	700		700
AE-20	Buridehing	PANCHUTI		650	650
AE-21	Buridehing	TINGRAI NEPALIGAON A		450	450
AE-22	Buridehing	TINGRAI NEPALIGAON B		90	90
AE-23	Buridehing	TINGRAI NEPALIGAON C		410	410
AE-24	Buridehing	KAIBARTAGAON	400		400
AE-25	Buridehing	URIAMGURI	700		700
AE-26	Buridehing	BAMUNIBEEL	300		300
AE-27	Buridehing	KOLAGORA	400		400
AE-28	Buridehing	SESSA NEPALI	600		600
AE-29	Buridehing	DEHINGHOLLA		1000	1000
AE-30	Buridehing	AGHUNIBARI	300		300
AE-31	Buridehing	SOLOGURI	500		500
AE-32	Buridehing	TELPANI BONGAON		500	500
AE-33	Buridehing	KORAIGURI		500	500
AE-34	Buridehing	SINGIMARI		500	500
AE-35	Buridehing	BHURBHURI-1		2150	2150

Sl No.	Name of River/Stream	Location	Anti-Erosion Works		Total Length
			Left Bank	Right Bank	
AE-36	Buridehing	BHURBHURI-2		515	515
AE-37	Buridehing	BORBEEL A		525	525
AE-38	Buridehing	BORBEEL B		400	400
AE-39	Buridehing	CHARAIHABI KHAMTIGHAT	880		880
AE-40	Buridehing	KOLOLUA DEORI GAON	1125		1125
AE-41	Buridehing	NATUNBOLAI		600	600
AE-42	Buridehing	KOTOHA		675	675
AE-43	Buridehing	BHOGAMUR A		600	600
AE-44	Buridehing	BHOGAMUR B		300	300
AE-45	Buridehing	PANIMIRI		450	450
AE-46	Buridehing	JHANJIMUKH GAON		500	500
AE-47	Buridehing	SESSUGHAT A	300		300
AE-48	Buridehing	SESSUGHAT B	300		300
AE-49	Buridehing	CHARAIBAHI		500	500
AE-50	Buridehing	ITAKHULI		700	700
AE-51	Buridehing	THANGAON		700	700
Total			**10955**	**18850**	**29805**

B.Tributaries

Sl No.	Name of River/Stream	Location	Anti-Erosion Works		Total Length
			Left Bank	Right Bank	
		NIL			
Total			**0**	**0**	**0**

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STATEMENT-IV

Name of the Scheme: Integrated Water Resources Management of Buridehing Basin

Statement of quantities for PSC Porcupines for Multilayered Screens

(6 Nos of screens at U/s and 6 Nos at D/S of Anti-erosion reaches, Length of each bar = 45m, Each bar contain 3 rows for bottom layer & 2 rows for upper layer)

Sl. No.	Reach	Porcupine bars at U/S of Protection Work	Porcupine bars at D/S of Protection Work	Length of porcupine bar	No. of rows in bottom layer below LWL per bar	No. of rows in top layer below LWL per bar	No. of PSC Porcupines	Nos. of porcupine above LWL
AE-1	MANMOW PATHAR	6 bars @ 60m c/c	6 bars @ 60m c/c	45 m	3 rows	2 rows	900	18
AE-2	MOULANG GAON						900	18
AE-3	BORFAKIAL-A						450	18
AE-4	BORFAKIAL-B						450	18
AE-5	BANSBARI						900	18
AE-6	TANTIPATHAR MANIPURI BASTI A						450	18
AE-7	TANTIPATHAR MANIPURI BASTI B						450	18
AE-8	NOCTE GAON						900	18
AE-9	KONWARGAON A						450	18
AE-10	KONWARGAON B						450	18
AE-11	UTTAMMATI						900	18
AE-12	BAMUNGAON-1						450	18
AE-13	BAMUNGAON-2						450	18
AE-14	JAGUNGAON						900	18
AE-15	NAGAON 1						450	18
AE-16	NAGAON 2						450	18
AE-17	BORDOLOICHUK						900	18
AE-18	MOHMARI						900	18
AE-19	AMGURI						900	18
AE-20	PANCHUTI						900	18
AE-21	TINGRAI NEPALIGAON A						450	18
AE-22	TINGRAI NEPALIGAON B							18
AE-23	TINGRAI NEPALIGAON C						450	18
AE-24	KAIBARTAGAON						900	18
AE-25	URIAMGURI						900	18
AE-26	BAMUNIBEEL						900	18
AE-27	KOLAGORA						900	18
AE-28	SESSA NEPALI						900	18
AE-29	DEHINGHOLLA						900	18
AE-30	AGHUNIBARI						900	18
AE-31	SOLOGURI						900	18
AE-32	TELPANI BONGAON						900	18
AE-33	KORAIGURI						900	18
AE-34	SINGIMARI						900	18
AE-35	BHURBHURI-1						450	18
AE-36	BHURBHURI-2						450	18
AE-37	BORBEEL A						450	18
AE-38	BORBEEL B						450	18
AE-39	CHARAIHABI KHAMTIGHAT						900	18
AE-40	KOLOLUA DEORI GAON						900	18
AE-41	NATUNBOLAI						900	18
AE-42	KOTOHA						900	18
AE-43	BHOGAMUR A						450	18
AE-44	BHOGAMUR B						450	18
AE-45	PANIMIRI						900	18
AE-46	JHANJIMUKH GAON						900	18
AE-47	SESSUGHAT A						450	18
AE-48	SESSUGHAT B						450	18
AE-49	CHARAIBAHI						900	18
AE-50	ITAKHULI						900	18
AE-51	THANGAON						900	18
Total							**36000**	**918**

1	Total qnty of PSC Porcupines =	36918 Nos.
2	Total qnty. of PSC Porcupine members =	221508 Nos.
3	Porcupine Launching W/O boat	918 Nos.
4	Porcupine Launching By boat	36000 Nos.

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Dibrugarh

SUB-ESTIMATE NO. 1

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

Sub-Estimate I

Summary of Estimate for Sluice Gates

Sl. No		Sluice No.	Geographic Location of Sluice in Easting & Northng	Openings as per Design	Stilling Basin as per design	U/S protection works		D/S protection works		Estimated Cost	Ref. to Sub-Estimate	Remarks
						Length of C.C. Block Protection (0.5m cubical blocks over 0.5m thick layer of filter gravel	Length of Launching Apron 1m thick	Length of C.C. Block Protection (0.5m cubical blocks over 0.5m thick layer of filter gravel	Length of Launching Apron 1m thick			
1	1	**E-09/1**	94° 52' 0.405" E, 27° 18' 6.292" N	1 No (2.1m x 2.7m)	L = 5m, 2m below sill	2	4	4	4	₹ 64,37,102.89	Sub-Est: SG-1	Damaged, to be newly constructed
2	2	**E-09/2**	94° 49' 52.324" E, 27° 17' 3.133" N	1 No (2.1m x 2.7m)	L = 5m, 2m below sill	2	4	4	4	₹ 64,37,102.89		
3	19	E-16/2	95° 10' 49.643" E, 27° 19' 51.058" N	1 No (2.1m x 2.7m)	L = 5m, 2m below sill	2	4	4	4	₹ 64,37,102.89		
4	29	E-24/4	95° 12' 55.086" E, 27° 21' 50.814" N	1 No (2.1m x 2.7m)	L = 5m, 2m below sill	2	4	4	4	₹ 64,37,102.89		
5	36	**E-27/2**	95° 19' 44.715" E, 27° 20' 32.318" N	1 No (2.1m x 2.7m)	L = 5m, 2m below sill	2	4	4	4	₹ 64,37,102.89		
6	37	**E-27/3**	95° 19' 40.636" E, 27° 20' 28.585" N	1 No (2.1m x 2.7m)	L = 5m, 2m below sill	2	4	4	4	₹ 64,37,102.89		
7	38	**E-27/4**	95° 19' 30.154" E, 27° 20' 3.973" N	1 No (2.1m x 2.7m)	L = 5m, 2m below sill	2	4	4	4	₹ 64,37,102.89		
8	39	**E-28/1**	95° 20' 21.353" E, 27° 20' 13.481" N	1 No (2.1m x 2.7m)	L = 5m, 2m below sill	2	4	4	4	₹ 64,37,102.89		
9	3	**E-12/1**	94° 51' 54.115" E, 27° 15' 44.940" N	1 No (2.1m x 2.7m)	L = 9m, 2m below sill	4	8	8	10	₹ 73,05,169.01	Sub-Est: SG-2	
10	4	**E-12/2**	94° 50' 10.440" E, 27° 15' 46.117" N	1 No (2.1m x 2.7m)	L = 9m, 2m below sill	4	8	8	10	₹ 73,05,169.01		
11	5	**E-12/3**	94° 47' 52.406" E, 27° 15' 2.192" N	1 No (2.1m x 2.7m)	L = 9m, 2m below sill	4	8	8	10	₹ 73,05,169.01		
12	18	E-16/1	95° 11' 21.297" E, 27° 20' 11.778" N	1 No (2.1m x 2.7m)	L = 9m, 2m below sill	4	8	8	10	₹ 73,05,169.01		
13	20	E-16/3	95° 10' 28.344" E, 27° 19' 53.860" N	2 Nos. (2.1m x 2.7m)	L = 10m, 2m below sill	4	8	8	10	₹ 90,91,348.96	Sub-Est: SG-3	
14	17	E-15/4	94° 52' 43.277" E, 27° 18' 40.289" N	1 No (2.1m x 2.7m)	L = 4m, 2m below sill	2	4	4	4	₹ 27,75,611.50	Sub-Est: SG-4	Specification of existing structures are found to be adequate as per Design. These Sluice gates are in working Condition, however Barrel length to be extended due to proposed widening of embankment as per new specifications by restructuring country side of structure. Protection works are mostly detoriated and hence proposed to be completely rebuilt as per design specifications
15	21	E-16/4	95° 8' 48.477" E, 27° 19' 41.922" N	1 No (2.1m x 2.7m)	L = 5m, 2m below sill	2	4	4	4	₹ 27,75,611.50		
16	7	E-13/2	95° 10' 12.668" E, 27° 21' 4.927" N	1 No (2.1m x 2.7m)	L = 4m, 2m below sill	2	4	4	4	₹ 27,75,611.50		
17	8	E-13/3	95° 9' 5.404" E, 27° 21' 22.309" N	1 No (2.1m x 2.7m)	L = 4m, 2m below sill	2	4	4	4	₹ 27,75,611.50		
18	24	E-23/1	95° 13' 26.517" E, 27° 22' 34.106" N	1 No (2.1m x 2.7m)	L = 4m, 2m below sill	2	4	4	4	₹ 27,75,611.50		
19	25	E-23/2	95° 12' 19.632" E, 27° 21' 40.979" N	1 No (2.1m x 2.7m)	L = 4m, 2m below sill	2	4	4	4	₹ 27,75,611.50		
20	26	E-24/1	95° 13' 48.589" E, 27° 22' 16.926" N	1 No (2.1m x 2.7m)	L = 4m, 2m below sill	2	4	4	4	₹ 27,75,611.50		
21	27	E-24/2	95° 13' 34.966" E, 27° 22' 12.628" N	1 No (2.1m x 2.7m)	L = 2m, 2m below sill	2	4	4	4	₹ 27,75,611.50		
22	28	E-24/3	95° 13' 25.988" E, 27° 22' 7.638" N	1 No (2.1m x 2.7m)	L = 2m, 2m below sill	2	4	4	4	₹ 27,75,611.50		
23	32	E-25/3	95° 14' 41.504" E, 27° 20' 10.938" N	1 No (2.1m x 2.7m)	L = 6m, 2m below sill	2	4	4	4	₹ 27,75,611.50		
24	6	E-13/1	95° 11' 26.109" E, 27° 21' 42.862" N	1 No (2.1m x 2.7m)	L = 6m, 2m below sill	2	4	4	6	₹ 28,26,853.85	Sub-Est: SG-5	
25	9	E-14/1	95° 6' 16.281" E, 27° 19' 51.711" N	1 No (2.1m x 2.7m)	L = 6m, 2m below sill	2	4	4	6	₹ 28,26,853.85		
26	12	E-14/4	94° 59' 33.686" E, 27° 22' 40.825" N	1 No (2.1m x 2.7m)	L = 5m, 2m below sill	2	4	4	6	₹ 28,26,853.85		
27	13	E-14/5	94° 58' 45.528" E, 27° 21' 25.449" N	1 No (2.1m x 2.7m)	L = 6m, 2m below sill	2	4	4	6	₹ 28,26,853.85		
28	16	E-15/3	94° 53' 16.701" E, 27° 19' 14.441" N	1 No (2.1m x 2.7m)	L = 5m, 2m below sill	2	4	4	6	₹ 28,26,853.85		
29	22	E-16/5	95° 7' 27.537" E, 27° 19' 19.467" N	1 No (2.1m x 2.7m)	L = 6m, 2m below sill	2	4	4	6	₹ 28,26,853.85		
30	30	E-25/1	95° 16' 27.607" E, 27° 19' 13.474" N	1 No (2.1m x 2.7m)	L = 6m, 2m below sill	2	4	4	6	₹ 28,26,853.85		
31	31	E-25/2	95° 14' 55.720" E, 27° 20' 3.335" N	1 No (2.1m x 2.7m)	L = 6m, 2m below sill	2	4	4	6	₹ 28,26,853.85		
32	11	E-14/3	95° 1' 28.394" E, 27° 21' 18.295" N	1 No (2.1m x 2.7m)	L = 7m, 2m below sill	2	4	4	8	₹ 28,78,096.20	Sub-Est: SG-6	
33	15	E-15/2	94° 53' 57.598" E, 27° 19' 27.793" N	1 No (2.1m x 2.7m)	L = 7m, 2m below sill	2	4	4	8	₹ 28,78,096.20		
34	14	E-15/1	94° 56' 19.703" E, 27° 20' 18.703" N	1 No (2.1m x 2.7m)	L = 9m, 2m below sill	4	6	8	10	₹ 32,47,433.00	Sub-Est: SG-7	
35	35	E-27/1	95° 20' 46.368" E, 27° 20' 20.795" N	1 No (2.1m x 2.7m)	L = 9m, 2m below sill	4	6	8	10	₹ 32,47,433.00		
36	10	E-14/2	95° 1' 55.791" E, 27° 21' 4.219" N	2 Nos. (2.1m x 2.7m)	L = 12m, 2m below sill	5	8	10	14	₹ 40,01,821.60	Sub-Est: SG-8	
37	33	E-25/4	95° 14' 35.620" E, 27° 20' 16.783" N	2 Nos. (2.1m x 2.7m)	L = 12m, 2m below sill	5	8	10	14	₹ 40,01,821.60		
38	34	E-25/5	95° 13' 39.088" E, 27° 20' 54.950" N	2 Nos. (2.1m x 2.7m)	L = 11m, 2m below sill	5	8	10	14	₹ 40,01,821.60		
39	23	E-19/1	94° 57' 45.383" E, 27° 19' 37.381" N	1 No (2.1m x 2.7m)	L = 12m, 2m below sill	5	8	10	14	₹ 35,83,504.44	Sub-Est: SG-9	
									Total	**₹ 16,80,19,822.00**		

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Sub-Estimate I

Summary of Estimate for Sluice Gates

Sl. No		Sluice No.	Geographic Location of Sluice in Easting & Northng	Openings as per Design	Stilling Basin as per design	U/S protection works		D/S protection works		Estimated Cost	Ref. to Sub-Estimate	Remarks
						Length of C.C. Block Protection (0.5m cubical blocks over 0.5m thick layer of filter gravel	Length of Launching Apron 1m thick	Length of C.C. Block Protection (0.5m cubical blocks over 0.5m thick layer of filter gravel	Length of Launching Apron 1m thick			
1	1	**E-09/1**	94° 52' 0.405" E, 27° 18' 6.292" N	1 No (2.1m x 2.7m)	L = 5m, 2m below sill	2	4	4	4	₹ 64,37,102.89	Sub-Est: SG-1	Damaged, to be newly constructed
2	2	**E-09/2**	94° 49' 52.324" E, 27° 17' 3.133" N	1 No (2.1m x 2.7m)	L = 5m, 2m below sill	2	4	4	4	₹ 64,37,102.89		
3	19	E-16/2	95° 10' 49.643" E, 27° 19' 51.058" N	1 No (2.1m x 2.7m)	L = 5m, 2m below sill	2	4	4	4	₹ 64,37,102.89		
4	29	E-24/4	95° 12' 55.086" E, 27° 21' 50.814" N	1 No (2.1m x 2.7m)	L = 5m, 2m below sill	2	4	4	4	₹ 64,37,102.89		
5	36	**E-27/2**	95° 19' 44.715" E, 27° 20' 32.318" N	1 No (2.1m x 2.7m)	L = 5m, 2m below sill	2	4	4	4	₹ 64,37,102.89		
6	37	**E-27/3**	95° 19' 40.636" E, 27° 20' 28.585" N	1 No (2.1m x 2.7m)	L = 5m, 2m below sill	2	4	4	4	₹ 64,37,102.89		
7	38	**E-27/4**	95° 19' 30.154" E, 27° 20' 3.973" N	1 No (2.1m x 2.7m)	L = 5m, 2m below sill	2	4	4	4	₹ 64,37,102.89		
8	39	**E-28/1**	95° 20' 21.353" E, 27° 20' 13.481" N	1 No (2.1m x 2.7m)	L = 5m, 2m below sill	2	4	4	4	₹ 64,37,102.89		
9	3	**E-12/1**	94° 51' 54.115" E, 27° 15' 44.940" N	1 No (2.1m x 2.7m)	L = 9m, 2m below sill	4	8	8	10	₹ 73,05,169.01	Sub-Est: SG-2	
10	4	**E-12/2**	94° 50' 10.440" E, 27° 15' 46.117" N	1 No (2.1m x 2.7m)	L = 9m, 2m below sill	4	8	8	10	₹ 73,05,169.01		
11	5	**E-12/3**	94° 47' 52.406" E, 27° 15' 2.192" N	1 No (2.1m x 2.7m)	L = 9m, 2m below sill	4	8	8	10	₹ 73,05,169.01		
12	18	E-16/1	95° 11' 21.297" E, 27° 20' 11.778" N	1 No (2.1m x 2.7m)	L = 9m, 2m below sill	4	8	8	10	₹ 73,05,169.01		
13	20	E-16/3	95° 10' 28.344" E, 27° 19' 53.860" N	2 Nos. (2.1m x 2.7m)	L = 10m, 2m below sill	4	8	8	10	₹ 90,91,348.96	Sub-Est: SG-3	
14	17	E-15/4	94° 52' 43.277" E, 27° 18' 40.289" N	1 No (2.1m x 2.7m)	L = 4m, 2m below sill	2	4	4	4	₹ 27,75,611.50	Sub-Est: SG-4	Specification of existing structures are found to be adequate as per Design. These Sluice gates are in working Condition, however Barrel length to be extended due to proposed widening of embankment as per new specifications by restructuring country side of structure. Protection works are mostly detoriated and hence proposed to be completely rebuilt as per design specifications
15	21	E-16/4	95° 8' 48.477" E, 27° 19' 41.922" N	1 No (2.1m x 2.7m)	L = 5m, 2m below sill	2	4	4	4	₹ 27,75,611.50		
16	7	E-13/2	95° 10' 12.668" E, 27° 21' 4.927" N	1 No (2.1m x 2.7m)	L = 4m, 2m below sill	2	4	4	4	₹ 27,75,611.50		
17	8	E-13/3	95° 9' 5.404" E, 27° 21' 22.309" N	1 No (2.1m x 2.7m)	L = 4m, 2m below sill	2	4	4	4	₹ 27,75,611.50		
18	24	E-23/1	95° 13' 26.517" E, 27° 22' 34.106" N	1 No (2.1m x 2.7m)	L = 4m, 2m below sill	2	4	4	4	₹ 27,75,611.50		
19	25	E-23/2	95° 12' 19.632" E, 27° 21' 40.979" N	1 No (2.1m x 2.7m)	L = 4m, 2m below sill	2	4	4	4	₹ 27,75,611.50		
20	26	E-24/1	95° 13' 48.589" E, 27° 22' 16.926" N	1 No (2.1m x 2.7m)	L = 4m, 2m below sill	2	4	4	4	₹ 27,75,611.50		
21	27	E-24/2	95° 13' 34.966" E, 27° 22' 12.628" N	1 No (2.1m x 2.7m)	L = 2m, 2m below sill	2	4	4	4	₹ 27,75,611.50		
22	28	E-24/3	95° 13' 25.988" E, 27° 22' 7.638" N	1 No (2.1m x 2.7m)	L = 2m, 2m below sill	2	4	4	4	₹ 27,75,611.50		
23	32	E-25/3	95° 14' 41.504" E, 27° 20' 10.938" N	1 No (2.1m x 2.7m)	L = 6m, 2m below sill	2	4	4	4	₹ 27,75,611.50		
24	6	E-13/1	95° 11' 26.109" E, 27° 21' 42.862" N	1 No (2.1m x 2.7m)	L = 6m, 2m below sill	2	4	4	6	₹ 28,26,853.85	Sub-Est: SG-5	
25	9	E-14/1	95° 6' 16.281" E, 27° 19' 51.711" N	1 No (2.1m x 2.7m)	L = 6m, 2m below sill	2	4	4	6	₹ 28,26,853.85		
26	12	E-14/4	94° 59' 33.686" E, 27° 22' 40.825" N	1 No (2.1m x 2.7m)	L = 5m, 2m below sill	2	4	4	6	₹ 28,26,853.85		
27	13	E-14/5	94° 58' 45.528" E, 27° 21' 25.449" N	1 No (2.1m x 2.7m)	L = 6m, 2m below sill	2	4	4	6	₹ 28,26,853.85		
28	16	E-15/3	94° 53' 16.701" E, 27° 19' 14.441" N	1 No (2.1m x 2.7m)	L = 5m, 2m below sill	2	4	4	6	₹ 28,26,853.85		
29	22	E-16/5	95° 7' 27.537" E, 27° 19' 19.467" N	1 No (2.1m x 2.7m)	L = 6m, 2m below sill	2	4	4	6	₹ 28,26,853.85		
30	30	E-25/1	95° 16' 27.607" E, 27° 19' 13.474" N	1 No (2.1m x 2.7m)	L = 6m, 2m below sill	2	4	4	6	₹ 28,26,853.85		
31	31	E-25/2	95° 14' 55.720" E, 27° 20' 3.335" N	1 No (2.1m x 2.7m)	L = 6m, 2m below sill	2	4	4	6	₹ 28,26,853.85		
32	11	E-14/3	95° 1' 28.394" E, 27° 21' 18.295" N	1 No (2.1m x 2.7m)	L = 7m, 2m below sill	2	4	4	8	₹ 28,78,096.20	Sub-Est: SG-6	
33	15	E-15/2	94° 53' 57.598" E, 27° 19' 27.793" N	1 No (2.1m x 2.7m)	L = 7m, 2m below sill	2	4	4	8	₹ 28,78,096.20		
34	14	E-15/1	94° 56' 19.703" E, 27° 20' 18.703" N	1 No (2.1m x 2.7m)	L = 9m, 2m below sill	4	6	8	10	₹ 32,47,433.00	Sub-Est: SG-7	
35	35	E-27/1	95° 20' 46.368" E, 27° 20' 20.795" N	1 No (2.1m x 2.7m)	L = 9m, 2m below sill	4	6	8	10	₹ 32,47,433.00		
36	10	E-14/2	95° 1' 55.791" E, 27° 21' 4.219" N	2 Nos. (2.1m x 2.7m)	L = 12m, 2m below sill	5	8	10	14	₹ 40,01,821.60	Sub-Est: SG-8	
37	33	E-25/4	95° 14' 35.620" E, 27° 20' 16.783" N	2 Nos. (2.1m x 2.7m)	L = 12m, 2m below sill	5	8	10	14	₹ 40,01,821.60		
38	34	E-25/5	95° 13' 39.088" E, 27° 20' 54.950" N	2 Nos. (2.1m x 2.7m)	L = 11m, 2m below sill	5	8	10	14	₹ 40,01,821.60		
39	23	E-19/1	94° 57' 45.383" E, 27° 19' 37.381" N	1 No (2.1m x 2.7m)	L = 12m, 2m below sill	5	8	10	14	₹ 35,83,504.44	Sub-Est: SG-9	
									Total	**₹ 16,80,19,822.00**		

Executive Engineer
Dibrugarh W.R. Division
Dibrugarh

Name of Project:- Integrated Water Resources Management of Buridehing basin

SUB-ESTIMATE - SG-1 (For Sluice gates E-09/1, E-09/2, E-16/2, E-24/4, E-27/2, E-27/3, E-27/4 & E-28/1)

Items	Particulars	Unit	Quantity	Rate (Rs.) as per SR of AWRD 2020-2021 (Rural Roads)	Rate considering 12% GST & 1% Labour Cess	Amount (Rs.)
1	Earthwork in excavation for structures as per drawing and technical specifications Clause 305.1 including setting out, construction of shoring and bracing, removal of stumps and other deleterious material and disposal upto a lead of 50 m, dressing of sides and bottom and backfilling in trenches with excavated suitable material. I Ordinary soil Upto 3 m depth Quantity as per statement BC_19/1_S1 **Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 11.1 (I)**	Cum	575.74	₹ 113.00	₹ 127.83	₹ 73,597.00
2	Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and technical specifications Clause 802, 803, 1202 & 1203 A With crushed Stone II P.C.C grade M 15 Nominal mix (1:2.5:5)	Cum	160.96	₹ 5,216.10	₹ 5,900.45	₹ 9,49,736.00
	Quantity as per statement BC_19/1_S1					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 11.4 A(II)					
3	Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and technical specifications Clause 802, 803, 1202 & 1203 A With crushed Stone IV R.C.C Grade M20	Cum	239.65	₹ 6,259.20	₹ 7,080.41	₹ 16,96,820.00
	Quantity as per statement BC_19/1_S1					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 11.4 A(IV)					
4	Supplying, fitting and placing TMT (Fe-500 D) reinforcement bar (From Primary Producer: TATA/SAIL/Esser Steel/ Jindal steel/Shyam steel/RINL) in foundation complete as per drawings and technical specifications Clauses 1000 and 1202	t	31.370	₹ 56,239.00	₹ 63,617.56	₹ 19,95,683.00
	Quantity as per statement BC_19/1_S1					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 11.7					
5	Supplying and fixing steel sluice gate shutter including bevel hoist arrangement. As per Annexure- BC_2019/1_A	Nos.	1.00	₹ 5,51,000.00		₹ 5,51,000.00
6	Providing and laying boulder apron for bed protection with stone boulders of minimum size and weight as per Table 1300.1, no fragment weighing less than 25 kg laid dry complete as per drawing and technical specifications Clause 1301	Cum	152.00	₹ 1,646.80	₹ 1,862.86	₹ 2,83,155.00
	Quantity as per statement BC_19/1_S2					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 14.1					

Items	Particulars	Unit	Quantity	Rate (Rs.) as per SR of AWRD 2020-2021 (Rural Roads)	Rate considering 12% GST & 1% Labour Cess	Amount (Rs.)
7	Providing and laying of Filter media with granular materials/stone crushed aggregates satisfying the requirements laid down in clause 2504.2.2. of MoRTH specifications to a thickness of not less than 600 mm with smaller size towards the soil and bigger size toeards the wall and provided over the entire surfaces behind the abutement, wing wall and return wall to the full height compacted to firm condition complete as per drawing and technical specification.	Cum	27.00	₹ 1,768.00	₹ 1,999.96	₹ 53,999.00
	Quantity as per statement BC_19/1_S2					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 17.51					
8	Providing and laying of apron with cement concrete blocks (size 0.5 x 0.5 x 0.5 m) of size as per Table 1300.1 cast-in-situ and made with nominal mix of M-15 grade cement concrete as per drawing and technical specifications Clause 1301	Cum	27.00	₹ 5,192.70	₹ 5,873.98	₹ 1,58,597.00
	Quantity as per statement BC_19/1_S2					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 14.3					
9	Single bamboo spur and palasiding of whole 2nd class bamboo (Jati or Bethua) 65mm to 75mm dia closely packed & driven, including fitting and fixing with half bamboo kamis horizantally in three rows with the cane or tieing wire complete and struts 1500 mm apart longitudinally and providing brush wood as per drawing and technical specification clause 1302.5 of MORD a) Driven atlease 900mm below and 1800mm above the ground on average. (a) Driven at least 900mm below and 1800 mm above the ground on average.	Rm	100.00	₹ 616.20	₹ 697.05	₹ 69,705.00
	Quantity as per statement BC_19/1_2					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 16.45					
10	Serviceable empty cement bags	Each	26786.00	₹ 6.00	₹ 6.79	₹ 1,60,716.00
	Quantity as per statement BC_19/1_S2					
	(As per EE Dibrugarh WR Division NIQ No. EE/WRD/DBR/2021-22/G-131/1441 on Dt. 20/05/2021)					
11	Labour charge for laying and pitching earth filled cement bags including excavation and borrowing earth, breaking clods, filling in bags and supplying and stitching the mouth with jute sutli, etc. complete as directed. (cement bags will be supplied by the department free of cost). For borrowing earth from a distance beyond 30m. & up to 60m.	Each	26786.00	₹ 14.20		₹ 3,80,361.20
	Quantity as per statement BC_19/1_S2					
	(As per EE Dibrugarh WR Division NIQ No. EE/WRD/DBR/2021-22/G-131/1441 on Dt. 20/05/2021)					
				Total (Rs.)		₹ 63,73,369.20
12	Dewatering by 5 H.P. water pump including supply of necessary fuel, engine oil and pump operator etc complete..					₹ 63,733.69
	Quantity = 1% of total cost					
				Grand Total Rs.		₹ 64,37,102.89

Executive Engineer
DIbrugarh W.R. Division
Dibrugarh

Name of Project:- Integrated Water Resources Management of Buridehing basin

QUANTITY STATEMENT - SG-1 (For Sluice gates E-09/1, E-09/2, E-16/2, E-24/4, E-27/2, E-27/3, E-27/4 & E-28/1)

Sl. No.	Particulars	Unit	No.	Dimensions			Quantity	Remarks
				L (M)	B (M)	H (M)		
1	Excavation for foundation							
	Box Culvert	Cum	1	12.60	4.10	1.00	51.66	
	Stilling Basin	Cum	1	5.00	6.05	3.00	90.75	
		Cum	1	4.00	3.10	1.50	18.60	
		Cum	1	4.00	9.00	1.50	54.00	
	U/S Floor	Cum	1	4.00	6.05	1.00	24.20	
	Apron U/S`& D/S	Cum	1	16.00	9.00	1.00	144.00	
	Toe walls	Cum	2	1.00	9.00	0.50	9.00	
	U/S Wing Walls	Cum	2	8.47	2.50	1.50	63.53	
	D/S Wing Walls	Cum	2	14.20	2.50	1.50	106.50	
	Cut-off Wall at botttom raft	Cum	2	0.50	9.00	1.00	9.00	
	Cut-off wall at edge of basin	Cum	1	0.50	9.00	1.00	4.50	
	Sub-Total						575.74	
2	M-10 PCC for foundation and flooring							
	Flooring Between U/S Wing Walls	Cum	1	4.00	6.05	1.00	24.20	
	Foundation for main culvert	Cum	1	12.60	3.10	1.00	39.06	
	U/S slope of Stiling Basin	Cum	1	4.00	3.10	1.00	12.40	
	Stilling Basin	Cum	1	4.00	6.05	1.00	24.20	
	D/S Slope of Stilling Basin	cum	1	4.00	9.00	1.00	36.00	
	Wing Wall U/S	Cum	2	8.47	2.50	0.15	6.35	
	Wing Wall D/S	Cum	2	14.20	2.50	0.15	10.65	
	Cut-off Wall at botttom raft	Cum	2	0.30	9.00	1.00	5.40	
	Cut-off wall at edge of basin	Cum	1	0.30	9.00	1.00	2.70	
	Sub-Total						160.96	
3	Quantity of M-20 concrete							
	Bottom raft	Cum	1	12.60	3.10	0.50	19.53	
	Abutments		2	13.35	0.50	2.77	36.91	
	Parapet		2	3.10	0.50	1.00	3.10	
	Hunch		4	12.60	0.15	0.15	0.57	
	Deck slab		1	12.60	3.10	0.50	19.53	
	Bottom Stem		2	14.20	3.00	0.55	46.86	Wing Wall D/S
	Abutments		2	14.20	0.55	3.00	46.86	
	Bottom Stem		2	8.47	3.10	0.55	28.88	Wing Wall U/S
	Abutments		2	8.47	0.55	2.04	19.01	
	Toe Wall		2	9.00	0.50	1.00	9.00	
			2	9.00	1.00	0.50	9.00	
	Chute Block		7	0.05	0.20	0.10	0.01	Stilling Basin
	Baffle Block		30	0.20	0.20	0.10	0.12	
	End Block		15	0.30	0.30	0.20	0.27	
						Total	239.65	
4	Total quantity of steel required (Fe415)							
		Kg	10mm	12mm	16mm	25mm		
	Main Culvert		145	27	228	225	625.17	
	Wing walls etc		28	723	519	1242	2512.16	
	Total Quantity in Kg						3137.33	
	Total Quantity in MT						31.37	
5	Total quantity of CC Blocks							
	U/S	Cum	1	2	9	0.5	9.00	
	D/S		1	4	9	0.5	18.00	
	Total Quantity in cum						27.00	

6	Quantity of boulders for Up stream & Down stream protection works.							
	U/S Apron		1.000	4.000	9.000	1.000	36.00	

		cum	2.000	6.500	2.000	1.000	26.00	
	D/S Apron		1.000	4.000	9.000	1.000	36.00	
			2.000	8.500	2.000	1.000	34.00	
			2.000	4.000	2.500	1.000	20.00	
Total Quantity in Cum							152.00	
7	Quantity of filter gravel 13mm to 19mm							
	U/S Apron	cum	1.000	2.000	9.000	0.500	9.00	
	D/S Apron		1.000	4.000	9.000	0.500	18.00	
Total Quantity in Cum							27.00	
8	Dewatering							
	Dewatering will be required for 3 months @ 8 hours per day 4 (six) Nos. of 5 HP pump set	hrs					2880.00	
Total Quantity in hours							2880.00	
9	Construction of whole bamboo single palisiding (cofferdam)							
	U/S	RM	2.000	25.000			50.00	
	D/S		2.000	25.000			50.00	
Total Quantity in RM							100.00	
10	Earth filled cement bags (cofferdam)							
	U/S	cum	1.000	50.000	2.500	3.000	375.00	
	D/S		1.000	50.000	2.500	3.000	375.00	
Total Quantity in cum							750.00	
Total Quantity in bags (0.028cum/bag)							26786.00	

Executive Engineer
DIbrugarh W.R. Division
Dibrugarh

Name of Project:- Integrated Water Resources Management of Buridehing basin

SUB-ESTIMATE - SG-2 (For Sluice gates E-12/1, E-12/2, E-12/3 & E-16/1)

Items	Particulars	Unit	Quantity	Rate (Rs.) as per SR of AWRD 2020-2021 (Rural Roads)	Rate considering 12% GST & 1% Labour Cess	Amount (Rs.)
1	Earthwork in excavation for structures as per drawing and technical specifications Clause 305.1 including setting out, construction of shoring and bracing, removal of stumps and other deleterious material and disposal upto a lead of 50 m, dressing of sides and bottom and backfilling in trenches with excavated suitable material. I Ordinary soil Upto 3 m depth Quantity as per statement BC_19/1_S1 **Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 11.1 (I)**	Cum	842.52	₹ 113.00	₹ 127.83	₹ 1,07,699.00
2	Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and technical specifications Clause 802, 803, 1202 & 1203 A With crushed Stone II P.C.C grade M 15 Nominal mix (1:2.5:5)	Cum	211.98	₹ 5,216.10	₹ 5,900.45	₹ 12,50,777.00
	Quantity as per statement BC_19/1_S1					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 11.4 A(II)					
3	Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and technical specifications Clause 802, 803, 1202 & 1203 A With crushed Stone IV R.C.C Grade M20	Cum	256.93	₹ 6,259.20	₹ 7,080.41	₹ 18,19,170.00
	Quantity as per statement BC_19/1_S1					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 11.4 A(IV)					
4	Supplying, fitting and placing TMT (Fe-500 D) reinforcement bar (From Primary Producer: TATA/SAIL/Esser Steel/ Jindal steel/Shyam steel/RINL) in foundation complete as per drawings and technical	t	34.090	₹ 56,239.00	₹ 63,617.56	₹ 21,68,723.00
	Quantity as per statement BC_19/1_S1					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 11.7					
5	Supplying and fixing steel sluice gate shutter including bevel hoist arrangement. As per Annexure- BC_2019/1_A	Nos.	1.00	₹ 5,51,000.00		₹ 5,51,000.00
6	Providing and laying boulder apron for bed protection with stone boulders of minimum size and weight as per Table 1300.1, no fragment weighing less than 25 kg laid dry complete as per drawing and technical specifications Clause 1301	Cum	306.00	₹ 1,646.80	₹ 1,862.86	₹ 5,70,035.00
	Quantity as per statement BC_19/1_S2					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 14.1					

Items	Particulars	Unit	Quantity	Rate (Rs.) as per SR of AWRD 2020-2021 (Rural Roads)	Rate considering 12% GST & 1% Labour Cess	Amount (Rs.)
7	Providing and laying of Filter media with granular materials/stone crushed aggregates satisfying the requirements laid down in clause 2504.2.2. of MoRTH specifications to a thickness of not less than 600 mm with smaller size towards the soil and bigger size toeards the wall and provided over the entire surfaces behind the abutement, wing wall and return wall to the full height compacted to firm condition complete as per drawing and technical specification.	Cum	54.00	₹ 1,768.00	₹ 1,999.96	₹ 1,07,998.00
	Quantity as per statement BC_19/1_S2					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 17.51					
8	Providing and laying of apron with cement concrete blocks (size 0.5 x 0.5 x 0.5 m) of size as per Table 1300.1 cast-in-situ and made with nominal mix of M-15 grade cement concrete as per drawing and technical specifications Clause 1301	Cum	54.00	₹ 5,192.70	₹ 5,873.98	₹ 3,17,195.00
	Quantity as per statement BC_19/1_S2					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 14.30					
9	Single bamboo spur and palasiding of whole 2nd class bamboo (Jati or Bethua) 65mm to 75mm dia closely packed & driven, including fitting and fixing with half bamboo kamis horizantally in three rows with the cane or tieing wire complete and struts 1500 mm apart longitudinally and providing brush wood as per drawing and technical specification clause 1302.5 of MORD a) Driven atlease 900mm below and 1800mm above the ground on average. (a) Driven at least 900mm below and 1800 mm above the ground on average.	Rm	100.00	₹ 616.20	₹ 697.05	₹ 69,705.00
	Quantity as per statement BC_19/1_2					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 16.45					
10	Serviceable empty cement bags	Each	13393.00	₹ 6.00	₹ 6.79	₹ 80,358.00
	Quantity as per statement BC_19/1_S2					
	(As per EE Dibrugarh WR Division NIQ No. EE/WRD/DBR/2021-22/G-131/1441 on Dt. 20/05/2021)					
11	Labour charge for laying and pitching earth filled cement bags including excavation and borrowing earth, breaking clods, filling in bags and supplying and stitching the mouth with jute sutli, etc. complete as directed. (cement bags will be supplied by the department free of cost). For borrowing earth from a distance beyond 30m. & up to 60m.	Each	13393.00	₹ 14.20		₹ 1,90,180.60
	Quantity as per statement BC_19/1_S2					
	(As per EE Dibrugarh WR Division NIQ No. EE/WRD/DBR/2021-22/G-131/1441 on Dt. 20/05/2021)					
				Total (Rs.)		₹ 72,32,840.60
12	Dewatering by 5 H.P. water pump including supply of necessary fuel, engine oil and pump operator etc complete..					₹ 72,328.41
	Quantity = 1% of total cost					
				Grand Total Rs.		₹ 73,05,169.01

Executive Engineer
DIbrugarh W.R. Division
Dibrugarh

Name of Project:- Integrated Water Resources Management of Buridehing basin

QUANTITY STATEMENT - SG-2 (For Sluice gates E-12/1, E-12/2, E-12/3 & E-16/1)

Sl. No.	Particulars	Unit	No.	Dimensions			Quantity	Remarks
				L (M)	B (M)	H (M)		
1	Excavation for foundation							
	Box Culvert	Cum	1	12.60	4.10	1.00	51.66	
	Stilling Basin	Cum	1	9.00	6.05	3.00	163.35	
		Cum	1	4.00	3.10	1.50	18.60	
		Cum	1	4.00	9.00	1.50	54.00	
	U/S Floor	Cum	1	4.00	6.05	1.00	24.20	
	Apron U/S`& D/S	Cum	1	32.00	9.00	1.00	288.00	
	Toe walls	Cum	2	1.00	9.00	0.50	9.00	
	U/S Wing Walls	Cum	2	8.47	2.50	1.50	63.53	
	D/S Wing Walls	Cum	2	16.69	2.50	1.50	125.18	
	Cut-off Wall at botttom raft	Cum	2	0.50	9.00	3.00	27.00	
	Cut-off wall at edge of basin	Cum	1	0.50	9.00	4.00	18.00	
	Sub-Total						842.52	
2	M-10 PCC for foundation and flooring							
	Flooring Between U/S Wing Walls	Cum	1	4.00	6.05	1.00	24.20	
	Foundation for main culvert	Cum	1	12.60	3.10	1.00	39.06	
	U/S slope of Stiling Basin	Cum	1	4.00	3.10	1.00	12.40	
	Stilling Basin	Cum	1	9.00	6.05	1.00	54.45	
	D/S Slope of Stilling Basin	cum	1	4.00	9.00	1.00	36.00	
	Wing Wall U/S	Cum	2	8.47	2.50	0.15	6.35	
	Wing Wall D/S	Cum	2	16.69	2.50	0.15	12.52	
	Cut-off Wall at botttom raft	Cum	2	0.30	9.00	3.00	16.20	
	Cut-off wall at edge of basin	Cum	1	0.30	9.00	4.00	10.80	
	Sub-Total						211.98	
3	Quantity of M-20 concrete							
	Bottom raft	Cum	1	12.60	3.10	0.50	19.53	
	Abutments		2	13.35	0.50	2.77	36.91	
	Parapet		2	3.10	0.50	1.00	3.10	
	Hunch		4	12.60	0.15	0.15	0.57	
	Deck slab		1	12.60	3.10	0.50	19.53	
	Bottom Stem		2	16.69	3.00	0.55	55.08	Wing Wall D/S
	Abutments		2	16.69	0.55	3.00	55.08	
	Bottom Stem		2	8.47	3.10	0.55	28.88	Wing Wall U/S
	Abutments		2	8.47	0.55	2.04	19.01	
	Toe Wall		2	9.00	0.50	1.00	9.00	
			2	9.00	1.00	0.50	9.00	
	Chute Block		2	0.20	0.80	0.40	0.13	Stilling Basin
	Baffle Block		9	0.35	0.30	0.50	0.47	
	End Block		8	0.50	0.40	0.40	0.64	
						Total	256.93	
4	Total quantity of steel required (Fe415)							
		Kg	10mm	12mm	16mm	25mm		
	Main Culvert		145	27	228	225	625.17	
	Wing walls etc		31	801	575	1376	2783.45	
	Total Quantity in Kg						3408.63	
	Total Quantity in MT						34.09	
5	Total quantity of CC Blocks							
	U/S	Cum	1	4	9	0.5	18.00	
	D/S		1	8	9	0.5	36.00	
	Total Quantity in cum						54.00	

6	Quantity of boulders for Up stream & Down stream protection works.							
	U/S Apron		1.000	8.000	9.000	1.000	72.00	

		cum	2.000	12.500	2.000	1.000	50.00	
	D/S Apron		1.000	10.000	9.000	1.000	90.00	
			2.000	18.500	2.000	1.000	74.00	
			2.000	4.000	2.500	1.000	20.00	
Total Quantity in Cum							306.00	
7	Quantity of filter gravel 13mm to 19mm							
	U/S Apron	cum	1.000	4.000	9.000	0.500	18.00	
	D/S Apron		1.000	8.000	9.000	0.500	36.00	
Total Quantity in Cum							54.00	
8	Dewatering							
	Dewatering will be required for 3 months @ 8 hours per day 4 (six) Nos. of 5 HP pump set	hrs					2880.00	
Total Quantity in hours							2880.00	
9	Construction of whole bamboo single palisiding							
	U/S	RM	2.000	25.000			50.00	
	D/S		2.000	25.000			50.00	
Total Quantity in RM							100.00	
10	Earth filled cement bags							
	U/S	cum	1.000	25.000	2.500	3.000	187.50	
	D/S		1.000	25.000	2.500	3.000	187.50	
Total Quantity in cum							375.00	
Total Quantity in bags (0.028cum/bag)							13393.00	

Executive Engineer
DIbrugarh W.R. Division
Dibrugarh

Name of Project:- Integrated Water Resources Management of Buridehing basin

SUB-ESTIMATE - SG-3 (For Sluice gate E-16/3)

Items	Particulars	Unit	Quantity	Rate (Rs.) as per SR of AWRD 2020-2021 (Rural Roads)	Rate considering 12% GST & 1% Labour Cess	Amount (Rs.)
1	Earthwork in excavation for structures as per drawing and technical specifications Clause 305.1 including setting out, construction of shoring and bracing, removal of stumps and other deleterious material and disposal upto a lead of 50 m, dressing of sides and bottom and backfilling in trenches with excavated suitable material. I Ordinary soil Upto 3 m depth Quantity as per statement BC_19/1_S1 **Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 11.1 (I)**	Cum	1118.65	₹ 113.00	₹ 127.83	₹ 1,42,997.00
2	Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and technical specifications Clause 802, 803, 1202 & 1203 A With crushed Stone II P.C.C grade M 15 Nominal mix (1:2.5:5)	Cum	269.67	₹ 5,216.10	₹ 5,900.45	₹ 15,91,174.00
	Quantity as per statement BC_19/1_S1					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 11.4 A(II)					
3	Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and technical specifications Clause 802, 803, 1202 & 1203 A With crushed Stone IV R.C.C Grade M20	Cum	304.29	₹ 6,259.20	₹ 7,080.41	₹ 21,54,498.00
	Quantity as per statement BC_19/1_S1					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 11.4 A(IV)					
4	Supplying, fitting and placing TMT (Fe-500 D) reinforcement bar (From Primary Producer: TATA/SAIL/Esser Steel/ Jindal steel/Shyam steel/RINL) in foundation complete as per drawings and technical	t	38.750	₹ 56,239.00	₹ 63,617.56	₹ 24,65,180.00
	Quantity as per statement BC_19/1_S1					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 11.7					
5	Supplying and fixing steel sluice gate shutter including bevel hoist arrangement. As per Annexure- BC_2019/1_A	Nos.	2.00	₹ 5,51,000.00		₹ 11,02,000.00
6	Providing and laying boulder apron for bed protection with stone boulders of minimum size and weight as per Table 1300.1, no fragment weighing less than 25 kg laid dry complete as per drawing and technical specifications Clause 1301	Cum	352.80	₹ 1,646.80	₹ 1,862.86	₹ 6,57,217.00
	Quantity as per statement BC_19/1_S2					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 14.1					

Items	Particulars	Unit	Quantity	Rate (Rs.) as per SR of AWRD 2020-2021 (Rural Roads)	Rate considering 12% GST & 1% Labour Cess	Amount (Rs.)
7	Providing and laying of Filter media with granular materials/stone crushed aggregates satisfying the requirements laid down in clause 2504.2.2. of MoRTH specifications to a thickness of not less than 600 mm with smaller size towards the soil and bigger size toeards the wall and provided over the entire surfaces behind the abutement, wing wall and return wall to the full height compacted to firm condition complete as per drawing and technical specification.	Cum	69.60	₹ 1,768.00	₹ 1,999.96	₹ 1,39,197.00
	Quantity as per statement BC_19/1_S2					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 17.51					
8	Providing and laying of apron with cement concrete blocks (size 0.5 x 0.5 x 0.5 m) of size as per Table 1300.1 cast-in-situ and made with nominal mix of M-15 grade cement concrete as per drawing and technical specifications Clause 1301	Cum	69.60	₹ 5,192.70	₹ 5,873.98	₹ 4,08,829.00
	Quantity as per statement BC_19/1_S2					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 14.30					
10	Single bamboo spur and palasiding of whole 2nd class bamboo (Jati or Bethua) 65mm to 75mm dia closely packed & driven, including fitting and fixing with half bamboo kamis horizantally in three rows with the cane or tieing wire complete and struts 1500 mm apart longitudinally and providing brush wood as per drawing and technical specification clause 1302.5 of MORD a) Driven atlease 900mm below and 1800mm above the ground on average. (a) Driven at least 900mm below and 1800 mm above the ground on average.	Rm	100.00	₹ 616.20	₹ 697.05	₹ 69,705.00
	Quantity as per statement BC_19/1_2					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 16.45					
11	Serviceable empty cement bags	Each	13393.00	₹ 6.00	₹ 6.79	₹ 80,358.00
	Quantity as per statement BC_19/1_S2					
	(As per EE Dibrugarh WR Division NIQ No. EE/WRD/DBR/2021-22/G-131/1441 on Dt. 20/05/2021)					
12	Labour charge for laying and pitching earth filled cement bags including excavation and borrowing earth, breaking clods, filling in bags and supplying and stitching the mouth with jute sutli, etc. complete as directed. (cement bags will be supplied by the department free of cost). For borrowing earth from a distance beyond 30m. & up to 60m.	Each	13393.00	₹ 14.20		₹ 1,90,180.60
	Quantity as per statement BC_19/1_S2					
	(As per EE Dibrugarh WR Division NIQ No. EE/WRD/DBR/2021-22/G-131/1441 on Dt. 20/05/2021)					
				Total (Rs.)		₹ 90,01,335.60
13	Dewatering by 5 H.P. water pump including supply of necessary fuel, engine oil and pump operator etc complete..					₹ 90,013.36
	Quantity = 1% of total cost					
				Grand Total Rs.		₹ 90,91,348.96

Executive Engineer
DIbrugarh W.R. Division
Dibrugarh

Name of Project:- Integrated Water Resources Management of Buridehing basin

QUANTITY STATEMENT - SG-3 (For Sluice gates E-16/3)

Sl. No.	Particulars	Unit	No.	Dimensions			Quantity	Remarks
				L (M)	B (M)	H (M)		
1	Excavation for foundation							
	Box Culvert	Cum	1	12.60	6.70	1.00	84.42	
	Stilling Basin	Cum	1	10.00	8.65	3.00	259.50	
		Cum	1	4.00	5.70	1.50	34.20	
		Cum	1	4.00	11.60	1.50	69.60	
	U/S Floor	Cum	1	4.00	8.65	1.00	34.60	
	Apron U/S`& D/S	Cum	1	32.00	11.60	1.00	371.20	
	Toe walls	Cum	2	1.00	11.60	0.50	11.60	
	U/S Wing Walls	Cum	2	8.47	2.50	1.50	63.53	
	D/S Wing Walls	Cum	2	17.60	2.50	1.50	132.00	
	Cut-off Wall at botttom raft	Cum	2	0.50	11.60	3.00	34.80	
	Cut-off wall at edge of basin	Cum	1	0.50	11.60	4.00	23.20	
	Sub-Total						1118.65	
2	M-10 PCC for foundation and flooring							
	Flooring between U/S Wing Walls	Cum	1	4.00	8.65	1.00	34.60	
	Foundation for main culvert	Cum	1	12.60	5.70	1.00	71.82	
	U/S slope of Stiling Basin	Cum	1	4.00	3.10	1.00	12.40	
	Stilling Basin	Cum	1	10.00	6.05	1.00	60.50	
	D/S Slope of Stilling Basin	cum	1	4.00	9.00	1.00	36.00	
	Wing Wall U/S	Cum	2	8.47	2.50	0.15	6.35	
	Wing Wall D/S	Cum	2	17.60	2.50	0.15	13.20	
	Cut-off Wall at botttom raft	Cum	2	0.30	11.60	3.00	20.88	
	Cut-off wall at edge of basin	Cum	1	0.30	11.60	4.00	13.92	
	Sub-Total						269.67	
3	Quantity of M-20 concrete							
	Bottom raft	Cum	1	12.60	5.70	0.50	35.91	
	Abutments		2	13.35	0.50	2.77	36.91	
	Parapet		2	5.70	0.50	1.00	5.70	
	Hunch		4	12.60	0.15	0.15	0.57	
	Deck slab		1	12.60	5.70	0.50	35.91	
	Bottom Stem		2	17.60	3.00	0.55	58.08	Wing Wall D/S
	Abutments		2	17.60	0.55	3.00	58.08	
	Bottom Stem		2	8.47	3.10	0.55	28.88	Wing Wall U/S
	Abutments		2	8.47	0.55	2.04	19.01	
	Toe Wall		2	11.60	0.50	1.00	11.60	
			2	11.60	1.00	0.50	11.60	
	Chute Block		2	0.25	1.00	0.50	0.25	Stilling Basin
	Baffle Block		11	0.50	0.30	0.60	0.99	
	End Block		10	0.50	0.40	0.40	0.80	
						Total	304.29	
4	Total quantity of steel required (Fe415)							
		Kg	10mm	12mm	16mm	25mm		
	Main Culvert		209	39	329	325	902.75	
	Wing walls etc		33	855	614	1469	2971.85	
	Total Quantity in Kg						3874.60	
	Total Quantity in MT						38.75	
5	Total quantity of CC Blocks							
	U/S	Cum	1	4	11.6	0.5	23.20	
	D/S		1	8	11.6	0.5	46.40	
	Total Quantity in cum						69.60	

6	Quantity of boulders for Up stream & Down stream protection works.							
	U/S Apron		1.000	8.000	11.600	1.000	92.80	

		cum	2.000	12.500	2.000	1.000	50.00	
	D/S Apron		1.000	10.000	11.600	1.000	116.00	
			2.000	18.500	2.000	1.000	74.00	
			2.000	4.000	2.500	1.000	20.00	
Total Quantity in Cum							352.80	
7	Quantity of filter gravel 13mm to 19mm							
	U/S Apron	cum	1.000	4.000	11.600	0.500	23.20	
	D/S Apron		1.000	8.000	11.600	0.500	46.40	
Total Quantity in Cum							69.60	
8	Dewatering							
	Dewatering will be required for 3 months @ 8 hours per day 4 (six) Nos. of 5 HP pump set	hrs					2880.00	
Total Quantity in hours							2880.00	
9	Construction of whole bamboo single palisiding							
	U/S	RM	2.000	25.000			50.00	
	D/S		2.000	25.000			50.00	
Total Quantity in RM							100.00	
10	Earth filled cement bags							
	U/S	cum	1.000	25.000	2.500	3.000	187.50	
	D/S		1.000	25.000	2.500	3.000	187.50	
Total Quantity in cum							375.00	
Total Quantity in bags (0.028cum/bag)							13393.00	

Executive Engineer
DIbrugarh W.R. Division
Dibrugarh

Name of Project:- Integrated Water Resources Management of Buridehing basin

SUB-EST - SG-4 (For Sluice gates E-15/4, E-16/4, E-13/2, E-13/3, E-23/1, E-23/2, E-24/1, E-24/2, E-24/3 & E-25/3)

Items	Particulars	Unit	Quantity	Rate (Rs.) as per SR of AWRD 2020-2021 (Rural Roads)	Rate considering 12% GST & 1% Labour Cess	Amount (Rs.)
1	Earthwork in excavation for structures as per drawing and technical specifications Clause 305.1 including setting out, construction of shoring and bracing, removal of stumps and other deleterious material and disposal upto a lead of 50 m, dressing of sides and bottom and backfilling in trenches with excavated suitable material. I Ordinary soil Upto 3 m depth Quantity as per statement BC_19/1_S1 **Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 11.1 (I)**	Cum	257.53	₹ 113.00	₹ 127.83	₹ 32,920.00
2	Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and technical specifications Clause 802, 803, 1202 & 1203 A With crushed Stone II P.C.C grade M 15 Nominal mix (1:2.5:5)	Cum	42.55	₹ 5,216.10	₹ 5,900.45	₹ 2,51,064.00
	Quantity as per statement BC_19/1_S1					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 11.4 A(II)					
3	Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and technical specifications Clause 802, 803, 1202 & 1203 A With crushed Stone IV R.C.C Grade M20	Cum	85.18	₹ 6,259.20	₹ 7,080.41	₹ 6,03,109.00
	Quantity as per statement BC_19/1_S1					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 11.4 A(IV)					
4	Supplying, fitting and placing TMT (Fe-500 D) reinforcement bar (From Primary Producer: TATA/SAIL/Esser Steel/ Jindal steel/Shyam steel/RINL) in foundation complete as per drawings and technical specifications Clauses 1000 and 1202	t	11.860	₹ 56,239.00	₹ 63,617.56	₹ 7,54,504.00
	Quantity as per statement BC_19/1_S1					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 11.7					
5	Providing and laying boulder apron for bed protection with stone boulders of minimum size and weight as per Table 1300.1, no fragment weighing less than 25 kg laid dry complete as per drawing and technical specifications Clause 1301	Cum	152.00	₹ 1,646.80	₹ 1,862.86	₹ 2,83,155.00
	Quantity as per statement BC_19/1_S2					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 14.1					
6	Providing and laying of Filter media with granular materials/stone crushed aggregates satisfying the requirements laid down in clause 2504.2.2. of MoRTH specifications to a thickness of not less than 600 mm with smaller size towards the soil and bigger size toeards the wall and provided over the entire surfaces behind the abutement, wing wall and return wall to the full height compacted to firm condition complete as per drawing and technical specification.	Cum	27.00	₹ 1,768.00	₹ 1,999.96	₹ 53,999.00

Items	Particulars	Unit	Quantity	Rate (Rs.) as per SR of AWRD 2020-2021 (Rural Roads)	Rate considering 12% GST & 1% Labour Cess	Amount (Rs.)
	Quantity as per statement BC_19/1_S2					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 17.51					
7	Providing and laying of apron with cement concrete blocks (size 0.5 x 0.5 x 0.5 m) of size as per Table 1300.1 cast-in-situ and made with nominal mix of M-15 grade cement concrete as per drawing and technical specifications Clause 1301	Cum	27.00	₹ 5,192.70	₹ 5,873.98	₹ 1,58,597.00
	Quantity as per statement BC_19/1_S2					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 14.30					
8	Single bamboo spur and palasiding of whole 2nd class bamboo (Jati or Bethua) 65mm to 75mm dia closely packed & driven, including fitting and fixing with half bamboo kamis horizantally in three rows with the cane or tieing wire complete and struts 1500 mm apart longitudinally and providing brush wood as per drawing and technical specification clause 1302.5 of MORD a) Driven atlease 900mm below and 1800mm above the ground on average. (a) Driven at least 900mm below and 1800 mm above the ground on average.	Rm	100.00	₹ 616.20	₹ 697.05	₹ 69,705.00
	Quantity as per statement BC_19/1_2					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 16.45					
9	Serviceable empty cement bags	Each	26786.00	₹ 6.00	₹ 6.79	₹ 1,60,716.00
	Quantity as per statement BC_19/1_S2					
	(As per EE Dibrugarh WR Division NIQ No. EE/WRD/DBR/2021-22/G-131/1441 on Dt. 20/05/2021)					
10	Labour charge for laying and pitching earth filled cement bags including excavation and borrowing earth, breaking clods, filling in bags and supplying and stitching the mouth with jute sutli, etc. complete as directed. (cement bags will be supplied by the department free of cost). For borrowing earth from a distance beyond 30m. & up to 60m.	Each	26786.00	₹ 14.20		₹ 3,80,361.20
	Quantity as per statement BC_19/1_S2					
	(As per EE Dibrugarh WR Division NIQ No. EE/WRD/DBR/2021-22/G-131/1441 on Dt. 20/05/2021)					
				Total (Rs.)		₹ 27,48,130.20
11	Dewatering by 5 H.P. water pump including supply of necessary fuel, engine oil and pump operator etc complete..					₹ 27,481.30
	Quantity = 1% of total cost					
				Grand Total Rs.		₹ 27,75,611.50

Executive Engineer
DIbrugarh W.R. Division
Dibrugarh

Name of Project:- Integrated Water Resources Management of Buridehing basin

Qty St. - SG-4 (For Sluice gates E-15/4, E-16/4, E-13/2, E-13/3, E-23/1, E-23/2, E-24/1, E-24/2, E-24/3 & E-25/3)

Sl. No.	Particulars	Unit	No.	Dimensions			Quantity	Remarks
				L (M)	B (M)	H (M)		
1	Excavation for foundation							
	Box Culvert	Cum	1	3.00	4.10	1.00	12.30	
	U/S Floor	Cum	1	4.00	6.05	1.00	24.20	
	Apron U/S`& D/S	Cum	1	16.00	9.00	1.00	144.00	
	Toe walls	Cum	2	1.00	9.00	0.50	9.00	
	U/S Wing Walls	Cum	2	8.47	2.50	1.50	63.53	
	Cut-off Wall at u/s edge	Cum	1	0.50	9.00	1.00	4.50	
Sub-Total							257.53	
2	M-10 PCC for foundation and flooring							
	Flooring Between U/S Wing Walls	Cum	1	4.00	6.05	1.00	24.20	
	Foundation for main culvert	Cum	1	3.00	3.10	1.00	9.30	
	Wing Wall U/S	Cum	2	8.47	2.50	0.15	6.35	
	Cut-off Wall at u/s edge	Cum	1	0.30	9.00	1.00	2.70	
Sub-Total							42.55	
3	Quantity of M-20 concrete							
	Bottom raft	Cum	1	3.00	3.10	0.50	4.65	
	Abutments		2	3.00	0.50	2.77	8.30	
	Parapet		1	3.10	0.50	1.00	1.55	
	Hunch		4	3.00	0.15	0.15	0.14	
	Deck slab		1	3.00	3.10	0.50	4.65	
	Bottom Stem		2	8.47	3.10	0.55	28.88	Wing Wall U/S
	Abutments		2	8.47	0.55	2.04	19.01	
	Toe Wall		2	9.00	0.50	1.00	9.00	
			2	9.00	1.00	0.50	9.00	
						Total	85.18	
4	Total quantity of steel required (Fe415)							
		Kg	10mm	12mm	16mm	25mm		
	Main Culvert		35	7	55	54	151.43	
	Wing walls etc		12	298	214	511	1034.47	
Total Quantity in Kg							1185.90	
Total Quantity in MT							11.86	
5	Total quantity of CC Blocks							
	U/S	Cum	1	2	9	0.5	9.00	
	D/S		1	4	9	0.5	18.00	
Total Quantity in cum							27.00	

6	Quantity of boulders for Up stream & Down stream protection works.							
	U/S Apron	cum	1.000	4.000	9.000	1.000	36.00	
			2.000	6.500	2.000	1.000	26.00	
	D/S Apron		1.000	4.000	9.000	1.000	36.00	
			2.000	8.500	2.000	1.000	34.00	
			2.000	4.000	2.500	1.000	20.00	
Total Quantity in Cum							152.00	
7	Quantity of filter gravel 13mm to 19mm							
	U/S Apron	cum	1.000	2.000	9.000	0.500	9.00	
	D/S Apron		1.000	4.000	9.000	0.500	18.00	
Total Quantity in Cum							27.00	
8	Dewatering							
	Dewatering will be required for 1.5 months @ 8 hours per day 4 (six) Nos. of 5 HP pump set	hrs					1440.00	

Total Quantity in hours							1440.00	
9	Construction of whole bamboo single palisiding							
	U/S	RM	2.000	25.000			50.00	
	D/S		2.000	25.000			50.00	
Total Quantity in RM							100.00	
10	Earth filled cement bags							
	U/S	cum	1.000	50.000	2.500	3.000	375.00	
	D/S		1.000	50.000	2.500	3.000	375.00	
Total Quantity in cum							750.00	
Total Quantity in bags (0.028cum/bag)							26786.00	

Executive Engineer
DIbrugarh W.R. Division
Dibrugarh

Name of Project:- Integrated Water Resources Management of Buridehing basin

SUB-EST - SG-5 (For Sluice gates E-13/1, E-14/1, E-14/4, E-14/5, E-15/3, E-16/5, E-25/1 & E-25/2)

Items	Particulars	Unit	Quantity	Rate (Rs.) as per SR of AWRD 2020-2021 (Rural Roads)	Rate considering 12% GST & 1% Labour Cess	Amount (Rs.)
1	Earthwork in excavation for structures as per drawing and technical specifications Clause 305.1 including setting out, construction of shoring and bracing, removal of stumps and other deleterious material and disposal upto a lead of 50 m, dressing of sides and bottom and backfilling in trenches with excavated suitable material. I Ordinary soil Upto 3 m depth Quantity as per statement BC_19/1_S1 **Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 11.1 (I)**	Cum	275.53	₹ 113.00	₹ 127.83	₹ 35,221.00
2	Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and technical specifications Clause 802, 803, 1202 & 1203 A With crushed Stone II P.C.C grade M 15 Nominal mix (1:2.5:5)	Cum	42.55	₹ 5,216.10	₹ 5,900.45	₹ 2,51,064.00
	Quantity as per statement BC_19/1_S1					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 11.4 A(II)					
3	Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and technical specifications Clause 802, 803, 1202 & 1203 A With crushed Stone IV R.C.C Grade M20	Cum	85.18	₹ 6,259.20	₹ 7,080.41	₹ 6,03,109.00
	Quantity as per statement BC_19/1_S1					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 11.4 A(IV)					
4	Supplying, fitting and placing TMT (Fe-500 D) reinforcement bar (From Primary Producer: TATA/SAIL/Esser Steel/ Jindal steel/Shyam steel/RINL) in foundation complete as per drawings and technical specifications Clauses 1000 and 1202	t	11.860	₹ 56,239.00	₹ 63,617.56	₹ 7,54,504.00
	Quantity as per statement BC_19/1_S1					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 11.7					
5	Providing and laying boulder apron for bed protection with stone boulders of minimum size and weight as per Table 1300.1, no fragment weighing less than 25 kg laid dry complete as per drawing and technical specifications Clause 1301	Cum	178.00	₹ 1,646.80	₹ 1,862.86	₹ 3,31,589.00
	Quantity as per statement BC_19/1_S2					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 14.1					

Items	Particulars	Unit	Quantity	Rate (Rs.) as per SR of AWRD 2020-2021 (Rural Roads)	Rate considering 12% GST & 1% Labour Cess	Amount (Rs.)
6	Providing and laying of Filter media with granular materials/stone crushed aggregates satisfying the requirements laid down in clause 2504.2.2. of MoRTH specifications to a thickness of not less than 600 mm with smaller size towards the soil and bigger size toeards the wall and provided over the entire surfaces behind the abutement, wing wall and return wall to the full height compacted to firm condition complete as per drawing and technical specification.	Cum	27.00	₹ 1,768.00	₹ 1,999.96	₹ 53,999.00
	Quantity as per statement BC_19/1_S2					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 17.51					
7	Providing and laying of apron with cement concrete blocks (size 0.5 x 0.5 x 0.5 m) of size as per Table 1300.1 cast-in-situ and made with nominal mix of M-15 grade cement concrete as per drawing and technical specifications Clause 1301	Cum	27.00	₹ 5,192.70	₹ 5,873.98	₹ 1,58,597.00
	Quantity as per statement BC_19/1_S2					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 14.30					
8	Single bamboo spur and palasiding of whole 2nd class bamboo (Jati or Bethua) 65mm to 75mm dia closely packed & driven, including fitting and fixing with half bamboo kamis horizantally in three rows with the cane or tieing wire complete and struts 1500 mm apart longitudinally and providing brush wood as per drawing and technical specification clause 1302.5 of MORD a) Driven atlease 900mm below and 1800mm above the ground on average. (a) Driven at least 900mm below and 1800 mm above the ground on average.	Rm	100.00	₹ 616.20	₹ 697.05	₹ 69,705.00
	Quantity as per statement BC_19/1_2					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 16.45					
9	Serviceable empty cement bags	Each	26786.00	₹ 6.00	₹ 6.79	₹ 1,60,716.00
	Quantity as per statement BC_19/1_S2					
	(As per EE Dibrugarh WR Division NIQ No. EE/WRD/DBR/2021-22/G-131/1441 on Dt. 20/05/2021)					
10	Labour charge for laying and pitching earth filled cement bags including excavation and borrowing earth, breaking clods, filling in bags and supplying and stitching the mouth with jute sutli, etc. complete as directed. (cement bags will be supplied by the department free of cost). For borrowing earth from a distance beyond 30m. & up to 60m.	Each	26786.00	₹ 14.20		₹ 3,80,361.20
	Quantity as per statement BC_19/1_S2					
	(As per EE Dibrugarh WR Division NIQ No. EE/WRD/DBR/2021-22/G-131/1441 on Dt. 20/05/2021)					
				Total (Rs.)		₹ 27,98,865.20
11	Dewatering by 5 H.P. water pump including supply of necessary fuel, engine oil and pump operator etc complete..					₹ 27,988.65
	Quantity = 1% of total cost					
				Grand Total Rs.		₹ 28,26,853.85

Executive Engineer
DIbrugarh W.R. Division
Dibrugarh

Qty St. - SG-5 (For Sluice gates E-13/1, E-14/1, E-14/4, E-14/5, E-15/3, E-16/5, E-25/1 & E-25/2)

Sl. No.	Particulars	Unit	No.	Dimensions			Quantity	Remarks
				L (M)	B (M)	H (M)		
1	Excavation for foundation							
	Box Culvert	Cum	1	3.00	4.10	1.00	12.30	
	U/S Floor	Cum	1	4.00	6.05	1.00	24.20	
	Apron U/S`& D/S	Cum	1	18.00	9.00	1.00	162.00	
	Toe walls	Cum	2	1.00	9.00	0.50	9.00	
	U/S Wing Walls	Cum	2	8.47	2.50	1.50	63.53	
	Cut-off Wall at u/s edge	Cum	1	0.50	9.00	1.00	4.50	
Sub-Total							275.53	
2	M-10 PCC for foundation and flooring							
	Flooring Between U/S Wing Walls	Cum	1	4.00	6.05	1.00	24.20	
	Foundation for main culvert	Cum	1	3.00	3.10	1.00	9.30	
	Wing Wall U/S	Cum	2	8.47	2.50	0.15	6.35	
	Cut-off Wall at u/s edge	Cum	1	0.30	9.00	1.00	2.70	
Sub-Total							42.55	
3	Quantity of M-20 concrete							
	Bottom raft	Cum	1	3.00	3.10	0.50	4.65	
	Abutments		2	3.00	0.50	2.77	8.30	
	Parapet		1	3.10	0.50	1.00	1.55	
	Hunch		4	3.00	0.15	0.15	0.14	
	Deck slab		1	3.00	3.10	0.50	4.65	
	Bottom Stem		2	8.47	3.10	0.55	28.88	Wing Wall U/S
	Abutments		2	8.47	0.55	2.04	19.01	
	Toe Wall		2	9.00	0.50	1.00	9.00	
			2	9.00	1.00	0.50	9.00	
						Total	85.18	
4	Total quantity of steel required (Fe415)							
		Kg	10mm	12mm	16mm	25mm		
	Main Culvert		35	7	55	54	151.43	
	Wing walls etc		12	298	214	511	1034.47	
Total Quantity in Kg							1185.90	
Total Quantity in MT							11.86	
5	Total quantity of CC Blocks							
	U/S	Cum	1	2	9	0.5	9.00	
	D/S		1	4	9	0.5	18.00	
Total Quantity in cum							27.00	

6	Quantity of boulders for Up stream & Down stream protection works.							
	U/S Apron	cum	1.000	4.000	9.000	1.000	36.00	
			2.000	6.500	2.000	1.000	26.00	
	D/S Apron		1.000	6.000	9.000	1.000	54.00	
			2.000	10.500	2.000	1.000	42.00	
			2.000	4.000	2.500	1.000	20.00	
Total Quantity in Cum							178.00	
7	Quantity of filter gravel 13mm to 19mm							
	U/S Apron	cum	1.000	2.000	9.000	0.500	9.00	
	D/S Apron		1.000	4.000	9.000	0.500	18.00	
Total Quantity in Cum							27.00	
8	Dewatering							
	Dewatering will be required for 1.5 months @ 8 hours per day 4 (six) Nos. of 5 HP pump set	hrs					1440.00	

Total Quantity in hours							1440.00	
9	Construction of whole bamboo single palisiding							
	U/S	RM	2.000	25.000			50.00	
	D/S		2.000	25.000			50.00	
Total Quantity in RM							100.00	
10	Earth filled cement bags							
	U/S	cum	1.000	50.000	2.500	3.000	375.00	
	D/S		1.000	50.000	2.500	3.000	375.00	
Total Quantity in cum							750.00	
Total Quantity in bags (0.028cum/bag)							26786.00	

Executive Engineer
DIbrugarh W.R. Division
Dibrugarh

Name of Project:- Integrated Water Resources Management of Buridehing basin

SUB-EST - SG-6 (For Sluice gates E-14/3 & E-15/2)

Items	Particulars	Unit	Quantity	Rate (Rs.) as per SR of AWRD 2020-2021 (Rural Roads)	Rate considering 12% GST & 1% Labour Cess	Amount (Rs.)
1	Earthwork in excavation for structures as per drawing and technical specifications Clause 305.1 including setting out, construction of shoring and bracing, removal of stumps and other deleterious material and disposal upto a lead of 50 m, dressing of sides and bottom and backfilling in trenches with excavated suitable material. I Ordinary soil Upto 3 m depth Quantity as per statement BC_19/1_S1 **Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 11.1 (I)**	Cum	293.53	₹ 113.00	₹ 127.83	₹ 37,522.00
2	Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and technical specifications Clause 802, 803, 1202 & 1203 A With crushed Stone II P.C.C grade M 15 Nominal mix (1:2.5:5)	Cum	42.55	₹ 5,216.10	₹ 5,900.45	₹ 2,51,064.00
	Quantity as per statement BC_19/1_S1					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 11.4 A(II)					
3	Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and technical specifications Clause 802, 803, 1202 & 1203 A With crushed Stone IV R.C.C Grade M20	Cum	85.18	₹ 6,259.20	₹ 7,080.41	₹ 6,03,109.00
	Quantity as per statement BC_19/1_S1					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 11.4 A(IV)					
4	Supplying, fitting and placing TMT (Fe-500 D) reinforcement bar (From Primary Producer: TATA/SAIL/Esser Steel/ Jindal steel/Shyam steel/RINL) in foundation complete as per drawings and technical specifications Clauses 1000 and 1202	t	11.860	₹ 56,239.00	₹ 63,617.56	₹ 7,54,504.00
	Quantity as per statement BC_19/1_S1					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 11.7					
5	Providing and laying boulder apron for bed protection with stone boulders of minimum size and weight as per Table 1300.1, no fragment weighing less than 25 kg laid dry complete as per drawing and technical specifications Clause 1301	Cum	204.00	₹ 1,646.80	₹ 1,862.86	₹ 3,80,023.00
	Quantity as per statement BC_19/1_S2					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 14.1					

Items	Particulars	Unit	Quantity	Rate (Rs.) as per SR of AWRD 2020-2021 (Rural Roads)	Rate considering 12% GST & 1% Labour Cess	Amount (Rs.)
6	Providing and laying of Filter media with granular materials/stone crushed aggregates satisfying the requirements laid down in clause 2504.2.2. of MoRTH specifications to a thickness of not less than 600 mm with smaller size towards the soil and bigger size toeards the wall and provided over the entire surfaces behind the abutement, wing wall and return wall to the full height compacted to firm condition complete as per drawing and technical specification.	Cum	27.00	₹ 1,768.00	₹ 1,999.96	₹ 53,999.00
	Quantity as per statement BC_19/1_S2					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 17.51					
7	Providing and laying of apron with cement concrete blocks (size 0.5 x 0.5 x 0.5 m) of size as per Table 1300.1 cast-in-situ and made with nominal mix of M-15 grade cement concrete as per drawing and technical specifications Clause 1301	Cum	27.00	₹ 5,192.70	₹ 5,873.98	₹ 1,58,597.00
	Quantity as per statement BC_19/1_S2					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 14.30					
8	Single bamboo spur and palasiding of whole 2nd class bamboo (Jati or Bethua) 65mm to 75mm dia closely packed & driven, including fitting and fixing with half bamboo kamis horizantally in three rows with the cane or tieing wire complete and struts 1500 mm apart longitudinally and providing brush wood as per drawing and technical specification clause 1302.5 of MORD a) Driven atlease 900mm below and 1800mm above the ground on average. (a) Driven at least 900mm below and 1800 mm above the ground on average.	Rm	100.00	₹ 616.20	₹ 697.05	₹ 69,705.00
	Quantity as per statement BC_19/1_2					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 16.45					
9	Serviceable empty cement bags	Each	26786.00	₹ 6.00	₹ 6.79	₹ 1,60,716.00
	Quantity as per statement BC_19/1_S2					
	(As per EE Dibrugarh WR Division NIQ No. EE/WRD/DBR/2021-22/G-131/1441 on Dt. 20/05/2021)					
10	Labour charge for laying and pitching earth filled cement bags including excavation and borrowing earth, breaking clods, filling in bags and supplying and stitching the mouth with jute sutli, etc. complete as directed. (cement bags will be supplied by the department free of cost). For borrowing earth from a distance beyond 30m. & up to 60m.	Each	26786.00	₹ 14.20		₹ 3,80,361.20
	Quantity as per statement BC_19/1_S2					
	(As per EE Dibrugarh WR Division NIQ No. EE/WRD/DBR/2021-22/G-131/1441 on Dt. 20/05/2021)					
				Total (Rs.)		₹ 28,49,600.20
11	Dewatering by 5 H.P. water pump including supply of necessary fuel, engine oil and pump operator etc complete..					₹ 28,496.00
	Quantity = 1% of total cost					
	(As per WRD SR 2018-19, Item No.9.02)					
				Grand Total Rs.		₹ 28,78,096.20

Executive Engineer
DIbrugarh W.R. Division
Dibrugarh

Qty St. - SG-6 (For Sluice gates E-14/3 & E-15/2)

Sl. No.	Particulars	Unit	No.	Dimensions			Quantity	Remarks
				L (M)	B (M)	H (M)		
1	Excavation for foundation							
	Box Culvert	Cum	1	3.00	4.10	1.00	12.30	
	U/S Floor	Cum	1	4.00	6.05	1.00	24.20	
	Apron U/S`& D/S	Cum	1	20.00	9.00	1.00	180.00	
	Toe walls	Cum	2	1.00	9.00	0.50	9.00	
	U/S Wing Walls	Cum	2	8.47	2.50	1.50	63.53	
	Cut-off Wall at u/s edge	Cum	1	0.50	9.00	1.00	4.50	
Sub-Total							293.53	
2	M-10 PCC for foundation and flooring							
	Flooring Between U/S Wing Walls	Cum	1	4.00	6.05	1.00	24.20	
	Foundation for main culvert	Cum	1	3.00	3.10	1.00	9.30	
	Wing Wall U/S	Cum	2	8.47	2.50	0.15	6.35	
	Cut-off Wall at u/s edge	Cum	1	0.30	9.00	1.00	2.70	
Sub-Total							42.55	
3	Quantity of M-20 concrete							
	Bottom raft	Cum	1	3.00	3.10	0.50	4.65	
	Abutments		2	3.00	0.50	2.77	8.30	
	Parapet		1	3.10	0.50	1.00	1.55	
	Hunch		4	3.00	0.15	0.15	0.14	
	Deck slab		1	3.00	3.10	0.50	4.65	
	Bottom Stem		2	8.47	3.10	0.55	28.88	Wing Wall U/S
	Abutments		2	8.47	0.55	2.04	19.01	
	Toe Wall		2	9.00	0.50	1.00	9.00	
			2	9.00	1.00	0.50	9.00	
						Total	85.18	
4	Total quantity of steel required (Fe415)							
		Kg	10mm	12mm	16mm	25mm		
	Main Culvert		35	7	55	54	151.43	
	Wing walls etc		12	298	214	511	1034.47	
Total Quantity in Kg							1185.90	
Total Quantity in MT							11.86	
5	Total quantity of CC Blocks							
	U/S	Cum	1	2	9	0.5	9.00	
	D/S		1	4	9	0.5	18.00	
Total Quantity in cum							27.00	

6	Quantity of boulders for Up stream & Down stream protection works.							
	U/S Apron	cum	1.000	4.000	9.000	1.000	36.00	
			2.000	6.500	2.000	1.000	26.00	
	D/S Apron		1.000	8.000	9.000	1.000	72.00	
			2.000	12.500	2.000	1.000	50.00	
			2.000	4.000	2.500	1.000	20.00	
Total Quantity in Cum							204.00	
7	Quantity of filter gravel 13mm to 19mm							
	U/S Apron	cum	1.000	2.000	9.000	0.500	9.00	
	D/S Apron		1.000	4.000	9.000	0.500	18.00	
Total Quantity in Cum							27.00	
8	Dewatering							
	Dewatering will be required for 1.5 months @ 8 hours per day 4 (six) Nos. of 5 HP pump set	hrs					1440.00	

Total Quantity in hours							1440.00	
9	Construction of whole bamboo single palisiding							
	U/S	RM	2.000	25.000			50.00	
	D/S		2.000	25.000			50.00	
Total Quantity in RM							100.00	
10	Earth filled cement bags							
	U/S	cum	1.000	50.000	2.500	3.000	375.00	
	D/S		1.000	50.000	2.500	3.000	375.00	
Total Quantity in cum							750.00	
Total Quantity in bags (0.028cum/bag)							26786.00	

Executive Engineer
DIbrugarh W.R. Division
Dibrugarh

Name of Project:- Integrated Water Resources Management of Buridehing basin

SUB-EST - SG-7 (For Sluice gates E-15/1 & E-27/1)

Items	Particulars	Unit	Quantity	Rate (Rs.) as per SR of AWRD 2020-2021 (Rural Roads)	Rate considering 12% GST & 1% Labour Cess	Amount (Rs.)
1	Earthwork in excavation for structures as per drawing and technical specifications Clause 305.1 including setting out, construction of shoring and bracing, removal of stumps and other deleterious material and disposal upto a lead of 50 m, dressing of sides and bottom and backfilling in trenches with excavated suitable material. I Ordinary soil Upto 3 m depth Quantity as per statement BC_19/1_S1 **Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 11.1 (I)**	Cum	383.53	₹ 113.00	₹ 127.83	₹ 49,027.00
2	Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and technical specifications Clause 802, 803, 1202 & 1203 A With crushed Stone II P.C.C grade M 15 Nominal mix (1:2.5:5)	Cum	42.55	₹ 5,216.10	₹ 5,900.45	₹ 2,51,064.00
	Quantity as per statement BC_19/1_S1					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 11.4 A(II)					
3	Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and technical specifications Clause 802, 803, 1202 & 1203 A With crushed Stone IV R.C.C Grade M20	Cum	85.18	₹ 6,259.20	₹ 7,080.41	₹ 6,03,109.00
	Quantity as per statement BC_19/1_S1					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 11.4 A(IV)					
4	Supplying, fitting and placing TMT (Fe-500 D) reinforcement bar (From Primary Producer: TATA/SAIL/Esser Steel/ Jindal steel/Shyam steel/RINL) in foundation complete as per drawings and technical specifications Clauses 1000 and 1202	t	11.860	₹ 56,239.00	₹ 63,617.56	₹ 7,54,504.00
	Quantity as per statement BC_19/1_S1					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 11.7					
5	Providing and laying boulder apron for bed protection with stone boulders of minimum size and weight as per Table 1300.1, no fragment weighing less than 25 kg laid dry complete as per drawing and technical specifications Clause 1301	Cum	280.00	₹ 1,646.80	₹ 1,862.86	₹ 5,21,601.00
	Quantity as per statement BC_19/1_S2					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 14.1					

Items	Particulars	Unit	Quantity	Rate (Rs.) as per SR of AWRD 2020-2021 (Rural Roads)	Rate considering 12% GST & 1% Labour Cess	Amount (Rs.)
6	Providing and laying of Filter media with granular materials/stone crushed aggregates satisfying the requirements laid down in clause 2504.2.2. of MoRTH specifications to a thickness of not less than 600 mm with smaller size towards the soil and bigger size toeards the wall and provided over the entire surfaces behind the abutement, wing wall and return wall to the full height compacted to firm condition complete as per drawing and technical specification.	Cum	54.00	₹ 1,768.00	₹ 1,999.96	₹ 1,07,998.00
	Quantity as per statement BC_19/1_S2					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 17.51					
7	Providing and laying of apron with cement concrete blocks (size 0.5 x 0.5 x 0.5 m) of size as per Table 1300.1 cast-in-situ and made with nominal mix of M-15 grade cement concrete as per drawing and technical specifications Clause 1301	Cum	54.00	₹ 5,192.70	₹ 5,873.98	₹ 3,17,195.00
	Quantity as per statement BC_19/1_S2					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 14.30					
8	Single bamboo spur and palasiding of whole 2nd class bamboo (Jati or Bethua) 65mm to 75mm dia closely packed & driven, including fitting and fixing with half bamboo kamis horizantally in three rows with the cane or tieing wire complete and struts 1500 mm apart longitudinally and providing brush wood as per drawing and technical specification clause 1302.5 of MORD a) Driven atlease 900mm below and 1800mm above the ground on average. (a) Driven at least 900mm below and 1800 mm above the ground on average.	Rm	100.00	₹ 616.20	₹ 697.05	₹ 69,705.00
	Quantity as per statement BC_19/1_2					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 16.45					
9	Serviceable empty cement bags	Each	26786.00	₹ 6.00	₹ 6.79	₹ 1,60,716.00
	Quantity as per statement BC_19/1_S2					
	(As per EE Dibrugarh WR Division NIQ No. EE/WRD/DBR/2021-22/G-131/1441 on Dt. 20/05/2021)					
10	Labour charge for laying and pitching earth filled cement bags including excavation and borrowing earth, breaking clods, filling in bags and supplying and stitching the mouth with jute sutli, etc. complete as directed. (cement bags will be supplied by the department free of cost). For borrowing earth from a distance beyond 30m. & up to 60m.	Each	26786.00	₹ 14.20		₹ 3,80,361.20
	Quantity as per statement BC_19/1_S2					
	(As per EE Dibrugarh WR Division NIQ No. EE/WRD/DBR/2021-22/G-131/1441 on Dt. 20/05/2021)					
				Total (Rs.)		₹ 32,15,280.20
11	Dewatering by 5 H.P. water pump including supply of necessary fuel, engine oil and pump operator etc complete..					₹ 32,152.80
	Quantity = 1% of total cost					
	(As per WRD SR 2018-19, Item No.9.02)					
				Grand Total Rs.		₹ 32,47,433.00

Executive Engineer
DIbrugarh W.R. Division
Dibrugarh

Qty St. - SG-7 (For Sluice gates E-15/1 & E-27/1)

Sl. No.	Particulars	Unit	No.	Dimensions			Quantity	Remarks
				L (M)	B (M)	H (M)		
1	Excavation for foundation							
	Box Culvert	Cum	1	3.00	4.10	1.00	12.30	
	U/S Floor	Cum	1	4.00	6.05	1.00	24.20	
	Apron U/S`& D/S	Cum	1	30.00	9.00	1.00	270.00	
	Toe walls	Cum	2	1.00	9.00	0.50	9.00	
	U/S Wing Walls	Cum	2	8.47	2.50	1.50	63.53	
	Cut-off Wall at u/s edge	Cum	1	0.50	9.00	1.00	4.50	
Sub-Total							383.53	
2	M-10 PCC for foundation and flooring							
	Flooring Between U/S Wing Walls	Cum	1	4.00	6.05	1.00	24.20	
	Foundation for main culvert	Cum	1	3.00	3.10	1.00	9.30	
	Wing Wall U/S	Cum	2	8.47	2.50	0.15	6.35	
	Cut-off Wall at u/s edge	Cum	1	0.30	9.00	1.00	2.70	
Sub-Total							42.55	
3	Quantity of M-20 concrete							
	Bottom raft	Cum	1	3.00	3.10	0.50	4.65	
	Abutments		2	3.00	0.50	2.77	8.30	
	Parapet		1	3.10	0.50	1.00	1.55	
	Hunch		4	3.00	0.15	0.15	0.14	
	Deck slab		1	3.00	3.10	0.50	4.65	
	Bottom Stem		2	8.47	3.10	0.55	28.88	Wing Wall U/S
	Abutments		2	8.47	0.55	2.04	19.01	
	Toe Wall		2	9.00	0.50	1.00	9.00	
			2	9.00	1.00	0.50	9.00	
						Total	85.18	
4	Total quantity of steel required (Fe415)							
		Kg	10mm	12mm	16mm	25mm		
	Main Culvert		35	7	55	54	151.43	
	Wing walls etc		12	298	214	511	1034.47	
Total Quantity in Kg							1185.90	
Total Quantity in MT							11.86	
5	Total quantity of CC Blocks							
	U/S	Cum	1	4	9	0.5	18.00	
	D/S		1	8	9	0.5	36.00	
Total Quantity in cum							54.00	

6	Quantity of boulders for Up stream & Down stream protection works.							
	U/S Apron	cum	1.000	6.000	9.000	1.000	54.00	
			2.000	10.500	2.000	1.000	42.00	
	D/S Apron		1.000	10.000	9.000	1.000	90.00	
			2.000	18.500	2.000	1.000	74.00	
			2.000	4.000	2.500	1.000	20.00	
Total Quantity in Cum							280.00	
7	Quantity of filter gravel 13mm to 19mm							
	U/S Apron	cum	1.000	4.000	9.000	0.500	18.00	
	D/S Apron		1.000	8.000	9.000	0.500	36.00	
Total Quantity in Cum							54.00	
8	Dewatering							
	Dewatering will be required for 1.5 months @ 8 hours per day 4 (six) Nos. of 5 HP pump set	hrs					1440.00	

Total Quantity in hours							1440.00	
9	Construction of whole bamboo single palisiding							
	U/S	RM	2.000	25.000			50.00	
	D/S		2.000	25.000			50.00	
Total Quantity in RM							100.00	
10	Earth filled cement bags							
	U/S	cum	1.000	50.000	2.500	3.000	375.00	
	D/S		1.000	50.000	2.500	3.000	375.00	
Total Quantity in cum							750.00	
Total Quantity in bags (0.028cum/bag)							26786.00	

Executive Engineer
DIbrugarh W.R. Division
Dibrugarh

Name of Project:- Integrated Water Resources Management of Buridehing basin

SUB-ESTIMATE - SG-8 (For Sluice gates E-14/2, E-25/4 & E-25/5)

Items	Particulars	Unit	Quantity	Rate (Rs.) as per SR of AWRD 2020-2021 (Rural Roads)	Rate considering 12% GST & 1% Labour Cess	Amount (Rs.)
1	Earthwork in excavation for structures as per drawing and technical specifications Clause 305.1 including setting out, construction of shoring and bracing, removal of stumps and other deleterious material and disposal upto a lead of 50 m, dressing of sides and bottom and backfilling in trenches with excavated suitable material. I Ordinary soil Upto 3 m depth Quantity as per statement BC_19/1_S1 **Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 11.1 (I)**	Cum	599.63	₹ 113.00	₹ 127.83	₹ 76,651.00
2	Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and technical specifications Clause 802, 803, 1202 & 1203 A With crushed Stone II P.C.C grade M 15 Nominal mix (1:2.5:5)	Cum	81.93	₹ 5,216.10	₹ 5,900.45	₹ 4,83,424.00
	Quantity as per statement BC_19/1_S1					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 11.4 A(II)					
3	Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and technical specifications Clause 802, 803, 1202 & 1203 A With crushed Stone IV R.C.C Grade M20	Cum	101.55	₹ 6,259.20	₹ 7,080.41	₹ 7,19,016.00
	Quantity as per statement BC_19/1_S1					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 11.4 A(IV)					
4	Supplying, fitting and placing TMT (Fe-500 D) reinforcement bar (From Primary Producer: TATA/SAIL/Esser Steel/ Jindal steel/Shyam steel/RINL) in foundation complete as per drawings and technical	t	13.550	₹ 56,239.00	₹ 63,617.56	₹ 8,62,018.00
	Quantity as per statement BC_19/1_S1					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 11.7					
5	Providing and laying boulder apron for bed protection with stone boulders of minimum size and weight as per Table 1300.1, no fragment weighing less than 25 kg laid dry complete as per drawing and technical specifications Clause 1301	Cum	427.20	₹ 1,646.80	₹ 1,862.86	₹ 7,95,814.00
	Quantity as per statement BC_19/1_S2					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 14.1					

Items	Particulars	Unit	Quantity	Rate (Rs.) as per SR of AWRD 2020-2021 (Rural Roads)	Rate considering 12% GST & 1% Labour Cess	Amount (Rs.)
6	Providing and laying of Filter media with granular materials/stone crushed aggregates satisfying the requirements laid down in clause 2504.2.2. of MoRTH specifications to a thickness of not less than 600 mm with smaller size towards the soil and bigger size toeards the wall and provided over the entire surfaces behind the abutement, wing wall and return wall to the full height compacted to firm condition complete as per drawing and technical specification.	Cum	87.00	₹ 1,768.00	₹ 1,999.96	₹ 1,73,997.00
	Quantity as per statement BC_19/1_S2					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 17.51					
7	Providing and laying of apron with cement concrete blocks (size 0.5 x 0.5 x 0.5 m) of size as per Table 1300.1 cast-in-situ and made with nominal mix of M-15 grade cement concrete as per drawing and technical specifications Clause 1301	Cum	87.00	₹ 5,192.70	₹ 5,873.98	₹ 5,11,036.00
	Quantity as per statement BC_19/1_S2					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 14.30					
8	Single bamboo spur and palasiding of whole 2nd class bamboo (Jati or Bethua) 65mm to 75mm dia closely packed & driven, including fitting and fixing with half bamboo kamis horizantally in three rows with the cane or tieing wire complete and struts 1500 mm apart longitudinally and providing brush wood as per drawing and technical specification clause 1302.5 of MORD a) Driven atlease 900mm below and 1800mm above the ground on average. (a) Driven at least 900mm below and 1800 mm above the ground on average.	Rm	100.00	₹ 616.20	₹ 697.05	₹ 69,705.00
	Quantity as per statement BC_19/1_2					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 16.45					
9	Serviceable empty cement bags	Each	13393.00	₹ 6.00	₹ 6.79	₹ 80,358.00
	Quantity as per statement BC_19/1_S2					
	(As per EE Dibrugarh WR Division NIQ No. EE/WRD/DBR/2021-22/G-131/1441 on Dt. 20/05/2021)					
10	Labour charge for laying and pitching earth filled cement bags including excavation and borrowing earth, breaking clods, filling in bags and supplying and stitching the mouth with jute sutli, etc. complete as directed. (cement bags will be supplied by the department free of cost). For borrowing earth from a distance beyond 30m. & up to 60m.	Each	13393.00	₹ 14.20		₹ 1,90,180.60
	Quantity as per statement BC_19/1_S2					
	(As per EE Dibrugarh WR Division NIQ No. EE/WRD/DBR/2021-22/G-131/1441 on Dt. 20/05/2021)					
				Total (Rs.)		₹ 39,62,199.60
11	Dewatering by 5 H.P. water pump including supply of necessary fuel, engine oil and pump operator etc complete..					₹ 39,622.00
	Quantity = 1% of total cost					
	(As per WRD SR 2018-19, Item No.9.02)					
				Grand Total Rs.		₹ 40,01,821.60

Executive Engineer
DIbrugarh W.R. Division
Dibrugarh

Name of Project:- Integrated Water Resources Management of Buridehing basin

QUANTITY STATEMENT - SG-8 (For Sluice gates E-14/2, E-25/4 & E-25/5)

Sl. No.	Particulars	Unit	No.	Dimensions			Quantity	Remarks
				L (M)	B (M)	H (M)		
1	Excavation for foundation							
	Box Culvert	Cum	1	3.00	6.70	1.00	20.10	
	U/S Floor	Cum	1	4.00	8.65	1.00	34.60	
	Apron U/S`& D/S	Cum	1	39.00	11.60	1.00	452.40	
	Toe wall at U/S	Cum	2	1.00	11.60	0.50	11.60	
	U/S Wing Walls	Cum	2	8.47	2.50	1.50	63.53	
	Cut-off Wall at U/S	Cum	1	0.50	11.60	3.00	17.40	
Sub-Total							599.63	
2	M-10 PCC for foundation and flooring							
	Flooring between U/S Wing Walls	Cum	1	4.00	8.65	1.00	34.60	
	Foundation for main culvert	Cum	1	3.00	6.70	1.00	20.10	
	Wing Wall U/S	Cum	2	8.47	2.50	0.15	6.35	
	Cut-off Wall at botttom raft	Cum	2	0.30	11.60	3.00	20.88	
Sub-Total							81.93	
3	Quantity of M-20 concrete							
	Bottom raft	Cum	1	3.00	5.70	0.50	8.55	
	Abutments		2	3.75	0.50	2.77	10.37	
	Parapet		1	5.70	0.50	1.00	2.85	
	Hunch		4	3.00	0.15	0.15	0.14	
	Deck slab		1	3.00	5.70	0.50	8.55	
	Bottom Stem		2	8.47	3.10	0.55	28.88	Wing Wall U/S
	Abutments		2	8.47	0.55	2.04	19.01	
	Toe Wall		2	11.60	0.50	1.00	11.60	
			2	11.60	1.00	0.50	11.60	
						Total	101.55	
4	Total quantity of steel required (Fe415)							
		Kg	10mm	12mm	16mm	25mm		
	Main Culvert		55	10	87	86	239.11	
	Wing walls etc		13	321	231	552	1116.11	
Total Quantity in Kg							1355.22	
Total Quantity in MT							13.55	
5	Total quantity of CC Blocks							
	U/S	Cum	1	5	11.6	0.5	29.00	
	D/S		1	10	11.6	0.5	58.00	
Total Quantity in cum							87.00	

6	Quantity of boulders for Up stream & Down stream protection works.							
	U/S Apron	cum	1.000	8.000	11.600	1.000	92.80	
			2.000	13.500	2.000	1.000	54.00	
	D/S Apron		1.000	14.000	11.600	1.000	162.40	
			2.000	24.500	2.000	1.000	98.00	
			2.000	4.000	2.500	1.000	20.00	
Total Quantity in Cum							427.20	
7	Quantity of filter gravel 13mm to 19mm							
	U/S Apron	cum	1.000	5.000	11.600	0.500	29.00	
	D/S Apron		1.000	10.000	11.600	0.500	58.00	
Total Quantity in Cum							87.00	
8	Dewatering							
	Dewatering will be required for 1.5 months @ 8 hours per day 4 (six) Nos. of 5 HP pump set	hrs					1440.00	
Total Quantity in hours							1440.00	

9	Construction of whole bamboo single palisiding							
	U/S	RM	2.000	25.000			50.00	
	D/S		2.000	25.000			50.00	
Total Quantity in RM							100.00	
10	Earth filled cement bags							
	U/S	cum	1.000	25.000	2.500	3.000	187.50	
	D/S		1.000	25.000	2.500	3.000	187.50	
Total Quantity in cum							375.00	
Total Quantity in bags (0.028cum/bag)							13393.00	

Executive Engineer
DIbrugarh W.R. Division
Dibrugarh

Name of Project:- Integrated Water Resources Management of Buridehing basin

SUB-EST - SG-7 (For Sluice gates E-19/1)

Items	Particulars	Unit	Quantity	Rate (Rs.) as per SR of AWRD 2020-2021 (Rural Roads)	Rate considering 12% GST & 1% Labour Cess	Amount (Rs.)
1	Earthwork in excavation for structures as per drawing and technical specifications Clause 305.1 including setting out, construction of shoring and bracing, removal of stumps and other deleterious material and disposal upto a lead of 50 m, dressing of sides and bottom and backfilling in trenches with excavated suitable material. I Ordinary soil Upto 3 m depth Quantity as per statement BC_19/1_S1 **Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 11.1 (I)**	Cum	464.53	₹ 113.00	₹ 127.83	₹ 59,381.00
2	Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and technical specifications Clause 802, 803, 1202 & 1203 A With crushed Stone II P.C.C grade M 15 Nominal mix (1:2.5:5)	Cum	42.55	₹ 5,216.10	₹ 5,900.45	₹ 2,51,064.00
	Quantity as per statement BC_19/1_S1					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 11.4 A(II)					
3	Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and technical specifications Clause 802, 803, 1202 & 1203 A With crushed Stone IV R.C.C Grade M20	Cum	85.18	₹ 6,259.20	₹ 7,080.41	₹ 6,03,109.00
	Quantity as per statement BC_19/1_S1					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 11.4 A(IV)					
4	Supplying, fitting and placing TMT (Fe-500 D) reinforcement bar (From Primary Producer: TATA/SAIL/Esser Steel/ Jindal steel/Shyam steel/RINL) in foundation complete as per drawings and technical specifications Clauses 1000 and 1202	t	11.860	₹ 56,239.00	₹ 63,617.56	₹ 7,54,504.00
	Quantity as per statement BC_19/1_S1					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 11.7					
5	Providing and laying boulder apron for bed protection with stone boulders of minimum size and weight as per Table 1300.1, no fragment weighing less than 25 kg laid dry complete as per drawing and technical specifications Clause 1301	Cum	396.00	₹ 1,646.80	₹ 1,862.86	₹ 7,37,693.00
	Quantity as per statement BC_19/1_S2					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 14.1					

Items	Particulars	Unit	Quantity	Rate (Rs.) as per SR of AWRD 2020-2021 (Rural Roads)	Rate considering 12% GST & 1% Labour Cess	Amount (Rs.)
6	Providing and laying of Filter media with granular materials/stone crushed aggregates satisfying the requirements laid down in clause 2504.2.2. of MoRTH specifications to a thickness of not less than 600 mm with smaller size towards the soil and bigger size toeards the wall and provided over the entire surfaces behind the abutement, wing wall and return wall to the full height compacted to firm condition complete as per drawing and technical specification.	Cum	67.50	₹ 1,768.00	₹ 1,999.96	₹ 1,34,997.00
	Quantity as per statement BC_19/1_S2					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 17.51					
7	Providing and laying of apron with cement concrete blocks (size 0.5 x 0.5 x 0.5 m) of size as per Table 1300.1 cast-in-situ and made with nominal mix of M-15 grade cement concrete as per drawing and technical specifications Clause 1301	Cum	67.50	₹ 5,192.70	₹ 5,873.98	₹ 3,96,494.00
	Quantity as per statement BC_19/1_S2					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 14.30					
9	Single bamboo spur and palasiding of whole 2nd class bamboo (Jati or Bethua) 65mm to 75mm dia closely packed & driven, including fitting and fixing with half bamboo kamis horizantally in three rows with the cane or tieing wire complete and struts 1500 mm apart longitudinally and providing brush wood as per drawing and technical specification clause 1302.5 of MORD a) Driven atlease 900mm below and 1800mm above the ground on average. (a) Driven at least 900mm below and 1800 mm above the ground on average.	Rm	100.00	₹ 616.20	₹ 697.05	₹ 69,705.00
	Quantity as per statement BC_19/1_2					
	Rate : As per SR of APWD 2020-2021 (Rural Roads), Item No. 16.45					
10	Serviceable empty cement bags	Each	26786.00	₹ 6.00	₹ 6.79	₹ 1,60,716.00
	Quantity as per statement BC_19/1_S2					
	(As per EE Dibrugarh WR Division NIQ No. EE/WRD/DBR/2021-22/G-131/1441 on Dt. 20/05/2021)					
11	Labour charge for laying and pitching earth filled cement bags including excavation and borrowing earth, breaking clods, filling in bags and supplying and stitching the mouth with jute sutli, etc. complete as directed. (cement bags will be supplied by the department free of cost). For borrowing earth from a distance beyond 30m. & up to 60m.	Each	26786.00	₹ 14.20		₹ 3,80,361.20
	Quantity as per statement BC_19/1_S2					
	(As per EE Dibrugarh WR Division NIQ No. EE/WRD/DBR/2021-22/G-131/1441 on Dt. 20/05/2021)					
				Total (Rs.)		₹ 35,48,024.20
13	Dewatering by 5 H.P. water pump including supply of necessary fuel, engine oil and pump operator etc complete..					₹ 35,480.24
	Quantity = 1% of total cost					
	(As per WRD SR 2018-19, Item No.9.02)					
				Grand Total Rs.		₹ 35,83,504.44

Executive Engineer
DIbrugarh W.R. Division
Dibrugarh

Name of Project:- Integrated Water Resources Management of Buridehing basin

Qty St. - SG-7 (For Sluice gates E-19/1)

Sl. No.	Particulars	Unit	No.	Dimensions			Quantity	Remarks
				L (M)	B (M)	H (M)		
1	Excavation for foundation							
	Box Culvert	Cum	1	3.00	4.10	1.00	12.30	
	U/S Floor	Cum	1	4.00	6.05	1.00	24.20	
	Apron U/S`& D/S	Cum	1	39.00	9.00	1.00	351.00	
	Toe walls	Cum	2	1.00	9.00	0.50	9.00	
	U/S Wing Walls	Cum	2	8.47	2.50	1.50	63.53	
	Cut-off Wall at u/s edge	Cum	1	0.50	9.00	1.00	4.50	
Sub-Total							464.53	
2	M-10 PCC for foundation and flooring							
	Flooring Between U/S Wing Walls	Cum	1	4.00	6.05	1.00	24.20	
	Foundation for main culvert	Cum	1	3.00	3.10	1.00	9.30	
	Wing Wall U/S	Cum	2	8.47	2.50	0.15	6.35	
	Cut-off Wall at u/s edge	Cum	1	0.30	9.00	1.00	2.70	
Sub-Total							42.55	
3	Quantity of M-20 concrete							
	Bottom raft	Cum	1	3.00	3.10	0.50	4.65	
	Abutments		2	3.00	0.50	2.77	8.30	
	Parapet		1	3.10	0.50	1.00	1.55	
	Hunch		4	3.00	0.15	0.15	0.14	
	Deck slab		1	3.00	3.10	0.50	4.65	
	Bottom Stem		2	8.47	3.10	0.55	28.88	Wing Wall U/S
	Abutments		2	8.47	0.55	2.04	19.01	
	Toe Wall		2	9.00	0.50	1.00	9.00	
			2	9.00	1.00	0.50	9.00	
						Total	85.18	
4	Total quantity of steel required (Fe415)							
		Kg	10mm	12mm	16mm	25mm		
	Main Culvert		35	7	55	54	151.43	
	Wing walls etc		12	298	214	511	1034.47	
Total Quantity in Kg							1185.90	
Total Quantity in MT							11.86	
5	Total quantity of CC Blocks							
	U/S	Cum	1	5	9	0.5	22.50	
	D/S		1	10	9	0.5	45.00	
Total Quantity in cum							67.50	

6	Quantity of boulders for Up stream & Down stream protection works.							
	U/S Apron	cum	1.000	10.000	9.000	1.000	90.00	
			2.000	15.500	2.000	1.000	62.00	
	D/S Apron		1.000	14.000	9.000	1.000	126.00	
			2.000	24.500	2.000	1.000	98.00	
			2.000	4.000	2.500	1.000	20.00	
Total Quantity in Cum							396.00	
7	Quantity of filter gravel 13mm to 19mm							
	U/S Apron	cum	1.000	5.000	9.000	0.500	22.50	
	D/S Apron		1.000	10.000	9.000	0.500	45.00	
Total Quantity in Cum							67.50	
8	Dewatering							
	Dewatering will be required for 1.5 months @ 8 hours per day 4 (six) Nos. of 5 HP pump set	hrs					1440.00	
Total Quantity in hours							1440.00	

9	Construction of whole bamboo single palisiding							
	U/S	RM	2.000	25.000			50.00	
	D/S		2.000	25.000			50.00	
Total Quantity in RM							100.00	
10	Earth filled cement bags							
	U/S	cum	1.000	50.000	2.500	3.000	375.00	
	D/S		1.000	50.000	2.500	3.000	375.00	
Total Quantity in cum							750.00	
Total Quantity in bags (0.028cum/bag)							26786.00	

Executive Engineer
DIbrugarh W.R. Division
Dibrugarh

SHUTTER DESIGN FOR RCC SLUICE CULVERT

Name of Project:- Integrated Water Resources Management of Buridehing Basin

Input Data

1 Size of barrel — Breadth = 2.10 m; Height = 2.70 m

2

	Sluice Gate	Nos. of gate(s)	Design HFL on R/S (in M)	Max. water level on C/S (in M)	Sill level (M)	Design head (m)
a	E-09/1	1	104.33	103.4	103.00	1.33
b	E-09/2	1	103.28	102.4	102.00	1.28
c	E-16/2	1	114.46	113.88	113.00	1.46
d	E-24/4	1	115.64	114.42	114.00	1.64
e	E-27/2	1	118.63	117.32	117.00	1.63
f	E-27/3	1	118.63	117.32	117.00	1.63
g	E-27/4	1	118.63	117.32	117.00	1.63
h	E-28/1	1	118.63	117.32	117.00	1.63
i	E-12/1	1	104.14	103.69	103.00	1.14
j	E-12/2	1	103.45	102.49	102.00	1.45
k	E-12/3	1	102.43	101.39	101.00	1.43
l	E-16/1	1	114.56	114.42	113.00	1.56
m	E-16/3	2	114.39	113.80	113.00	1.39

Since the barrel size is same, identical gate shall be provided at all three locations; designed for worst condition.

3 Design head = 1.64 m

4 Clearance on both sides of shutter = 10 mm

5 Free board = 0.17 m

6 C/C of slide pads L = 2.30 m

7 C/C of seals b = 2.10 m

8 Design condition for gate : Wet & Accessible

9 Material: IS2062 - E250 Gr.A/B YP = 2550 kg/cm^2 UTS = 4180 kg/sq.cm

SIZE OF THE GATE

(i) Breadth of the shutter, B = Clear opening + ISLC 175 - Clearance

B = 2.43 m

(ii) Height of the shutter, H = (Full Supply Level - Sill Level) + Free Board

H = 1.81 m

Size of the gate (B x H) = 2.43 m x 1.81 m

(iii) Thickness of the steel plate = 10.00 mm

DESIGN AND SPACING OF HORIZONTAL AND VERTICAL GIRDER

(Analytical Method) | Designed in 1 unit.

$$Y_k = \frac{2*h}{3*\sqrt{n}}\left\{k^{1.5} - (k-1)^{1.5}\right\}$$

where Yk = depth of HG from FRL

h = head acting at bottom of panel = 1.64 m

k = 1,2,3….n; HG under consideration

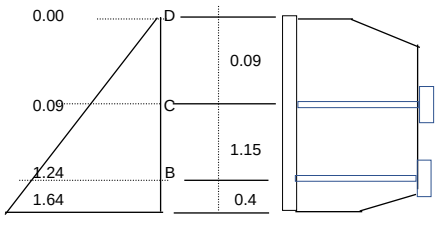
n = Total no. of Hor. Girders = 2 (adopted)

Girder no	Y_k (in m)	Distance from bottom (in m)	Inter-element gap (in m)	Adopted values (in m)
1	0.773	0.867	0.640	1.15
2	1.414	0.226	0.226	0.4

Water thrust = b*h*h/2 = 2.824 T

Effective thickness of skin plate excluding corrosion allowance of 1.5mm = 8.50 mm

Water head (in t/m2)

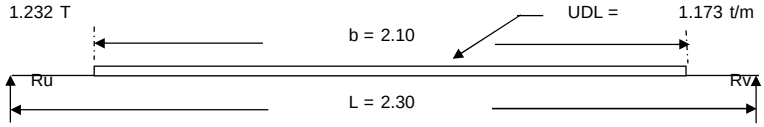


Moment Distribution on girders

Node Point	B		C	
D.F	0	1	1	0
F.E.M	0.1205	-0.0860	0.0606	-0.0001
Distrb.1		-0.03	-0.06	
C.O. 1		-0.03	-0.02	
Distrb.2		0.03	0.02	
Final moment	**0.121**	**-0.121**	**0.000**	**0.000**
Shear Calculations				
Direct Shear	0.58	0.49	0.27	0.00
Elastic shear	0	0.10	-0.10	0
TOTAL SHEAR(t/m)	**0.58**	**0.60**	**0.17**	**0.00**
Reactions (t/m)	1.173		0.172	
Total load (t)	2.464		0.360	

Load on the heavily loaded horizontal girder = 2.464 T

Reactions Ru = Rv = 1.232 T



$$BM = \frac{Load}{8}(2L - b)$$

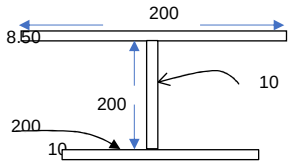
BM = 0.770 t-m

Co-acting width of skin plate:

Min. of 1. 40*skin plate thk. + B = 340 mm
2. C/C of girders = 1.15 mm
3. 0.11 * span of girder = 253 mm

Modulus of elasticity, E = 2.E+10 kg/sq.m

Adopted section:



Sectional properties of adopted section:

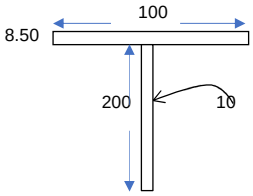
	Top Plate	Web	Bot. Plate	Built-up sec.
Area of section (cm^2)	17	20	20	57
N.A. dist. from Top (cm)	0.425	10.85	21.35	11.43
M.I. about N.A. (cm^4)	1	666.67	1.66666667	4703.08
Section Modulus Zu (cm^3)	-	-		411.65
Section Modulus Zd (cm^3)	-	-		444.74
Section Modulus Zf (cm^3)	-	-		451.13

Deflection @ centre = $\frac{Wb}{384EI}(8L^3 - 4Lb^2 + b^3)$

Location	Stress	Permissible values		
U/s skin pl.	187.0	< 0.45YP =	1147.5	kg/sq.cm
D/s skin pl.	173.1	< 0.45YP =	1147.5	kg/sq.cm
D/s flange	170.7	< 0.45YP =	1147.5	kg/sq.cm
Shear stress	61.6	< 0.35YP =	892.5	kg/sq.cm
Deflection(mm)	0.421	< L/800 =	2.875	mm

Design of vertical stiffener:

Average pressure on panel b/w B and C = 0.665 t/sq.m
Adopted C/C between vertical stiffeners = 460 mm
UDL = 3.059 kg/sq.cm
Assuming stiffener to be simply supported b/w girders
C/C between supports = 115 cm
Min. of 1. 40*skin plate thk. + B = 340 mm
2. C/C of stiffeners = 460 mm
3. 0.11 * span of girder = 126.5 mm



Sectional properties of adopted section:

	Top Plate	Web	Built-up sec.
Area of section (cm^2)	8.5	20	28.5
N.A. dist. from Top (cm)	0.425	10.85	7.74
M.I. about N.A. (cm^4)	1	666.67	1315.45
Section Modulus Zu (cm^3)	-	-	169.94
Section Modulus Zd (cm^3)	-	-	190.90
Section Modulus Zf (cm^3)	-	-	100.35

$$BM = \frac{wl^2}{8}$$ = 5056.90938 kg-cm

Shear force = 175.89 kg

Stresses:

Location	Stress	Permissible values		
U/s skin pl.	29.8	< 0.45YP =	1147.5	kg/sq.cm
D/s skin pl.	26.5	< 0.45YP =	1147.5	kg/sq.cm
D/s flange	50.4	< 0.45YP =	1147.5	kg/sq.cm
Shear stress	8.8	< 0.35YP =	892.5	kg/sq.cm

Design of Slide pad:

Max. load on thrust pad = 1.232 T

Size of thrust pad adopted = 50 mm X 170 mm

Bearing stress = 1231.95/(5*17) = 14.494 kg/sq.cm < 0.35UTS

Material - AISI 410

Dispersion length of load (L1) = $\frac{2\times(Thickness\ of\ Track\ Plate + Thickness\ of\ beam)}{Tan\theta}$ θ = 30 deg

L1 = 2(10+5.1)/Tan30 = 52.31 mm

Effective width of load dispersion in concrete = 102.31 mm

Effective length of load dispersion in concrete = 222.31 mm

Compressive stress in concrete = 1231.95/(10.23*22.23) = 5.417 kg/sq.cm < 0.25*fcb = 51 kg/sq.cm

fcb for M20 = 20 N/mm^2

Design of slide track:

Min. Thickness of track plate adopted = 10.00 mm

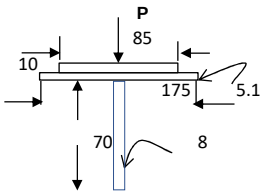
Modular ratio for M20 concrete (Es/Ec) = 13.33

Section modulus of track per unit length = 0.3800 cm^3

Moment due to concrete pressure = 195.68 kg-cm

Bending moment in track = 514.91 kg/sq.cm < 0.40YP = 1020 kg/sq.cm

Track beam:



Sectional properties of adopted section:

	Top Plate	Track base	Web	Built-up sec.
Area of section (cm^2)	8.5	8.925	5.6	14.1
N.A. dist. from Top (cm)	0.5	1.255	5.01	2.29
M.I. about N.A. (cm^4)	0.7	0.193449375	22.87	92.24
Section Modulus Zu (cm^3)	-	-	-	40.26
Section Modulus Zd (cm^3)	-	-	-	71.44
Section Modulus Zf (cm^3)	-	-	-	14.83

Gate weight = 0.897 T

Frictional force = Coeff. Of friction * water thrust = 1.412 T

Hoist capacity for worst loading = 1.2*(gate weight + frictional force) = 2.8 T

Adopted say = 7 T

Manually operated screw hoist is provided. Length of screw rod = 3.7 m approx.

Euler formula for critical load = $P_{cr} = \frac{\Pi^2 EI}{L_{eff}^2} = P * FOS$ FOS = 1.5

End conditions of screw road = Fixed - fixed

Modulus of elasticity, E = 2.E+06 kg/sq.cm

Effective length (Leff) = 240.5 cm

Therefore; mean dia. of screw = 4.919 cm

Adopted square thread of mean diameter 60 mm and pitch 10mm with double start.

Helix angle of screw is given by: p = 10 mm

$\tan\alpha = \frac{n*p}{\Pi*d_m}$ = 0.1061 n = 2

α= 6.057 deg.

Friction b/w steel and CI/bronze nut = 0.2

$\tan\phi = \mu' = \frac{\mu}{\cos\beta}$ = 0.2 since 2β = 0 deg. For square thread

ϕ = 11.310 deg > α (Hence self-locking)

Torque required to lift the load: $T = P\frac{d_m}{2} * \tan(\alpha+\phi)$ = 6567.5367 kg-cm

Torque reqd. to overcome thrust bearing /collar friction = 0.1*T

Total torque required = 7224.29033 kg-cm

Ideal torque req. = P*(dm/2)*tanα = 2228.2 kg-cm

Efficiency of screw thread = 30.84 %

Efficiency of bevel gear reducer = 0.9

Torque applied by two persons = 2*40*10 = 800 kg-cm

Gear ratio required = 7224.29/ (800*0.278) = 32.53

Adopted gear ratio is 30:1

Assuming hoist load to be distributed in ratio of 40:60, load on single column = 0.6*hoist effort/2

Load on column = 2100 kg

Crowd load = 0.6*2.6*500/2 = 390 kg

Total load on column = 2490 Kg SAY 2500 kg

Area of ISLC 175 = 22.4 sq.cm

Axial compressive stress = 2500/22.4 = 111.61 kg/sq.cm < 1300 kg/sq.cm for slenderness ratio = 42

The guide channels shall be braced at an interval of 1000mm

Executive Engineer
Dibrugarh WR Division
Dibrugarh

Annexure BC_2019/1_A

COST OF SHUTTER ASSEMBLY (STEEL PART)

Quantity as per statement

Name of Project:- Integrated Water Resources Management of Buridehing basin

Sl. No.	Particulars	Unit	Quantity	Rate (Rs.)	Amount (Rs.)
	A. SHUTTER ASSEMBLY				
1	M.S. plate for skin plate of shutter	MT	0.354	57000.00	₹ 20,178.00
2	M.S. channel for frame, horizontal girders	MT	0.187	57000.00	₹ 10,659.00
3	M.S. plate for vertical stiffeners & End girder	MT	0.263	57000.00	₹ 14,991.00
4	Seal clamps, seal base & diaphragm	MT	0.079	57000.00	₹ 4,503.00
6	Wedge type rubber seal	M	2.100	600.00	₹ 1,260.00
7	Angle type rubber seal	M	6.200	600.00	₹ 3,720.00
7	CRS Slide Pad	MT	0.014	57000.00	₹ 798.00
8	Galvanized CSK bolts, Nuts and washer 16mm dia x 75mm length	Kg	9	160.00	₹ 1,440.00
	Sub-Total				₹ 57,549.00
	B. GUIDE CHANNEL ASSEMBLY				
1	M.S. guide channel	MT	0.51	57000.00	₹ 29,070.00
2	Fabricated G.I. Pipe 25mm for separator bolt	No.	12	140.00	₹ 1,680.00
3	M.S. separator stud 25mm dia x 75mm length	No.	12	140.00	₹ 1,680.00
4	1' bolt	Kg	1	110.00	₹ 110.00
5	CRS Slide track plate	MT	0.088	57000.00	₹ 5,016.00
	Sub-Total				₹ 37,556.00
	C. LIFTING ARRANGEMENT				
1	M.S. screw shaft (60mm dia)	M	4.00	6500.00	₹ 26,000.00
2	ISA 100mm for locking	MT	0.007	57000.00	₹ 399.00
	Sub-Total				₹ 26,399.00
	D. EMBEDDED PARTS				
1	M.S. Bottom channel	MT	0.081	57000.00	₹ 4,617.00
2	S.S. plate for bottom & side seal seat	MT	0.015	57000.00	₹ 855.00
3	Embedded plate joining guide channels	MT	0.146	57000.00	₹ 8,322.00
4	Anchors	Kg	25	57.00	₹ 1,425.00
5	2nd stage concreting, Civil works for guide channel and bottom channel installation		L.S.		₹ 10,000.00
	Sub-Total				₹ 25,219.00

Sl. No.	Particulars	Unit	Quantity	Rate (Rs.)	Amount (Rs.)
	E. PLATFORM ASSEMBLY				
1	M.S. strengthening channel	MT	0.018	81900.00	₹ 1,474.20
1	M.S. channel 200 x 75 mm for top channel	MT	0.118	81900.00	₹ 9,664.20
2	M.S. cross channel 100 x 50 x 5 mm	MT	0.071	81900.00	₹ 5,814.90
3	M.S. block sheet for plateform top 4mm	MT	0.082	81900.00	₹ 6,715.80
4	M.S. angle for ladder 50 x 50 x 6 mm	MT	0.097	81901.00	₹ 7,944.40
5	M.S. Nuts and Bolts (Assorted size)	Kg	3	160.00	₹ 480.00
6	M.S. washer (Assorted size)	Kg	1	160.00	₹ 160.00
7	Hoisting Gear Assembly	Nos.	LS		₹ 60,000.00
	Sub-Total				₹ 92,253.50
	F. PAINTING MATERIALS				
1	Red Oxide Metal Primer	Ltr	15.00	220.00	₹ 3,300.00
2	Solventless coalter epoxy paint	Ltr	15	280.00	₹ 4,200.00
3	G.P. Thinner	Ltr	20	180.00	₹ 3,600.00
4	White Paint	Ltr	2	300.00	₹ 600.00
5	Black Paint	Ltr	2.00	300.00	₹ 600.00
	Sub-Total				₹ 12,300.00
	G. WELDING MATERIALS				
1	Welding cable 600 Amp	M	15.00	450.00	₹ 6,750.00
2	Gas Hose pipe (Red)	M	15.00	190.00	₹ 2,850.00
3	Gas Hose pipe (Green)	M	25.00	190.00	₹ 4,750.00
4	Welding Holder, 600 Amp	No.	1	300.00	₹ 300.00
5	Welding Helmet	No.	1	450.00	₹ 450.00
6	M.S. Electrodes, 8 SWG	Pkt	10	1250.00	₹ 12,500.00
7	M.S. Electrodes, 10 SWG	Pkt	10	1175.00	₹ 11,750.00
8	Acetylene Gas Cylinder	No.	4	2200.00	₹ 8,800.00
9	Oxygen Gas Cylinder	No.	8	1200.00	₹ 9,600.00
10	Cutting torch	No.	1.0	3000.00	₹ 3,000.00
11	Acetylene Regulator	No.	1.0	1850.00	₹ 1,850.00
12	Oxygen Regulator	No.	1.0	1850.00	₹ 1,850.00
13	Welding Glass (Black)	Pair	1	38.00	₹ 38.00
14	Welding Glass (White)	Pair	1	38.00	₹ 38.00
15	Welding Mask with Handle	No.	1	25.00	₹ 25.00
16	Welding Gloves	Pair	1	85.00	₹ 85.00
17	Welding Googles	Pair	1	200.00	₹ 200.00
18	Steel wire brush	Nos.	8	80.00	₹ 640.00
	Sub-Total				₹ 65,476.00
	H. FUEL AND LUBRICANTS				
1	Mobile	Ltr	20	170.00	₹ 3,400.00
2	H.S.D. Oil	Ltr	100	42.36	₹ 4,236.00
	Sub-Total				₹ 7,636.00

Sl. No.	Particulars	Unit	Quantity	Rate (Rs.)	Amount (Rs.)
	I. MISCELLANUOUS ITEMS				
1	Waste cotton	Kg	1	120.00	₹ 120.00
2	W.B. Grease	Kg	1	250.00	₹ 250.00
3	Painting Brush, 3"	Nos.	4	150.00	₹ 600.00
4	Emery Paper	Doz	1	150.00	₹ 150.00
5	Hacksaw blade	Doz	1	120.00	₹ 120.00
6	Washing soap	Kg	1	50.00	₹ 50.00
7	Kerosene oil	Ltr	50	40.00	₹ 2,000.00
8	Nylon rope, 25mm dia	Kg	15	300.00	₹ 4,500.00
	Sub-Total				₹ 7,790.00
	Total				**₹ 3,32,178.50**
J	Transportation of materials up to the work site	@		5.00%	₹ 16,608.92
K	Febrication and Field painting	@		30.00%	₹ 99,653.55
L	Overhead charge and contractor's profit	@		10.00%	₹ 33,217.85
M	Erection of equipments	@		10.00%	₹ 33,217.85
N	Marketing cost	@		1.00%	₹ 3,321.78
O	Temporary jigs and fixtures	@		5.00%	₹ 16,608.92
P	Cutting cost	@		5.00%	₹ 16,608.92
				Grand Total	₹ 5,51,416.31
				Say	₹ 5,51,000.00

Executive Engineer
Dibrugarh WR Division
Dibrugarh

Quantity Statement for Sluice Shutter

Name of Project:- Integrated Water Resources Management of Buridehing basin

In computing quantity of materials, 2.5% wastages has been considered for cutting and joining purposes

A SHUTTER ASSEMBLY

1 M.S. plate for skin plate of shutter of 10mm thick **Nos.**

Weight	=	2430	x	10	x	1810	x	1	=	345.26655	kg		
Adding 2.5% for wastage					=	353.898	Kg					=	0.354 MT

2 M.S. channel for frame, horizontal girders (ISLC 200 & fabricated section)

Web	=	200	x	10	x	2190	x	2	=	68.766	kg		
Flange	=	200	x	10	x	2190	x	2	=	68.766	kg		
ISLC 200	=	20.6	x			2190	x	1	=	45.114	kg		
Adding 2.5% for wastage					=	187.21	Kg					=	0.187 MT

3 M.S. plate for vertical stiffeners & end girders

Stiffener	=	200	x	10	x	3060	x	4	=	192.17	kg		
End Girder	=	225	x	10	x	1810	x	2	=	63.94	kg		
Adding 10% for wastage					=	262.51	Kg					=	0.263 MT

4 Seal base plate and seal clamp plates

Seal Base	=	80	x	12	x	3000	x	2	=	45.216	kg		
Seal Clamp	=	45	x	12	x	1810	x	2	=	15.345	kg		
Bottom seal clp.	=	88	x	12	x	2000	x	1	=	16.579	kg		
Adding 10% for wastage					=	79.07	Kg					=	0.079 MT

5 Slide pad (CRS)

U/S pad	=	50	x	25	x	170	x	4	=	6.673	kg		
D/S pad	=	50	x	30	x	150	x	4	=	7.065	kg		
Adding 10% for wastage					=	14.08	Kg					=	0.014 MT

6 Wedge type rubber seal 16mm thick

Length =	2.10	m					=	2.10	M			=	2.10 M

7 Angle type rubber seal 16mm thick

Length =	3.10	x	2				=	6.20	M			=	6.20 M

B GUIDE CHANNEL ASSEMBLY

1 M.S. guide channel (175 x 75 x 9.5) mm ISLC 175

Length of guide channel							=	6.25	M				
Total length of guide channel (4 Nos.)							=	25.00	M				
Weight of guide channel			17.60	Kg/RM			=	440.00	Kg				
Track stiffener	=	70	x	8	x	3250	x	4	=	57.148	kg		
Adding 10% wastage							=	509.58	Kg			=	0.51 MT

CRS Slide track plate 85mm x 10mm - 4 Nos.

Weight	=	85	x	10	x	3208	x	4	=	85.622	kg		
Adding 10% wastage							=	87.762	Sqm			=	0.088 MT

C LIFTING ARRANGEMENT

1 M.S. Screw shaft (Size 60 mm dia)

Length of Screw shaft	=	4.00	M

Diameter of screw shaft of 60 mm with 2 TPI square threaded up to a length of 3.85 m with a 20 mm dia hole.

2 ISA 100mmx100mmx6mm for bottom locking

Length 4 x 200mm	=	0.80	M		
Total weight (9.2kg/m)	=	7.36	Kg	=	0.007 MT

D EMBEDDED PARTS

1 M.S. Bottom channel of size (300mm x 100mm x 11.6mm) ISLC 300

Length of bottom channel required				=	2.45	M	
Weight of the channel (33.1kg/m)	=	81.095	Kg			=	0.081 MT

2 Plate welded to guide channels

		Weight	=	350	x	8	x	3250	x	2	=	142.87	kg	
		Adding 10% for wastage					=	146.44	Kg				=	0.146 MT
	3	S.S. plate for bottom & side seal seats												
		Bottom seal seat	=	100	x	8	x	2450	x	1	=	15.386	kg	
		Side seal seat se	=	50	x	6	x	3200	x	2	=	15.072	kg	
													=	0.015 MT
E	PLATEFORM ASSEMBLY					1.20	x	2.60						
	1	M.S. strengthening channel				100	x	50	x	5.0	mm	@ 440mm c/c	4	Nos.
		Length of each supporting channel							=	0.45	M			
		Total Length of supporting channel required							=	1.80	M			
		Total weight of the supporting channel adding 10% excess for cutting etc.												
		@	9.56	Kg/M							=	17.638	Kg	
													=	0.018 MT
	2	M.S. bottom channel				200	x	75	x	6.2	mm		2	Nos.
		Length of each bottom channel							=	2.60	M			
		Length of bottom channel required							=	5.20	M			
		Total weight of the bottom channel adding 10% excess for cutting etc.												
		@	22.20	Kg/M							=	118.326	Kg	
													=	0.118 MT
	3	M.S. cross channel				100	x	50	x	5	mm		6	Nos.
		Length of the plateform							=	1.2	M			
		Length of cross channel required							=	7.20	M			
		Total weight of the cross channel adding 10% excess for cutting etc.												
		@	9.56	Kg/M							=	70.553	Kg	
													=	0.071 MT
	4	M.S. block sheet for plateform top								4	mm thick			
		Quantity of block sheet required		1.2 x (2.6 - 0.6)					=	2.40	m^2			
		Total weight adding 10% excess for cutting etc.												
		Unit weight =		33.50	Kg/m^2						=	82.41	Kg	
													=	0.082 MT
	5	M.S. angle for ladder				50	x	50	x	6	mm		1	No.
		Width of the ladder		=	0.75	M								
		Length of ladder		=	2.50	M	approx.							
		No. of steps		=	8	Nos.								
		No. of railling post		=	10	Nos. (including platform)								
		Height of railling post		=	1	M								
		Total length of angle required			=									
		2	x	2.50	+	8	x	0.75	+	10	x	1.00	=	21.00 M
		@	4.50	Kg/M (adding 10% for wastage)							=	96.863	Kg	
													=	0.097 MT
	6	G.I. pipe for railling on ladder						Size 25 mm dia						
		Considering 1 (one) row on one side only.												
		Total length of G.I. pipe required						(2.6+2.5) x 2					=	10.20 M
	7	Hoisting Gear Assembly											=	1.000 Unit

Executive Engineer
Dibrugarh WR Division
Dibrugarh

CHAPTER- 9

Construction Plan

Construction Program***

Categories	Activities	2021-22			2022-23									2023-24					
		4th Quarter			1st Quarter			2nd Quarter				4th Quarter			1st Quarter				
		Jan	Feb	Mar	April	May	June	Jul	Aug	Sep		Jan	Feb	Mar	April	May	June		
PHYSICAL	Preliminary							3rd Quarter (Non working period due t			3rd Quarter (Non working period due to flood & rain)								
	NIT, Issue of Work order etc																		
	Earthwork in embankment, Earth work in bank trimming, geo-																		
	PSC porcupines																		
	Allied works																		

*** Tentative. Actual may vary depending upon final sanction for work execution.

Executive Engineer
Dibrugarh WR Division
Dibrugarh

CHAPTER- 10

Annexures and Certificates

Annexure — 1

Certificate on works approved by the State TAC

This is to certify that the works proposed in the "Integrated Water Resources Management of Buridehing Basin" Scheme located in the State of Assam in the area of Dibrugarh & Tinsukia Districts are individually approved by the State TAC. Followings are the individual works approved by the State TAC:

1. **Propose upgradation/construction of Embankment with 6m crest width for 185.48 Km**
2. **Repairing/reconstruction of sluice gates (39 sluice gates).**
3. **Proposed Anti-erosion works for 29.805 Km**
4. **PSC Porcupines Screens**
5. **Providing interlocking concrete block pavement**

This is also to certify that works beyond the recommendation of State TAC has not been included in the DPR of the proposed works.

Chief Engineer
Water Resources Department
Govt. of Assam

Annexure — 2

Certificate on inter-state matter or international aspects

This is to certify that the works proposed in the "Integrated Water Resources Management of Buridehing Basin" Scheme located in the State of Assam in the area of Dibrugarh & Tinsukia Districts does not have inter-state matter or international aspects.

Chief Engineer
Water Resources Department
Govt. of Assam

Annexure — 3

Certificate on e-flow, Longitudinal Latitudinal connectivity

This is to certify that upon implementation of the proposed "Integrated Water Resources Management of Buridehing Basin" Scheme located in the State of Assam in the area of Dibrugarh & Tinsukia Districts, the Longitudinal Latitudinal connectivity and e-flow as per the CWC guidelines will be maintained.

Chief Engineer
Water Resources Department
Govt. of Assam

Annexure — 4

Correctness of Quantity Certificate

This is to certify that quantities estimated for the "Integrated Water Resources Management of Buridehing Basin" Scheme located in the State of Assam in the area of Dibrugarh & Tinsukia Districts are correct and there will not be any deviation in future.

Chief Engineer
Water Resources Department
Govt. of Assam

Annexure — 5

Land acquisition certificate

This is to certify that the land acquisition for the "Integrated Water Resources Management of Buridehing Basin" Scheme located in the State of Assam in the area of Dibrugarh & Tinsukia Districts is required & under process.

Chief Engineer
Water Resources Department
Govt. of Assam

Annexure — 6

Correctness of Damage data Certificate

This is to certify that the damage given by the Mergherita, Naharkatia, Tengakhat, Tingkhong, Lahowal, Chabua, Dibrugarh East, Dibrugarh West, Moran Revenue Circles as enclosed in the DPR of the "Integrated Water Resources Management of Buridehing Basin" Scheme located in the State of located in the State of Assam in the area of Dibrugarh & Tinsukia Districts pertains exactly to the flood affected area of this scheme.

Chief Engineer
Water Resources Department
Govt. of Assam

Annexure — 7

Certificate on no separate schemes on the same reach of the river / coastal zone

This is to certify that no separate schemes are being proposed/planned on the same reach of the river/coastal zone along with the "Integrated Water Resources Management Of Buridehing Basin" Scheme located in the State of located in the State of Assam in the area of Dibrugarh & Tinsukia Districts.

Chief Engineer
Water Resources Department
Govt. of Assam

GOVERNMENT OF ASSAM
OFFICE OF THE SECRETARY
ASSAM STATE BRAHMAPUTRA VALLEY FLOOD CONTROL BOARD
WATER RESOURCES DEPARTMENT
GUWAHATI-3

No. BVFCB.352/2021/7 Date. 20.5.2021

To

1	Shri A.K. Mitra, Retd. Secretary to the Govt. of Assam, W.R. Department	Chairman TAC
2	Member (RM), CWC/Chief Engineer or his representative	Member
3	The Chairman/Vice-Chairman, Brahmaputra Board or his representative	Member
4	The Secretary to the Govt. of Assam, W.R. Department, Dispur, Guwahati-6	Member
5	The Chief Engineer, W.R. Department, Guwahati-3	Member
6	The Chief Engineer, Quality Control, W.R. Departrment, Guwahati-3	Invitee
7	The Addl. Chief Engineer, Lower Assam Zone, W.R. Department, Guwahati-3	Member
8	The Head of the Department of Civil Engineering, Assam Engineering College, Ghy-13	Member
9	The Chief Engineer, PWD (Roads), Guwahati -3.	Member
10	The Addl. Chief Engineer, Upper Assam Zone, W.R. Department, Dibrugarh.	Member
11	The Chief Bridge Engineer, N.F. Rly, Maligaon, Guwahati.	Member
12	The Director, Inland Water Transport, Guwahati-7	Member
13	Shri Ratul Ch. Sarma, Retd. Commissioner and Special Secretary to the Govt. of Assam, W/.R. Department.	Special Invitee Member
14	Shri Haren Kakoti, Retd. Secretary to the Govt of Assam, W.R. Department.	Special Invitee Member

Sub:-82nd (Special) meeting of the TAC held on 18th May/2021 in virtual.

Ref :- No. BVFCB. 352/2021/5 Date:- 15 .05.2021

Sir,

With reference to the above, I am directed forward herewith the list of approved schemes of 82th special TAC meeting held on 18th May 2021 at 1 PM in virtual.
This is for favour of your kind information and necessary action.

Yours faithfully

Secretary
ASBVFC Board, Guwahati-3
20.5.21

Minutes of the 82nd (Special) TAC meeting held on 18th May 2021 in virtual meeting.

Member present: -

1	Shri A.K. Mitra, Retd. Secretary to the Govt. of Assam, W.R. Department	Chairman TAC
2	Member (RM), CWC/Chief Engineer or his representative	Member
3	The Chairman/Vice-Chairman, Brahmaputra Board or his representative	Member
4	The Secretary to the Govt. of Assam, W.R. Department, Dispur, Guwahati-6	Member
5	The Chief Engineer, W.R. Department, Guwahati-3	Member
6	The Chief Engineer, Quality Control, W.R. Department, Guwahati-3	Invitee
7	The Addl. Chief Engineer, Lower Assam Zone, W.R. Department, Guwahati-3	Member
8	The Head of the Department of Civil Engineering, Assam Engineering College, Ghy-13	Member
9	The Addl. Chief Engineer, Upper Assam Zone, W.R. Department, Dibrugarh.	Member

Secretary
ASBVFC Board, Guwahati-3
20.5.21

MINUTES OF THE 82ND SPECIAL TECHNICAL ADVISORY COMMITTEE MEETING HELD ON 18TH MAY 2021 IN VIRTUAL PLATFROM AS APPROVED BY GOVT.

The list of members of TAC, invitees & Spl. invitees participated in the Webinar Organized by W. R. Dept. on 18th of May 2021 at 1:00 PM is annexed.

At the very outset Chairman accorded warm welcome to all the participants and requested Chief Engineer, Water Resources Department, to start the proceedings as per Agenda Circulated.

AGENDA NO. 1: -

Integrated Water Resources management of Buridehing basin.

Estimated cost: - Rs. 1105.523 Crore

Addl. C. E. (UAZ) briefed and explained the reason for preparation of revised DPR of the Buridehing project and stated the main contributing factors leading the revised cost estimate. The major reason for revision of the DPR are addition of locations of erosion points as per present site conditions, incorporation of interlocking paver blocks on the top of the embankment to increase the sustainability and durability of the upgraded embankment structure and increase in quantity of earthwork due to the increase in crest width of embankment to accommodate the road provision on embankment. Due to incorporation of these provisions the cost of the revised DPR has increased from Rs. **635.223 Crores** to **Rs. 1105.523 Crore.** However, Addl. Chief Engineer (UAZ) has stated that the design provision is kept same as earlier proposal. Director Design has also explained the reason for preparing of revised DPR and a detailed power point presentation was made to highlight the requirement and justification of the provisions made in the revised DPR.

The department also informed TAC that this project is likely to be implemented through world bank funding and representative of world bank along with officials of both Water Resources Department and FREMAA visited the site to understand the ground reality suggesting updating of the DPR.

During the discussion Dr. Bivash Sarma, Associate Professor, Assam Engineering College, Sri Ankit Dudeja, Deputy Director, Central Water Commission and Mr. M. P. Scott, Vice Chairman, Brahmaputra Board, has also participated in the discussion and made some valuable suggestion.

After threadbare discussion the committee has recommended the revised DPR with all the provisions with the suggestion to forward the revised DPR to appropriate authority of Govt. of India, for necessary approval and Techno Economic Clearance.

AGENDA NO. 2: -

Integrated Flood and Erosion Management of Manas & Beki in the District of Baksa and Barpeta in Brahmaputra Valley in Assam.

Estimated cost: - Rs. 211.167 Crore

Addl. Chief Engineer (LAZ), has explained the new proposals adopted in the revised estimate and stated that due to incorporation of new erosion affected location and inclusion of paver blocks surfacing on the top of the embankment, the cost of the DPR increased from **Rs. 203.25 Crore** to **Rs. 288.4310 Crore**. During the discussion, Hon'ble Chairman has suggested that the department may explore the possibility of utilizing river boulders in the apron and revetment at the vulnerable points of upper reaches where considerable velocity is generated during flood, Beki being a flashy river carries considerable discharge, adequate and sustainable protection measure is necessary.

The department also informed TAC that this project is likely to be implemented through world bank funding and representative of world bank along with officials of both Water Resources Department and FREMAA visited the site to understand the ground reality suggesting updating of the DPR.

Committee members Dr. Bivash Sarma, Associate Professor, Assam Engineering College, Sri Ankit Dudeja, Deputy Director, Central Water Commission and Mr. M. P. Scott, Vice Chairman, Brahmaputra Board, have also participated in the discussion and opined the same views. After threadbare discussion the committee has recommended the scheme with suggestions to forward the revised DPR to appropriate authorities of Govt. of India for approval/Techno Economic Clearance.

The meeting ended with vote of thanks from chair.

Secretary
Assam State Brahmaputra
Valley Flood
Water Resources Department
Guwahati, Pin-781003

Inward No. 527
Date 5/3/18
File No. M-14/F
Dibrugarh W. R. Divn.

GOVERNMENT OF ASSAM
OFFICE OF THE DIVISIONAL FOREST OFFICER : DIBRUGARH DIVISION
DIBRUGARH

LETTER NO. G.c/37/2017/1636   Dt. [illegible]/2018

To,

The Executive Engineer,
Dibrugarh WR Division,
Dibrugarh.

Sub. :- Integrated Water Resources Management of Burideling Basin

Ref.:- Your letter No. M-24/GNL/Dib/17-18/976 dtd 26/02/2018.

Sir,

With reference to your letter No. quoted above, I would like to inform you that the provision of the scheme is raising, strengthening and anti erosion works of existing flood control structure. Moreover, the scheme falls in the Civil area and does not cover any Forest land. So, this Division/Department has no objection for execution of the scheme "Integrated Water Resources Management of Burideling Basin" to be under taken under World Bank programme.

Yours faithfully,

Divisional Forest Officer
Dibrugarh Division,
Dibrugarh

Divisional Forest Officer
Dibrugarh Division

600
12/3/18

GOVERNMENT OF ASSAM
OFFICE OF THE DIVISIONAL FOREST OFFICER : DIGBOI DIVISION
DIGBOI

LETTER NO. B/G-25/2015/730 Dt. 07/03/2018

To,

The Executive Engineer,
Dibrugarh WR Division,
Dibrugarh.

Sub. :- Integrated Water Resources Management of Buridehing Basin.

Ref.:- Your letter No. M 24/GNL/Dib/17-18/982 dtd 28/02/2018.

Sir,

With reference to your letter No. quoted above, I would like to inform you that the provision of the scheme is raising, strengthening and anti erosion works of existing flood control structure. Moreover, the scheme falls in the Civil area and does not cover any Forest land. So, this Division/Department has no objection for execution of the scheme " Integrated Water Resources Management of Buridehing Basin" to be under taken under World Bank programme.

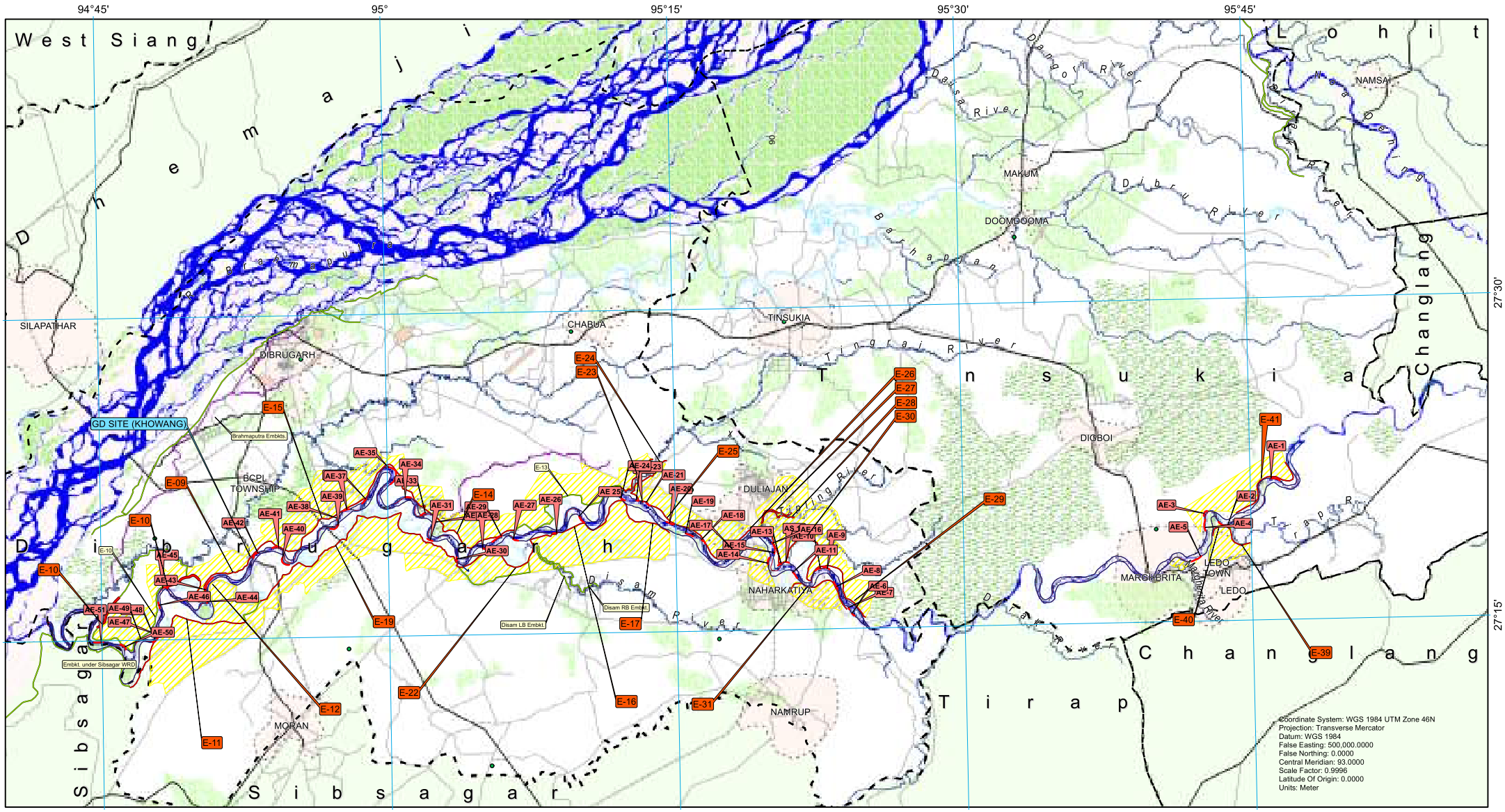
Yours faithfully,

Divisional Forest Officer
Digboi Division.

Divisional Forest Officer
Digboi Division, Digboi
Tinsukia, Assam

CHAPTER – 11

Drawings Pt.-I



PROPOSED UPGRADATION/CONSTRUCTION OF EMBANKMENT

Sl. No	Code	Name of Embankment	Length
1	E-41	PROPOSED EMBANKMENT AT MAICHANG PATHAR	8.50km
2	E-40	EXTENSION OF T/DYKE ALONG THE L/B OF BURIDEHING RIVER FROM CHIPPIBASTI TO MOLONG GAON	2.10km
3	E-39	T/DYKE ALONG THE L/B OF BURIDEHING RIVER FROM CHIPPIBASTI TO MOLONG GAON	2.70km
4	E-31	T/DYKE ALONG THE L/B OF BURIDEHING RIVER FROM JOYPUR TO NAHARKATIA	7.20km
5	E-17	EXTENSION OF SASSONI TINGKHONG BUND PH-II	5.50km
6	E-16	EXTENSION OF SASSONI TINGKHONG BUND PH-I	12.00km
7	E-22	TIE-BUND OF GELA DESAM	7.10km
8	E-19	DEHING BUND 1ST SECTION FROM AGHUNIBARI TO SESSUGHAT (UNDER DIBRUGARH WEST WR SUB-DIVN)	25.20km
9	E-12	DEHING BUND 1ST SECTION FROM AGHUNIBARI TO SESSUGHAT(UNDER DIBRUGARH EAST WR SUB-DIVN)	9.10km
10	E-11	DEHING BUND OLD A.T. ROAD FROM SESSUGHAT TO JAGUNGAON	5.10km
11	E-29	CONSTRUCTION OF AN EMBANKMENT ALONG THE R/B OF BURIDEHING RIVER FROM DEOCHALI HILL TO TIPLING GHAT PH-I (FAKIAL GRAZING)	8.25km
12	E-30	CONSTRUCTION OF AN EMBANKMENT ALONG THE R/B OF BURIDEHING RIVER FROM DEOCHALI HILL TO TIPLING GHAT PH-II (FAKIAL GRAZING)	11.33km
13	E-28	CONSTRUCTION OF AN EMBANKMENT ALONG THE L/B OF TIPLING RIVER	4.00km
14	E-27	CONSTRUCTION OF AN EMBANKMENT ALONG THE TIPLING BRIDGE TO TIPLING T.E.	3.80km
15	E-26	CONSTRUCTION OF T/DYKE ALONG THE R/B OF BURIDEHING RIVER FROM DEOCHALI TO TIPLING GHAT FROM NOWJAN TO RLY LINE - PH-III	1.50km
16	E-25	TRIBUTARY DYKE FROM BHEKULAJAN TO TIPLING	13.30km
17	E-24	TINGRAI L/B DYKE FROM BALIJAN TO TINGRAIMUKH	4.70km
18	E-23	RECLAIMATION OF LOW-LYING AREA NEAR TINGRAIMUKH IN KHEREMIA MOUZA (R/B OF AMILGURI T.E. TO TINGRAIMUKH)	5.40km
19	E-14	EXTENSION OF TENGAKHAT BUND UPTO JOKAI R.F.	20.20km
20	E-15	EXTENSION OF TENGAKHAT BUND FROM JOKAI R.F. TO A.T. ROAD	13.50km
21	E-9	DEHING MARGINAL BUND FROM KOTOHA TO BHOGAMUR	8.40km

PROTECTION REACHES

Sl. No.	Reach	Reach Length
AE-1	MANMOW PATHAR	800
AE-2	MOULANG GAON	1000
AE-3	BORFAKIAL-A	600
AE-4	BORFAKIAL-B	1000
AE-5	BANSBARI	1000
AE-6	Tantigather Manipuri Basti A	300
AE-7	Tantigather Manipuri Basti B	200
AE-8	Nocte Gaon	700
AE-9	Konwargaon A	600
AE-10	Konwargaon B	500
AE-11	Uttammati	650
AE-12	BAMUNGAON-1	280
AE-13	BAMUNGAON-2	340
AE-14	JAGUNGAON	600
AE-15	NAGAON 1	220
AE-16	NAGAON 2	595
AE-17	Bordoloichuk	700
AE-18	Mohmari	500
AE-19	AMGURI	500
AE-20	PANCHUTI	650
AE-21	TINGRAI NEPALIGAON A	450
AE-22	TINGRAI NEPALIGAON B	90
AE-23	TINGRAI NEPALIGAON C	410
AE-24	KAIBARTAGAON	400
AE-25	URIAMGURI	700
AE-26	BAMUNIBEEL	300
AE-27	KOLAGORA	400
AE-28	SESSA NEPALI	600
AE-29	DEHINGHOLLA	1000
AE-30	AGHUNIBARI	300
AE-31	SOLOGURI	500
AE-32	TELPANI BONGAON	500
AE-33	KORAIGURI	500
AE-34	SINGIMARI	500
AE-35	BHURBHURI-1	2150
AE-36	BHURBHURI-2	515
AE-37	BORBEEL A	525
AE-38	BORBEEL B	400
AE-39	Charaibabi Khamtighat	880
AE-40	Kokhai Deori gaon	1125
AE-41	NATUNBOLAI	600
AE-42	Kotoha	675
AE-43	Bhogamur-A	600
AE-44	Bhogamur-B	300
AE-45	Panimiri	450
AE-46	Jhanimukh Gaon	500
AE-47	Sessaughat-A	300
AE-48	Sessaughat-B	300
AE-49	Charaibabi	500
AE-50	Itakhuli	700
AE-51	Thangson	700

LEGEND:

Legend

- Proposed Protection Reaches
- Existing/Uprgaaded Embankment
- Embankment Proposed of Upgradation/Extension

BENIFITED AREA - 328SQ.KM

Certified that the survey & drawing have been check & found correct

A.E.
Dibrugarh W.R.D

A.E.E.
Dibrugarh W.R.D.

Certified that the survey & drawing have been randomly checked & found correct

Executive Engineer
Dibrugarh W.R. Division
Dibrugarh

Kilometers
0 2 4 8 12 16

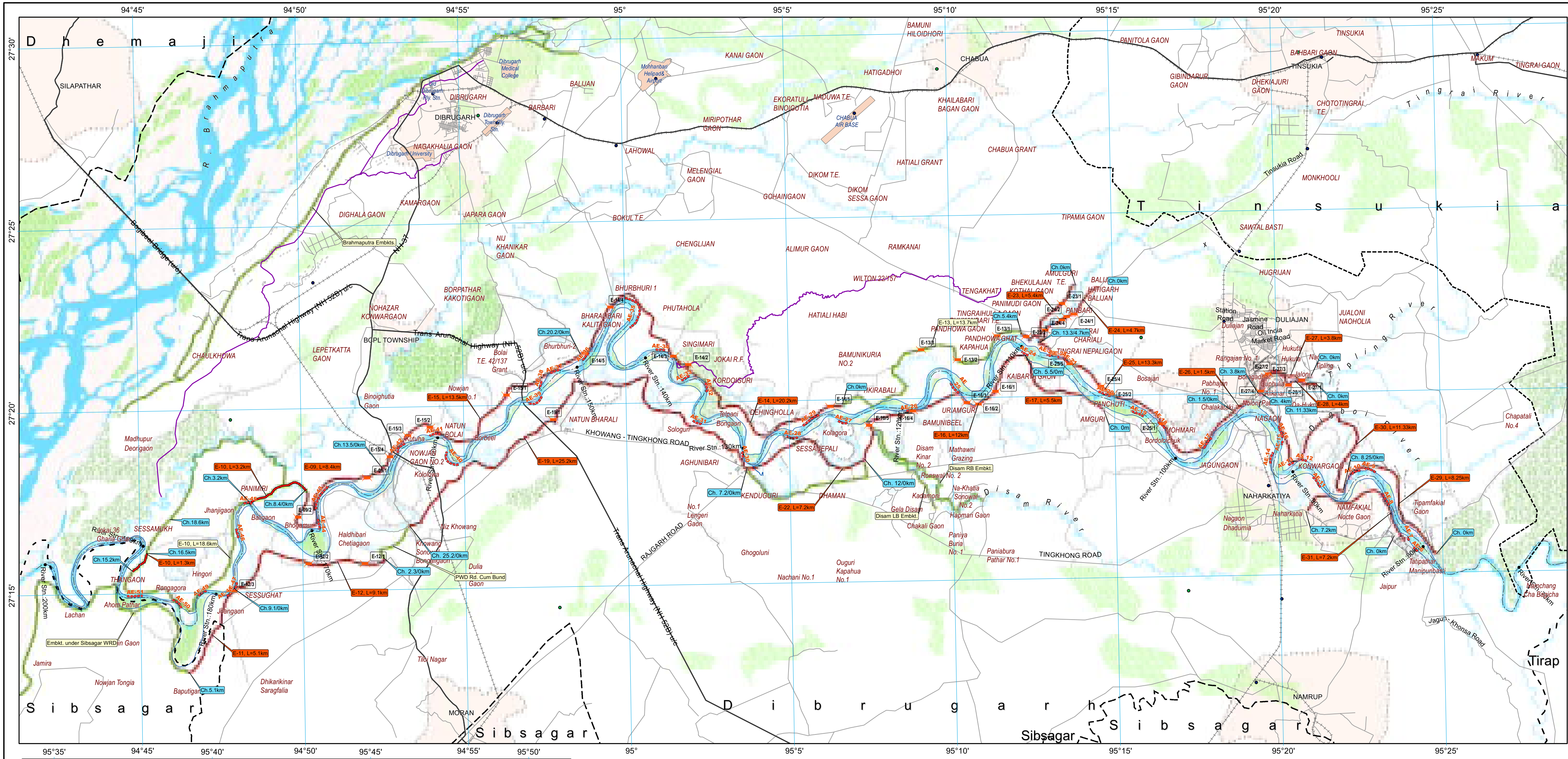
Govt. of Assam
Water Resource Department
Dibrugarh W.R. Division, Dibrugarh

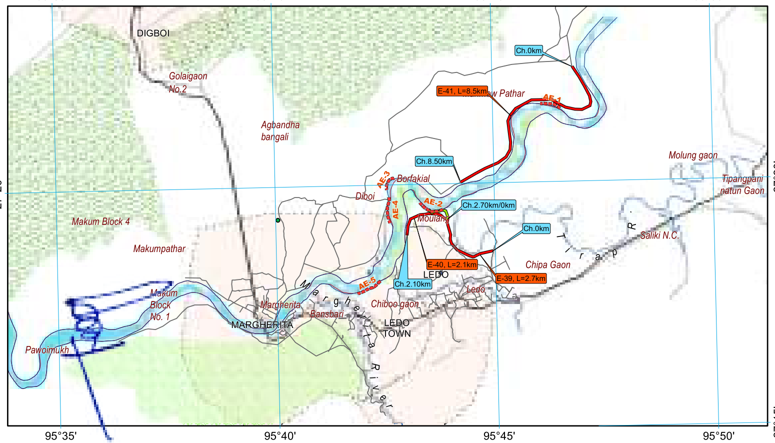
NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF RIVER BURIDEHING

INDEX MAP

Drawing No.
Date:
Rev:

Executive Engineer
Dibrugarh W.R. Division
Dibrugarh





PROTECTION REACHES

Sl. No.	Reach	Reach Length	Sl. No.	Reach	Reach Length
AE-1	MANMOW PATHAR	800	AE-26	BAMUNIBEEL	300
AE-2	MOULANG GAON	1000	AE-27	KOLAGORA	400
AE-3	BORFAKIAL-A	600	AE-28	SESSA NEPALI	600
AE-4	BORFAKIAL-B	1000	AE-29	DEHINGHOLLA	1000
AE-5	BANSBARI	1000	AE-30	AGHUNIBARI	300
AE-6	Tantipather Manipuri Basti A	300	AE-31	SOLOGURI	500
AE-7	Tantipather Manipuri Basti B	200	AE-32	TELPANI BONGAON	500
AE-8	Nocte Gaon	700	AE-33	KORAIGURI	500
AE-9	Konwargaon A	600	AE-34	SINGIMARI	500
AE-10	Konwargaon B	500	AE-35	BHURBHURI-1	2150
AE-11	Uttammati	650	AE-36	BHURBHURI-2	515
AE-12	BAMUNGAON-1	280	AE-37	BORBEEL A	525
AE-13	BAMUNGAON-2	340	AE-38	BORBEEL B	400
AE-14	JAGUNGAON	600	AE-39	Charaihabi Khamtighat	880
AE-15	NAGAON 1	220	AE-40	Kolotua Deori gaon	1125
AE-16	NAGAON 2	595	AE-41	NATUNBOLAI	600
AE-17	Bordoloichuk	700	AE-42	Kotoha	675
AE-18	Mohmari	500	AE-43	Bhogamur-A	600
AE-19	AMGURI	150	AE-44	Bhogamur-B	300
AE-20	PANCHUTI	650	AE-45	Panimiri	450
AE-21	TINGRAI NEPALIGAON A	450	AE-46	Jhanjimukh Gaon	500
AE-22	TINGRAI NEPALIGAON B	90	AE-47	Sessuaghat-A	300
AE-23	TINGRAI NEPALIGAON C	410	AE-48	Sessuaghat-B	300
AE-24	KAIBARTAGAON	400	AE-49	Charaibahi	500
AE-25	URIAMGURI	700	AE-50	Itakhuli	700
			AE-51	Thangaon	700

List of Embankment for New Construction and Upgradation

Code	Name of Embankment	Bank	Length in m	Code	Name of Embankment	Bank	Length in m
E-09	DEHING MARGINAL BUND FROM KOTOHA TO BHOGAMUR	R/B	8400	E-24	TINGRAI L/B DYKE FROM BALIJAN TO TINGRAIMUKH	R/B	4700
E-10	EXTENSION OF DEHING BUND FROM BHOGAMUR TO SESSAMUKH	R/B	4500	E-25	TRIBUTARY DYKE FROM BHEKULAJAN TO TIPLING	R/B	13300
E-11	DEHING BUND OLD A.T. ROAD FROM SESSUGHAT TO JAGUNGAON	L/B	5100	E-26	CONSTRUCTION OF T/DYKE ALONG THE R/B OF BURIDEHING RIVER FROM DEOCHALI TO TIPLING GHAT FROM NOWJAN TO RLY LINE - PH-III	R/B	1500
E-12	DEHING BUND 1ST SECTION FROM AGHUNIBARI TO SESSUGHAT(UNDER DIBRUGARH EAST WR SUB-DIVN)	L/B	9100	E-27	CONSTRUCTION OF AN EMBANKMENT ALONG THE TIPLING BRIDGE TO TIPLING T.E.	R/B	3800
E-14	EXTENSION OF TENGAKHAT BUND UPTO JOKAI R.F.	R/B	20200	E-28	CONSTRUCTION OF AN EMBANKMENT ALONG THE L/B OF TIPLING RIVER	R/B	4000
E-15	EXTENSION OF TENGAKHAT BUND FROM JOKAI R.F. TO A.T. ROAD	R/B	13500	E-29	CONSTRUCTION OF AN EMBANKMENT ALONG THE R/B OF BURIDEHING RIVER FROM DEOCHALI HILL TO TIPLING GHAT PH-I (EAKIAL GRAZING)	R/B	8250
E-16	EXTENSION OF SASSONI TINGKHONG BUND PH-I	L/B	12000	E-30	CONSTRUCTION OF AN EMBANKMENT ALONG THE R/B OF BURIDEHING RIVER FROM DEOCHALI HILL TO TIPLING GHAT PH-II (EAKIAL GRAZING)	R/B	11330
E-17	EXTENSION OF SASSONI TINGKHONG BUND PH-II	L/B	5500	E-31	T/DYKE ALONG THE L/B OF BURIDEHING RIVER FROM JOYPUR TO NAHARKATIA	L/B	7200
E-19	DEHING BUND 1ST SECTION FROM AGHUNIBARI TO SESSUGHAT (UNDER DIBRUGARH WEST WR SUB-DIVN)	L/B	25200	E-39	T/DYKE ALONG THE L/B OF BURIDEHING RIVER FROM CHIPPIBASTI TO MOLONG GAON	L/B	2700
E-22	TIE-BUND OF GELA DESAM	L/B	7200	E-40	EXTENSION OF T/DYKE ALONG THE L/B OF BURIDEHING RIVER FROM CHIPPIBASTI TO MOLONG GAON	L/B	2100
E-23	RECLAIMATION OF LOW-LYING AREA NEAR TINGRAIMUKH IN KHEREMIA MOUZA (R/B OF AMILGURI T.E. TO TINGRAIMUKH)	R/B	5400	E-41	PROPOSED EMBANKMENT AT MAICHANG PATHAR	R/B	8500
					Total		118200

Legend

- Proposed Renovation of Sluice Gate
- AE Reaches
- Major Road
- Bank Line 2019-20
- Bank Line 2009-10
- roads_minor
- Railway_Line
- Sand Bar (Vegitated)
- Sand Bar
- River
- Existing Embankment
- Prop. R/S works on Embankment
- Forest_NP
- lowland
- Tea Garden
- Thickly_Populated_Area

N W E S

0 1.5 3 6 9 12 Kilometers

Coordinate System: WGS 1984 UTM Zone 46N
Central Meridian: 93°0'0"E

Certified that the survey & drawing have been check & found correct

A.E.
Dibrugarh W.R.D

A.E.E.
Dibrugarh W.R.D.

Certified that the survey & drawing have been randomly checked & found correct

Executive Engineer
Dibrugarh W.R. Division
Dibrugarh

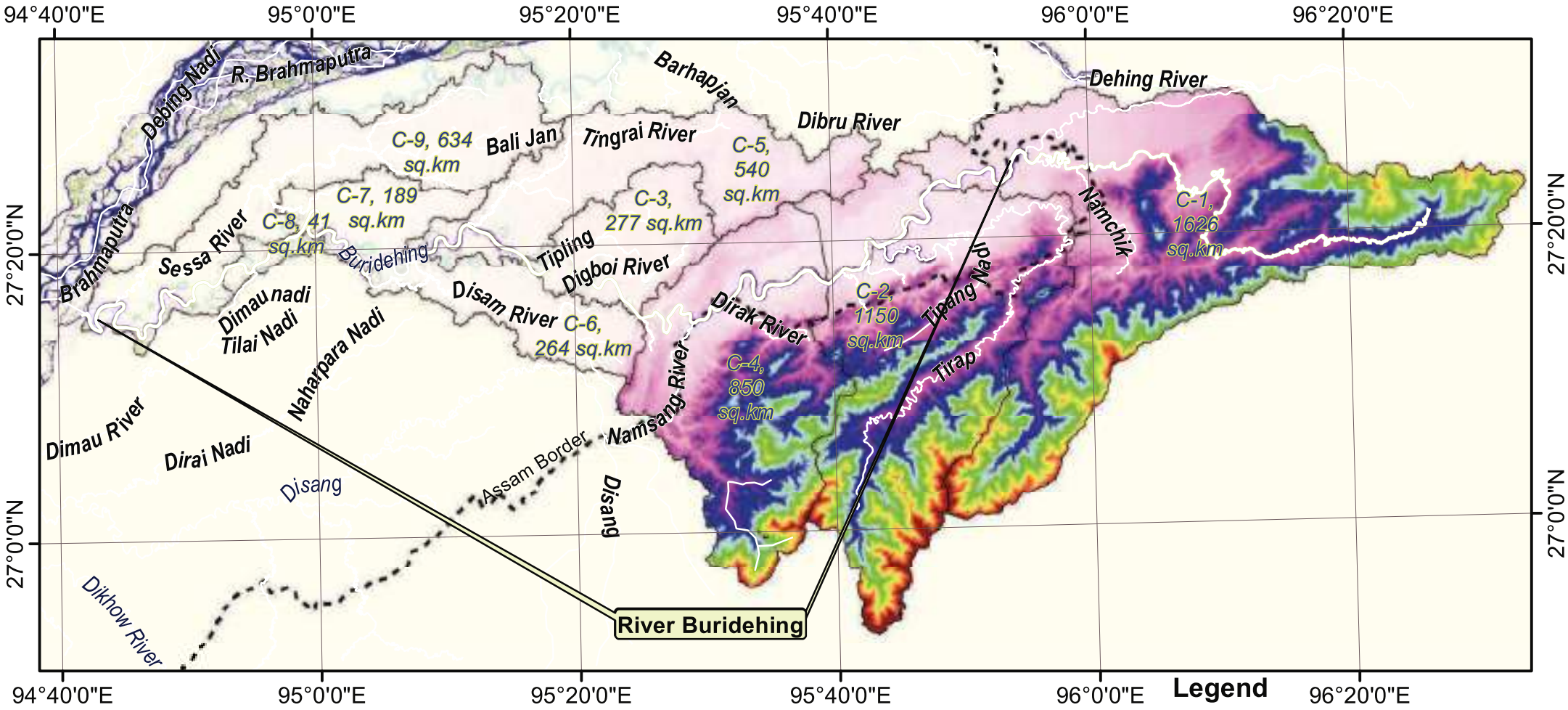
Govt. of Assam
Water Resource Department
Dibrugarh W.R. Division, Dibrugarh

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF RIVER BURIDEHING

TITLE: PLAN

Drawing No.
Date:
Rev:

Executive Engineer
Dibrugarh W.R. Division
Dibrugarh



River Location	River Station	Sub-Catchment Zones	Catchment Area
1, Tokowpathar	16 km	C-1	1626 sq.km
2, Margherita NH Bridge	38.5 km	C-1, C-2	2776 sq.km
3, Tatipathar Manipuri Basti, Naharkatia	78.2 km	C-1, C-2, C-3	3626 sq.km
4, Gabharu Bridge, Mohmari	102.2 km	C-1, C-2, C-3, C-4	3903 sq.km
5, Tilirabali	121 km	C-1, C-2, C-3, C-4, C-5	4443 sq.km
6, D/S Gela-disam Outfall, Aghunibari	129 km	C-1, C-2, C-3, C-4, C-5, C-6	4707 sq.km
7, Bhurbhuri	149.5 km	C-1, C-2, C-3, C-4, C-5, C-6, C-7	4896 sq.km
8, Chenimari	162.5 km	C-1, C-2, C-3, C-4, C-5, C-6, C-7, C-8	4937 sq.km
9, Brahmaputra Outfall, Dehingmukh	200 km	C-1, C-2, C-3, C-4, C-5, C-6, C-7, C-8, C-9	5571 sq.km

Chainage 0km of Buridehing River considered at Assam-Arunachal Pradesh Border

Legend

rivers

assam boundary

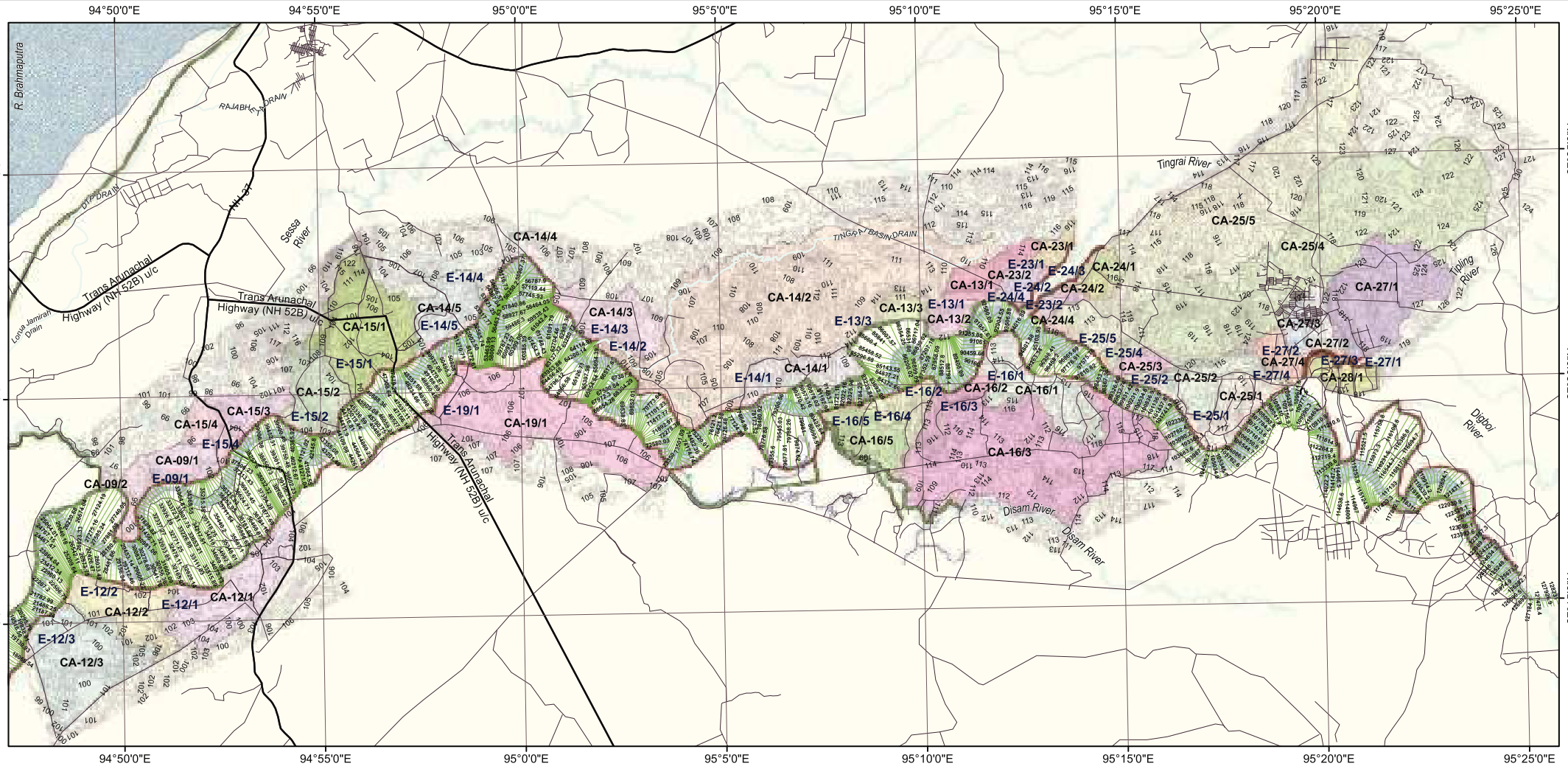
Terrain Elevation

R.L.

High : 2428m

Low : 83m

CATCHMENT AREA MAP OF RIVER BURIDEHING



Legend

- Sluice Gate
- Contours
- HECRAS - XSCutLines
- Major Road
- Other Roads
- River
- Drains

Catchment Areas

- CA: 09/1, Area = 4 Sq.km
- CA: 09/2, Area = 4 Sq.km
- CA: 12/1, Area = 14 Sq.km
- CA: 12/2, Area = 9 Sq.km
- CA: 12/3, Area = 15 Sq.km
- CA: 13/1, Area = 5 Sq.km
- CA: 13/2, Area = 3 Sq.km
- CA: 13/3, Area = 2 Sq.km
- CA: 14/1, Area = 7 Sq.km
- CA: 14/2, Area = 60 Sq.km
- CA: 14/3, Area = 8 Sq.km
- CA: 14/4, Area = 4 Sq.km
- CA: 14/5, Area = 6 Sq.km
- CA: 15/1, Area = 15 Sq.km
- CA: 15/2, Area = 8 Sq.km
- CA: 15/3, Area = 4 Sq.km
- CA: 15/4, Area = 3 Sq.km
- CA: 16/1, Area = 10 Sq.km
- CA: 16/2, Area = 1 Sq.km
- CA: 16/3, Area = 39 Sq.km
- CA: 16/4, Area = 4 Sq.km
- CA: 16/5, Area = 6 Sq.km
- CA: 19/1, Area = 25 Sq.km
- CA: 23/1, Area = 2 Sq.km
- CA: 23/2, Area = 3 Sq.km
- CA: 24/1, Area = 2 Sq.km
- CA: 24/2, Area = 1 Sq.km
- CA: 24/3, Area = 1 Sq.km
- CA: 24/4, Area = 1 Sq.km
- CA: 25/1, Area = 7 Sq.km
- CA: 25/2, Area = 7 Sq.km
- CA: 25/3, Area = 2 Sq.km
- CA: 25/4, Area = 53 Sq.km
- CA: 25/5, Area = 48 Sq.km
- CA: 27/1, Area = 16 Sq.km
- CA: 27/2, Area = 3 Sq.km
- CA: 27/3, Area = 2 Sq.km
- CA: 27/4, Area = 3 Sq.km
- CA: 28/1, Area = 3 Sq.km

0 1.75 3.5 7 10.5 14 Kilometers

Coordinate System: WGS 1984 UTM Zone 46N
Central Meridian: 93°0'0"E

Certified that the survey & drawing have been check & found correct

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Dibrugarh W.R.D

A.E.E.
Dibrugarh W.R.D.

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Executive Engineer
Dibrugarh W.R. Division
Dibrugarh

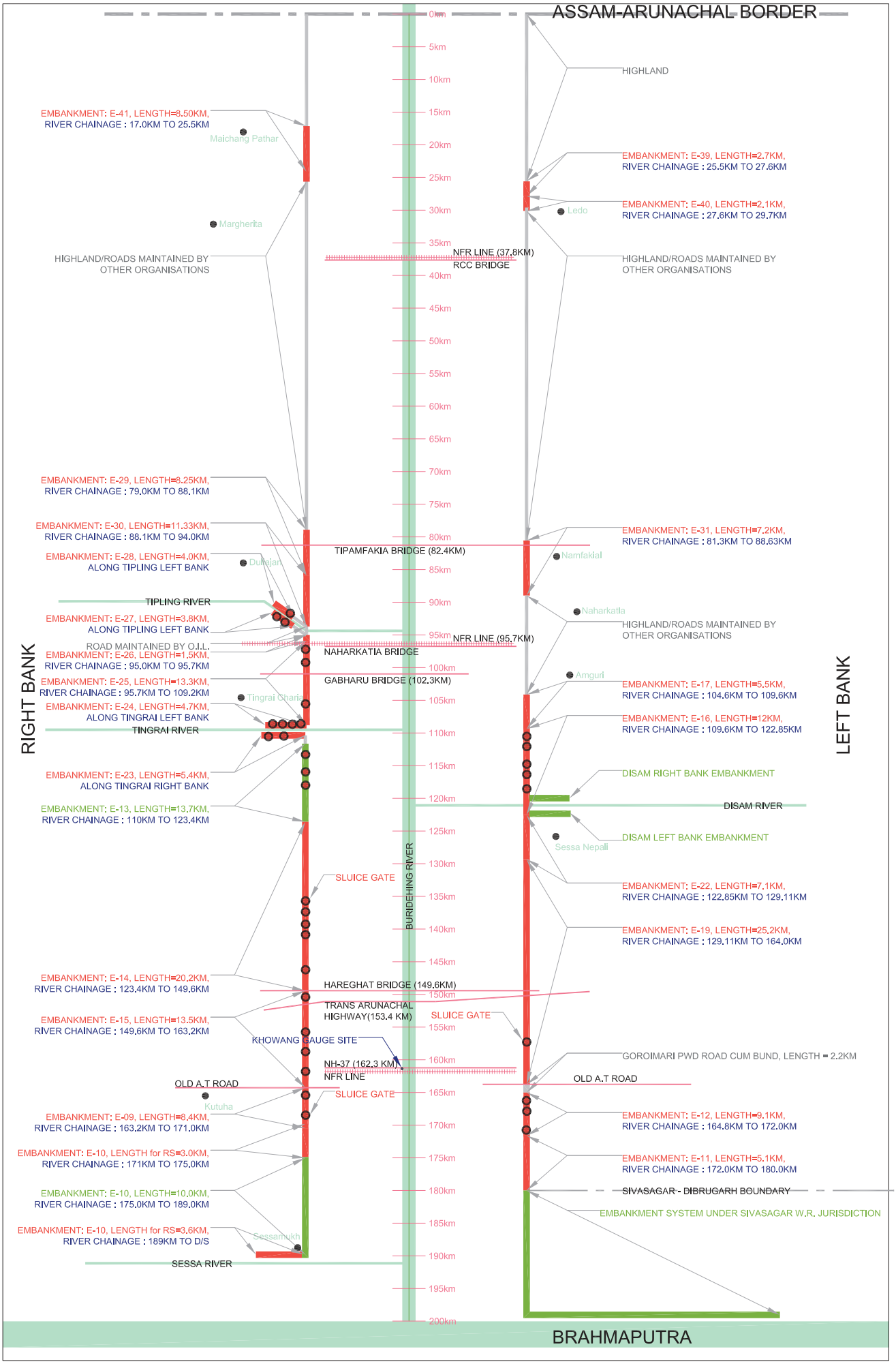
Govt. of Assam
Water Resource Department
Dibrugarh W.R. Division, Dibrugarh

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF RIVER BURIDEHING

TITLE: CATCHMENT DELINEATION MAP FOR SLUICE GATES

Drawing No.
Date:
Rev:

Executive Engineer
Dibrugarh W.R. Division
Dibrugarh



E-9	DEHING MARGINAL BUND FROM KOTOHA TO BHOGAMUR	8.4KM
E-10	EXTN. OF TENGAKHAT BUND FROM BHOGAMUR TO SESSAMUKH	18.6KM
E-11	DEHING BUND OLD A.T. ROAD FROM SESSUGHAT TO JAGUNGAON	5.1KM
E-12	DEHING BUND 1ST SECTION FROM AGHUNIBARI TO SESSUGHAT	9.1KM
E-13	FLOOD PROTECTION OF TENGAKHAT MOUZA	13.7KM
E-14	EXTENSION OF TENGAKHAT BUND UPTO JOKAI R.F.	20.2KM
E-15	EXTENSION OF TENGAKHAT BUND FROM JOKAI R.F. TO A.T. ROAD	13.5KM
E-40	PROPOSED DYKE SURROUNDING MOULONG	2.1 KM

E-16	EXTENSION OF SASSONI TINGKHONG BUND PH-I	13.0KM
E-17	EXTENSION OF SASSONI TINGKHONG BUND PH-II	5.5KM
E-19	DEHING BUND 1ST SECTION FROM AGHUNIBARI TO SESSUGHAT	25.2KM
E-22	TIE-BUND OF GELA DESAM	7.1KM
E-23	RECLAIMATION OF LOW-LYING AREA NEAR TINGRAIMUKH IN KHEREMIA MOUZA (R/B OF AMILGURI T.E. TO TINGRAIMUKH)	5.4KM
E-24	TINGRAI L/B DYKE FROM BALIJAN TO TINGRAIMUKH	4.7KM
E-25	TRIBUTARY DYKE FROM BHEKULAJAN TO TIPLING	13.3KM
E-41	PROPOSED DYKE SURROUNDING MAICHANG PATHAR	8.5KM

E-26	CONSTRUCTION OF T/DYKE ALONG THE R/B OF BURIDEHING RIVER FROM DEOCHALI TO TIPLING GHAT FROM NOWJAN TO RLY LINE - PH-II	1.5KM
E-27	CONSTRUCTION OF AN EMBANKMENT ALONG THE TIPLING BRIDGE TO TIPLING T.E.	3.8KM
E-28	CONSTRUCTION OF AN EMBANKMENT ALONG THE L/B OF TIPLING RIVER	4.0KM
E-29	CONSTRUCTION OF AN EMBANKMENT ALONG THE R/B OF BURIDEHING RIVER FROM DEOCHALI HILL TO TIPLING GHAT PH-I (FAKIAL GRAZING)	8.25KM
E-30	CONSTRUCTION OF AN EMBANKMENT ALONG THE R/B OF BURIDEHING RIVER FROM DEOCHALI HILL TO TIPLING GHAT PH-II (FAKIAL GRAZING)	11.33KM
E-31	T/DYKE ALONG THE L/B OF BURIDEHING RIVER FROM JOYPUR TO NAHARKATIA	7.2KM
E-39	T/DYKE ALONG THE L/B OF BURIDEHING RIVER FROM CHIPPIBASTI TO MOLONG GAON	3.7KM

SCALE - NTS

GOVT. OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH WATER RESOURCES DIVISION
DIBRUGARH

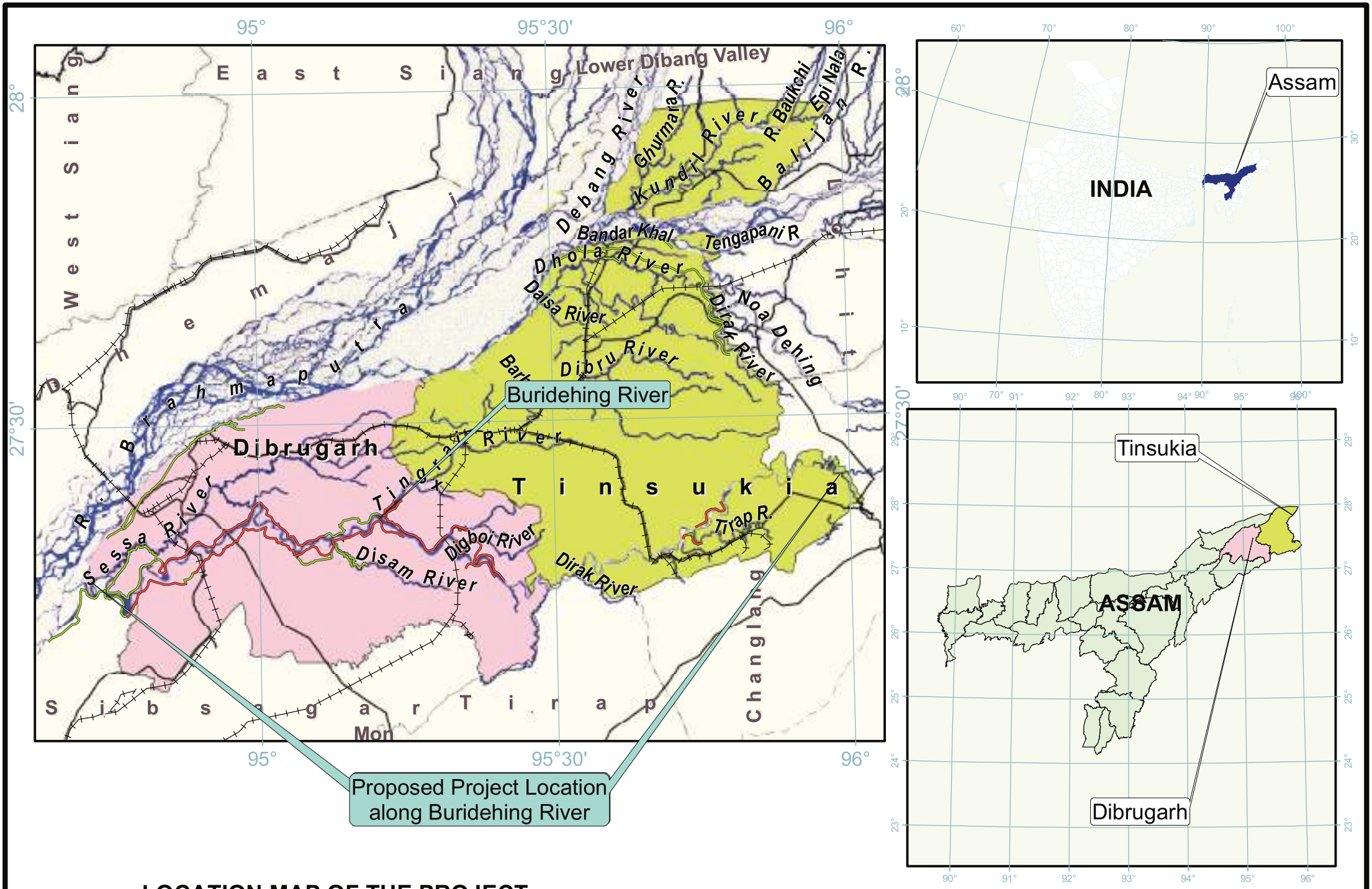
NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

LINE PLAN OFBURIDEHING EMBANKMENT SYSTEM

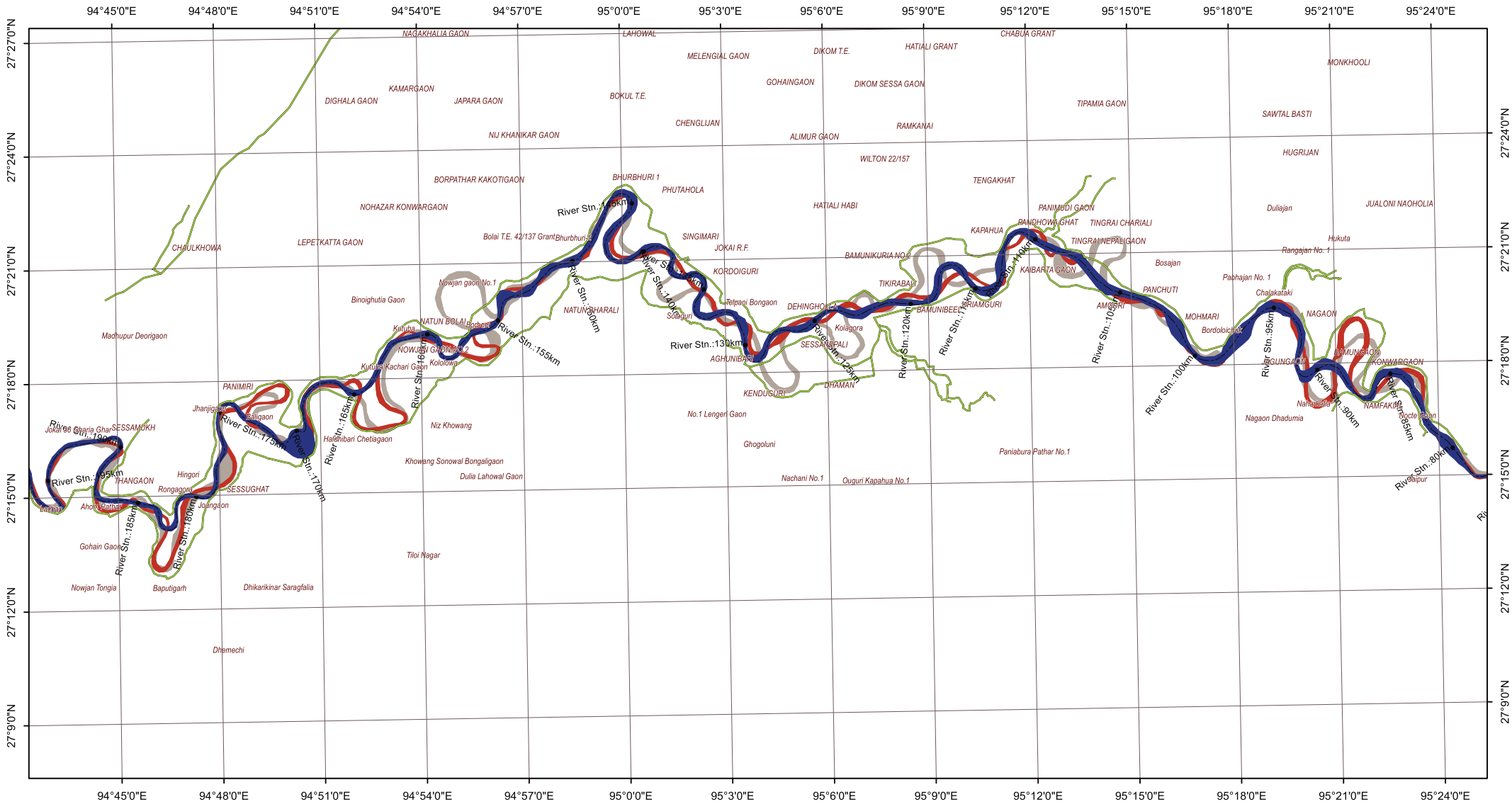
CHECKED BY:

AEE (T.C)

EXECUTIVE ENGINEER
DIBRUGARH W. R. DIVISION
DIBRUGARH



LOCATION MAP OF THE PROJECT



Legend

Embankments

- Embankments
- RIVER AS ON 2015
- RIVER AS ON 1977
- RIVER AS ON 1954

0 2.75 5.5 11 16.5 22 Kilometers

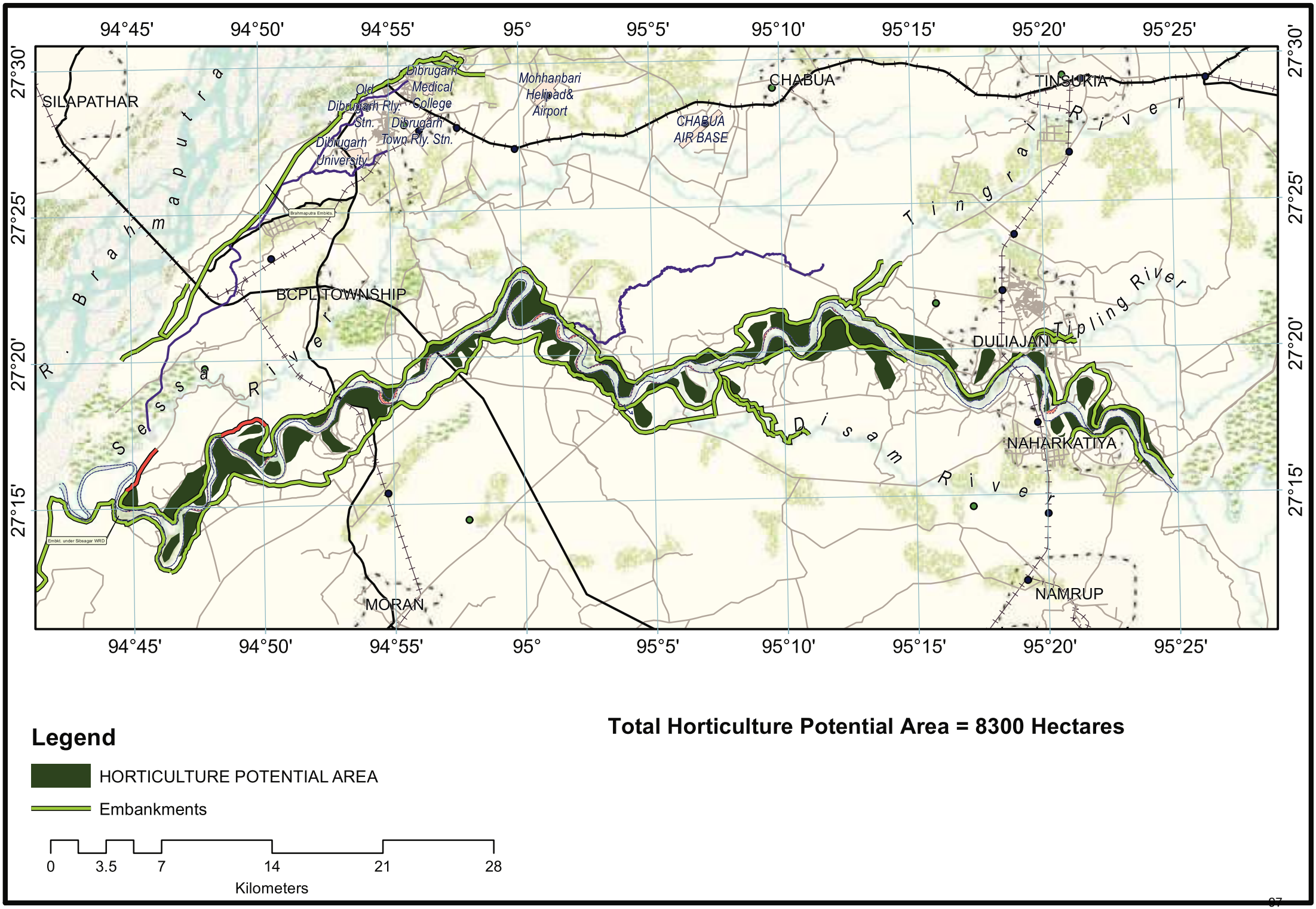
Coordinate System: WGS 1984 UTM Zone 46N
Central Meridian: 93°0'0"E

Govt. of Assam
Water Resource Department
Dibrugarh W.R. Division, Dibrugarh

NAME OF PROJECT: FLOOD MANAGEMENT OF RIVER BURIDEHING ALONG WITH ANTI-EROSION MEASURES

TITLE: Map showing the meandering of River Buridehing as on 2015 and 1977 W.R.T. that of 1954

Executive Engineer
Dibrugarh W.R. Division
Dibrugarh



Legend

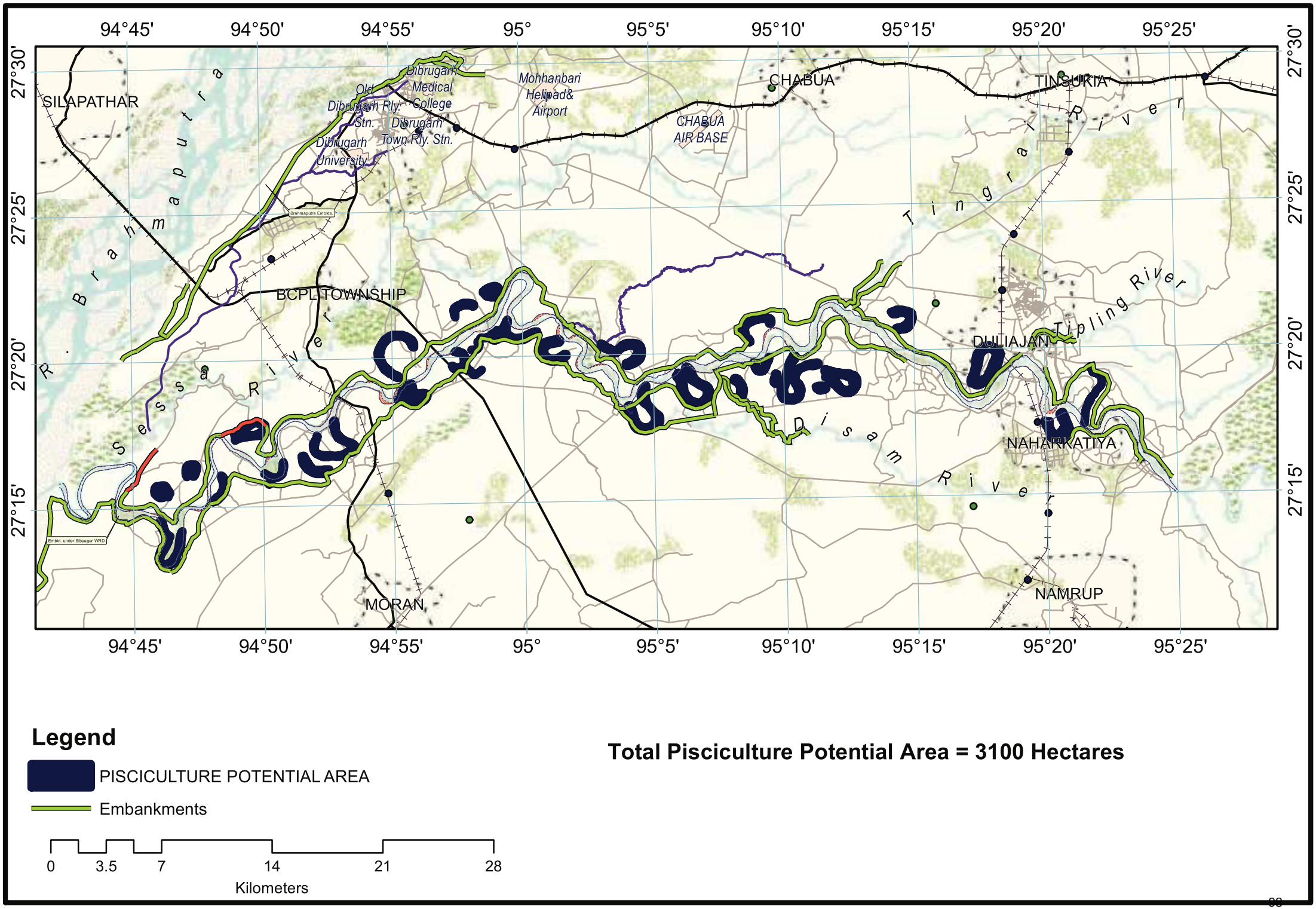
HORTICULTURE POTENTIAL AREA

Embankments

0 3.5 7 14 21 28

Kilometers

Total Horticulture Potential Area = 8300 Hectares



Legend

PISCICULTURE POTENTIAL AREA

Embankments

0 3.5 7 14 21 28

Kilometers

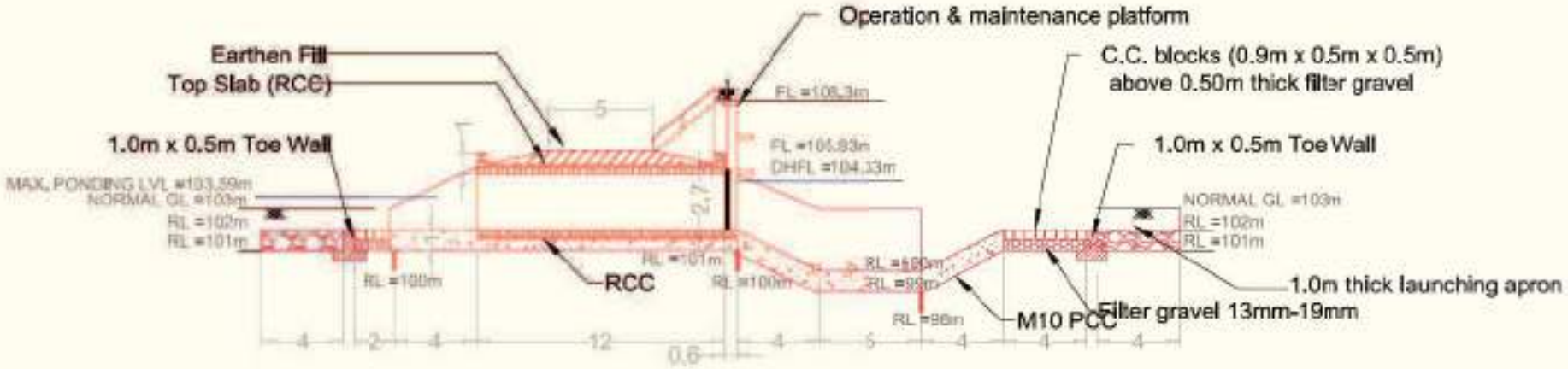
Total Pisciculture Potential Area = 3100 Hectares

CHAPTER – 12

Construction Drawings

Country Side

Buridehing Side



SCALE 1mm : 0.30m
(ALL DIMENSIONS ARE IN METRE)

SECTIONAL ELEVATION AT A-A

CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

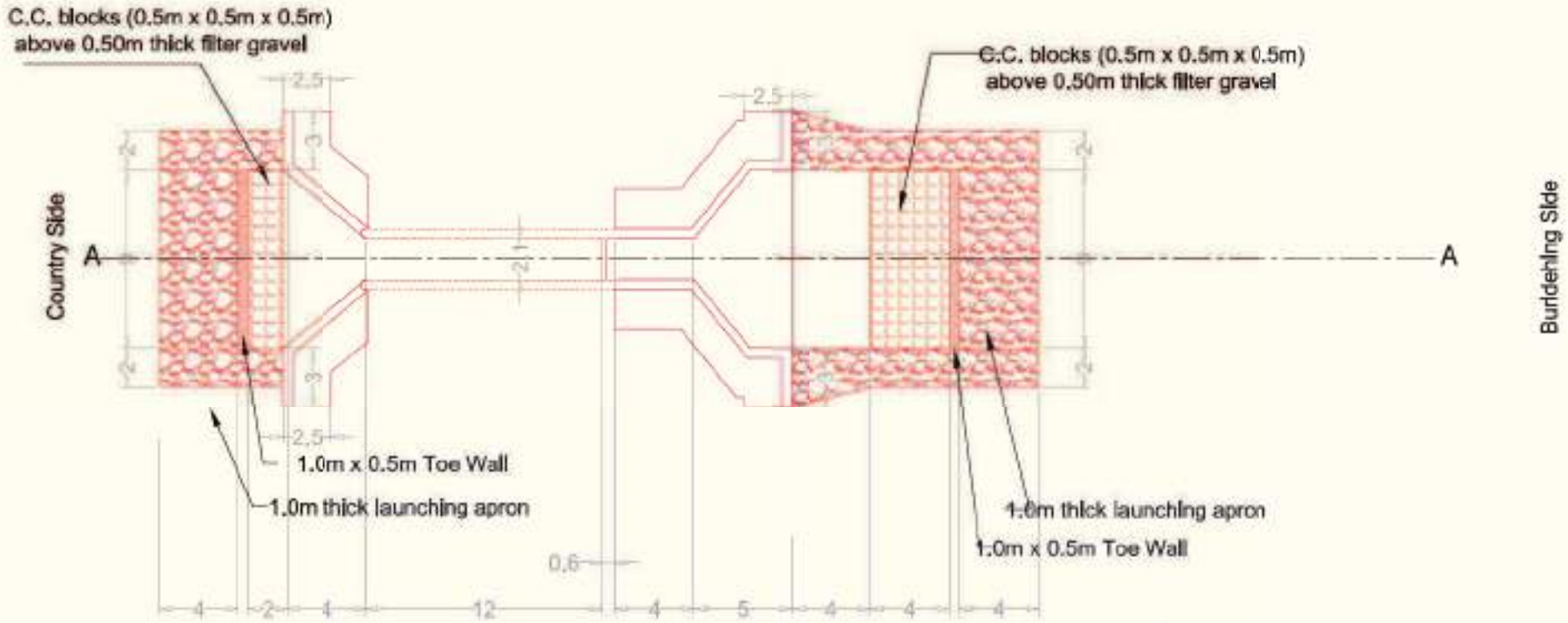
J.E./A.E.

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

A.E.E.

GOVT OF ASSAM WATER RESOURCES DEPARTMENT
OFFICE OF THE EXECUTIVE ENGINEER DIBRUGARH W.R. DIVISION , DIBRUGARH
Name of Project:- Integrated Water Resources Management of Buridehng Basin
ELEVATION OF SLUICE CULVERT NO. E-09/1

DIBRUGARH WR DIVISION
DIBRUGARH



PLAN

CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

J.E./A.E.

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A.E.E.

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GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

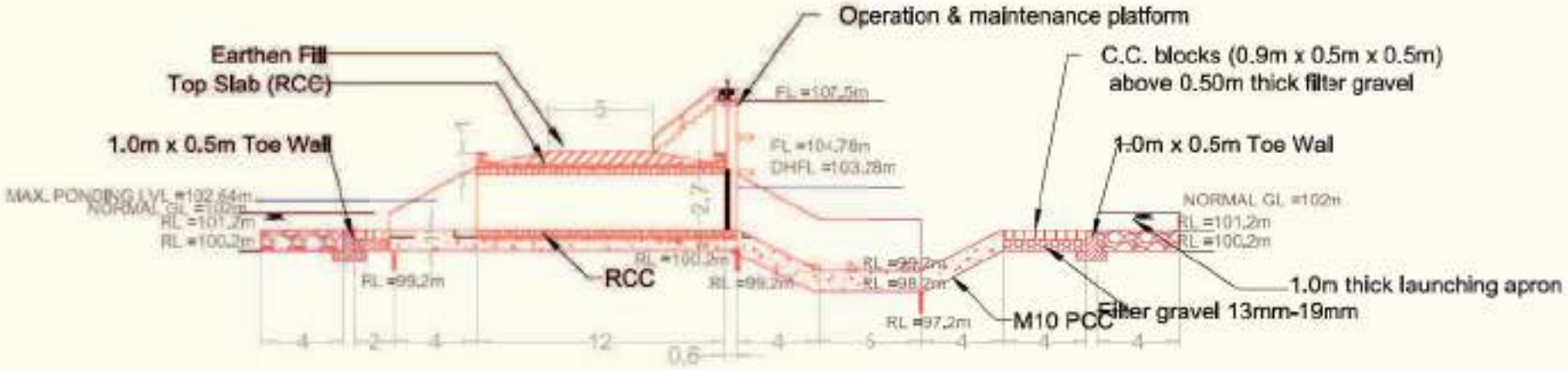
Name of Project:- Integrated Water Resources Management of Burldehing Basin

PLAN OF SLUICE CULVERT NO. E-09/1

DIBRUGARH W R DIVISION
DIBRUGARH

Country Side

Buridehing Side



SCALE 1mm : 0.30m
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SECTIONAL ELEVATION AT A-A

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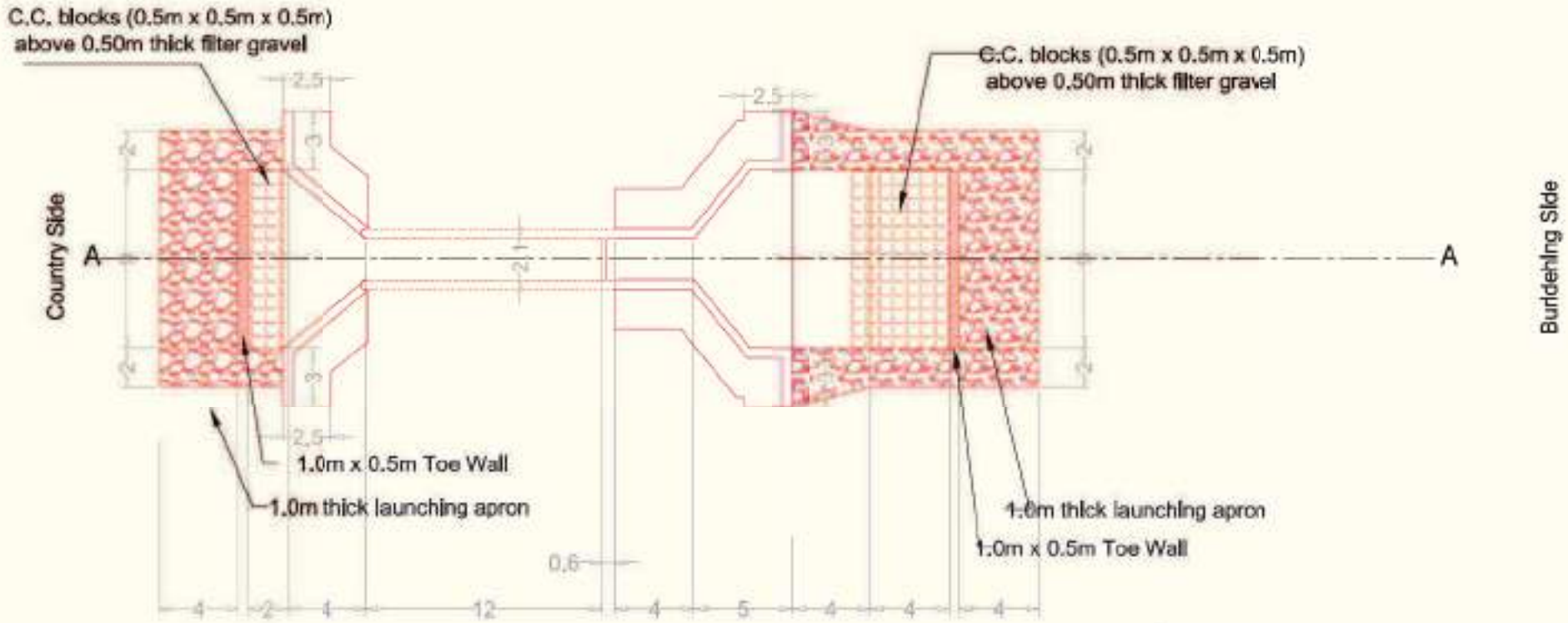
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

Name of Project:- Integrated Water Resources Management of Buridehng Basin

ELEVATICN OF SLUICE CULVERT NO. E-09/2

DIBRUGARH W R DIVISION
DIBRUGARH



PLAN

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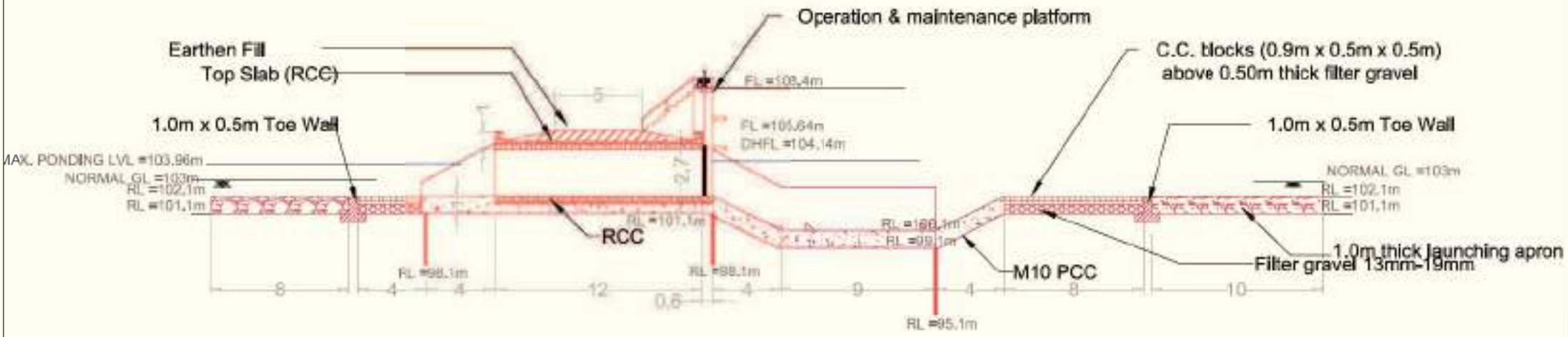
GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

Name of Project:- Integrated Water Resources Management of Burldehing Basin

PLAN OF SLUICE CULVERT NO. E-09/2

DIBRUGARH W R DIVISION
DIBRUGARH



SCALE 1mm : 0.30m
(ALL DIMENSIONS ARE IN METRE)

SECTIONAL ELEVATION AT A-A

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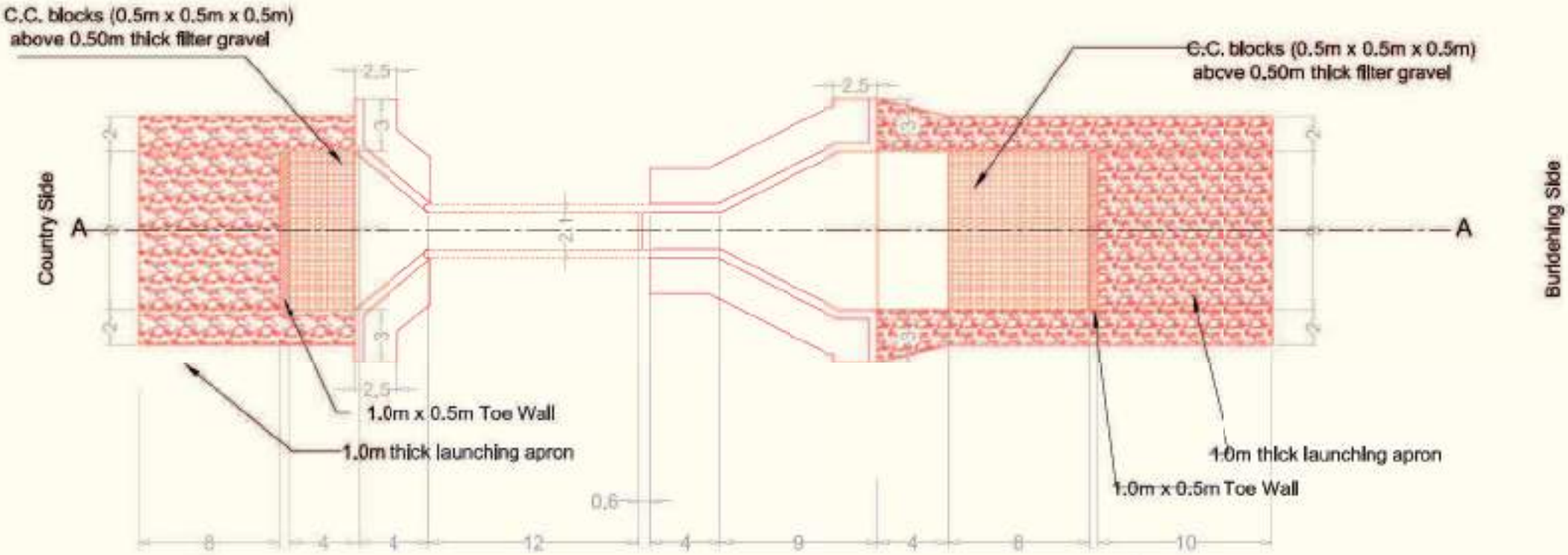
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

Name of Project:- Integrated Water Resources Management of Buridehng Basin

ELEVATION OF SLUICE CULVERT NO. E-12/1

DIBRUGARH W R DIVISION
DIBRUGARH



PLAN

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WATER RESOURCES DEPARTMENT

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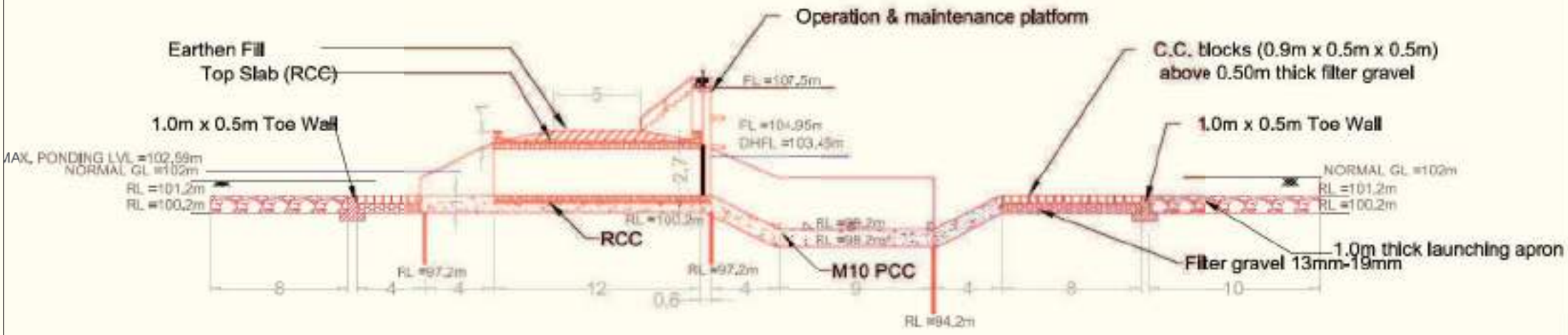
DIBRUGARH W.R. DIVISION , DIBRUGARH

Name of Project:- Integrated Water Resources Management of Burideihing Basin

PLAN OF SLUICE CULVERT NO. E-12/1

DIBRUGARH W R DIVISION
DIBRUGARH



SCALE 1mm : 0.30m
(ALL DIMENSIONS ARE IN METRE)

SECTIONAL ELEVATION AT A-A

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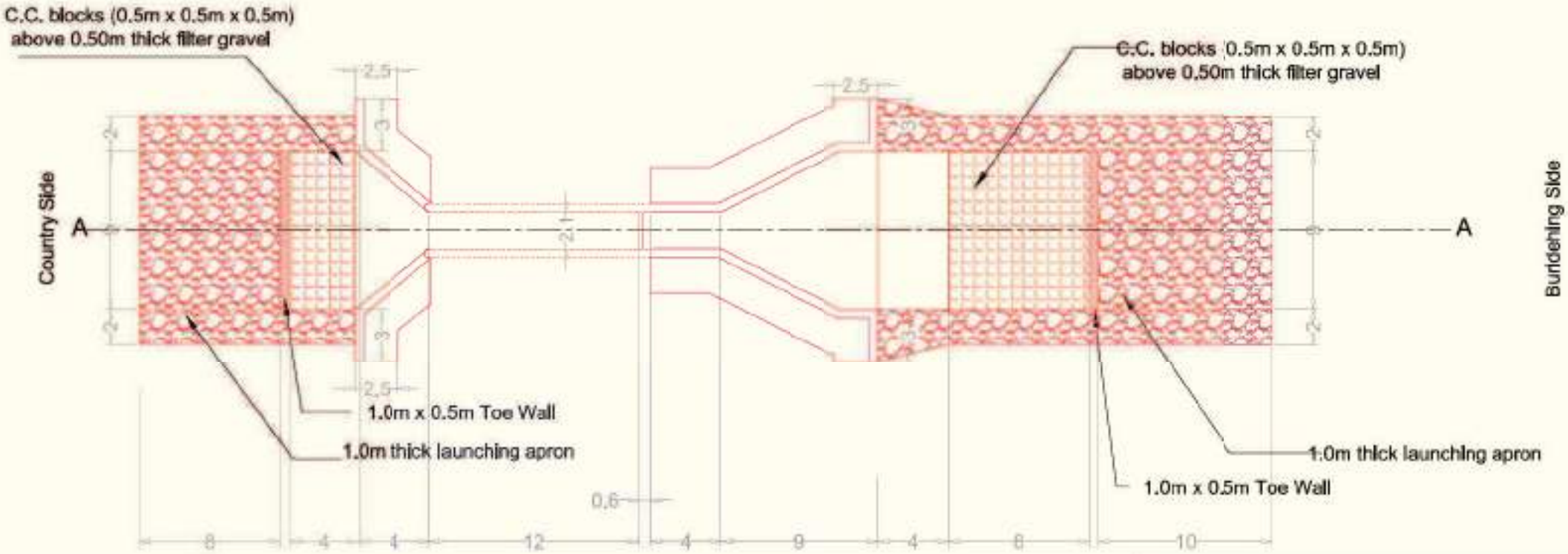
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

Name of Project:- Integrated Water Resources Management of Buridehng Basin

ELEVATION OF SLUICE CULVERT NO. E-12/2

DIBRUGARH W R DIVISION
DIBRUGARH



PLAN

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A.E.E.

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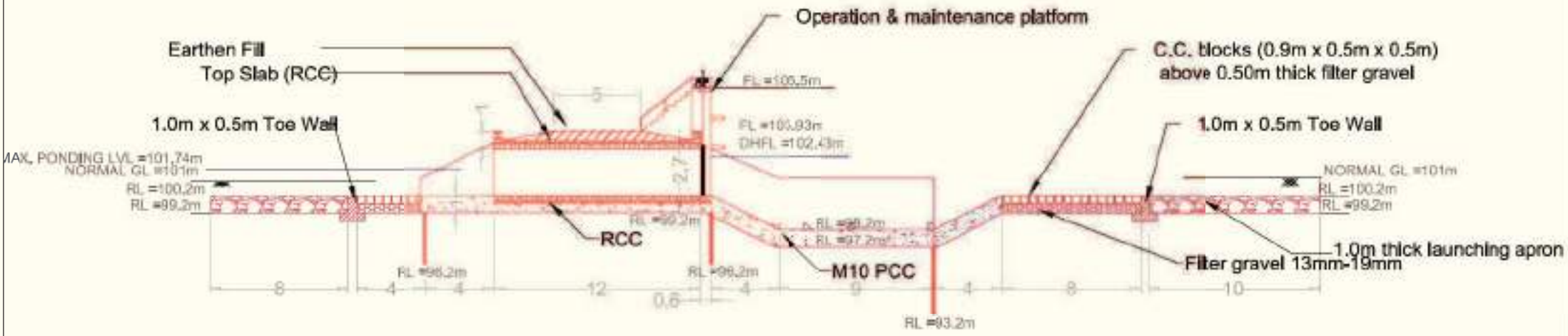
GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

Name of Project:- Integrated Water Resources Management of Burldehing Basin

PLAN OF SLUICE CULVERT NO. E-12/2

DIBRUGARH W.R DIVISION
DIBRUGARH



SCALE 1mm : 0.30m
(ALL DIMENSIONS ARE IN METRE)

SECTIONAL ELEVATION AT A-A

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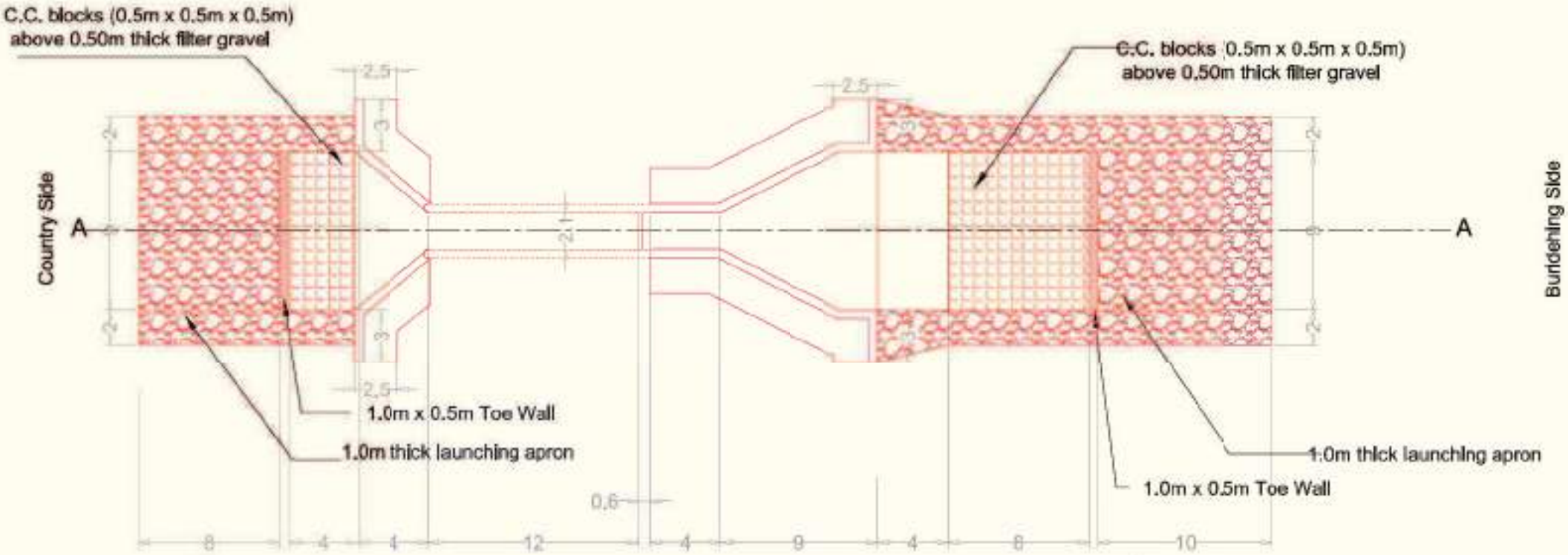
GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

Name of Project:- Integrated Water Resources Management of Buridehng Basin

ELEVATION OF SLUICE CULVERT NO. E-12/3

DIBRUGARH W R DIVISION
DIBRUGARH



PLAN

CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

J.E./A.E.

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

A.E.E.

(ALL DIMENSIONS ARE IN METRE)

GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

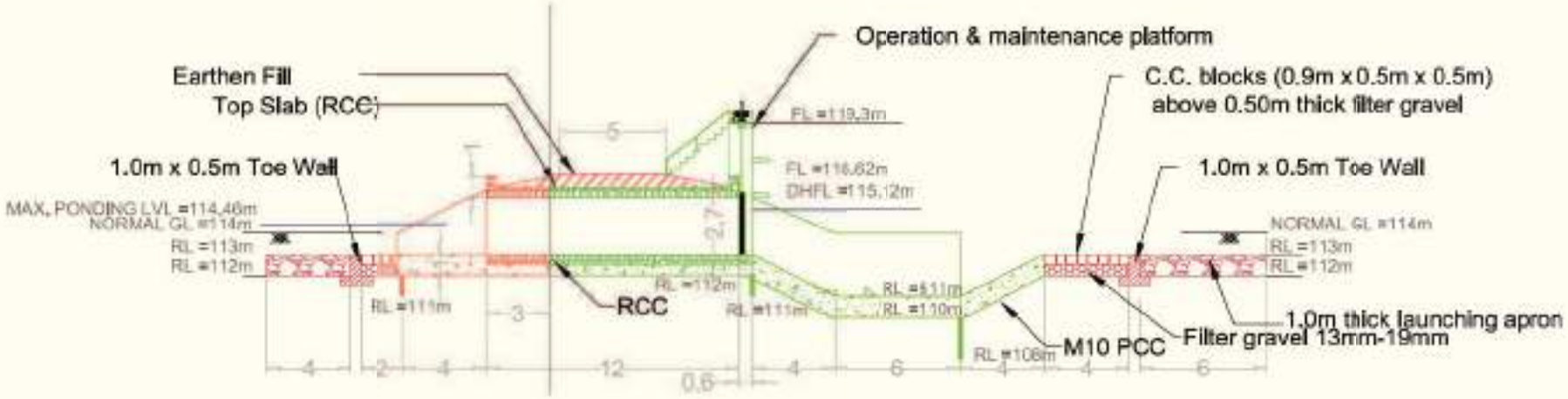
Name of Project:- Integrated Water Resources Management of Burideihing Basin

PLAN OF SLUICE CULVERT NO. E-12/3

DIBRUGARH W R DIVISION
DIBRUGARH

Country Side

Buridehing Side



SCALE 1mm : 0.30m
(ALL DIMENSIONS ARE IN METRE)

SECTIONAL ELEVATION AT A-A

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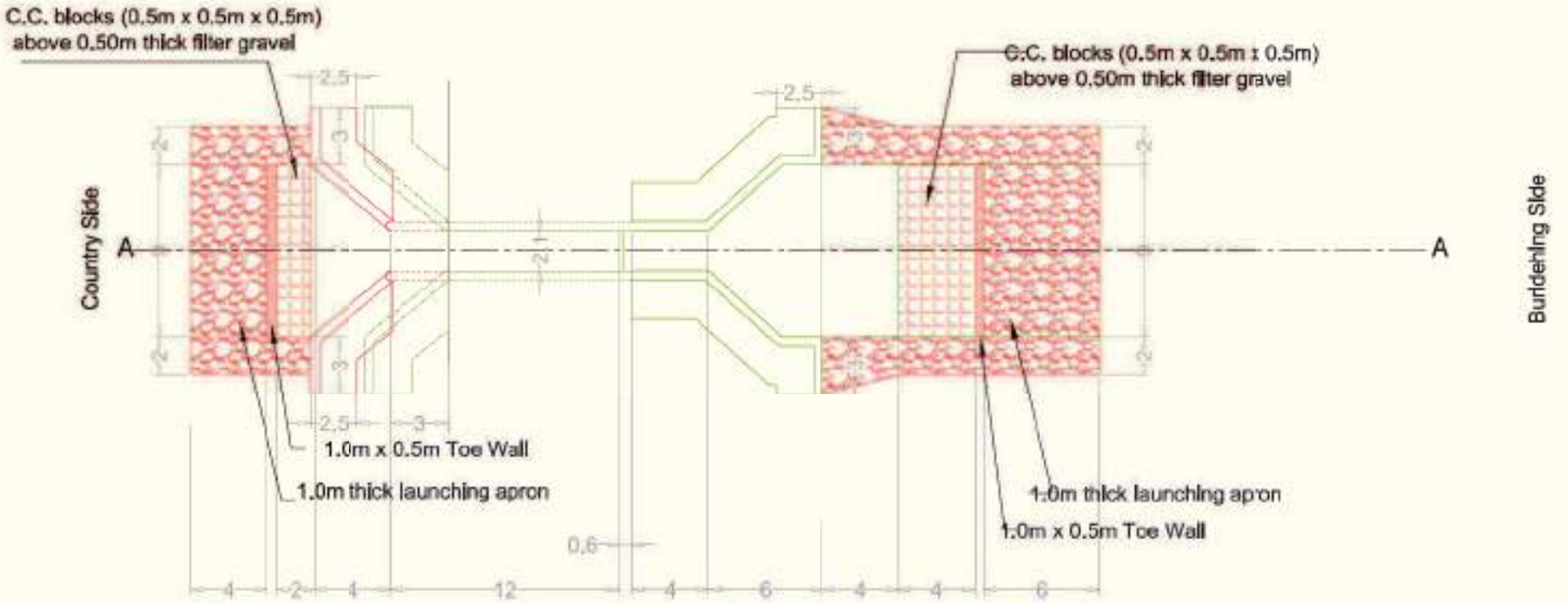
GOVT OF ASSAM WATER RESOURCES DEPARTMENT
OFFICE OF THE EXECUTIVE ENGINEER DIBRUGARH W.R. DIVISION , DIBRUGARH
Name of Project:- Integrated Water Resources Management of Buridehng Basin
ELEVATION OF SLUICE CULVERT NO. E-13/1

DIBRUGARH W R DIVISION
DIBRUGARH



PLAN

CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

J.E./A.E.

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

A.E.E.

(ALL DIMENSIONS ARE IN METRE)

GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

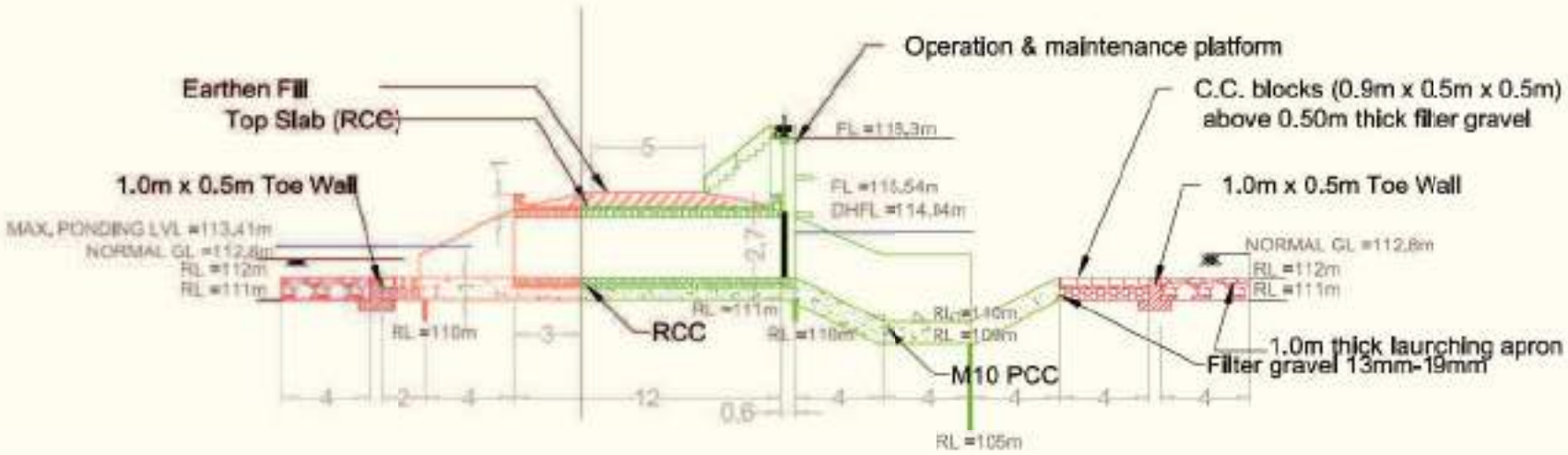
Name of Project:- Integrated Water Resources Management of Burideihing Basin

PLAN OF SLUICE CULVERT NO. E-13/1

DIBRUGARH W.R DIVISION
DIBRUGARH

Country Side

Buridehing Side



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SECTIONAL ELEVATION AT A-A

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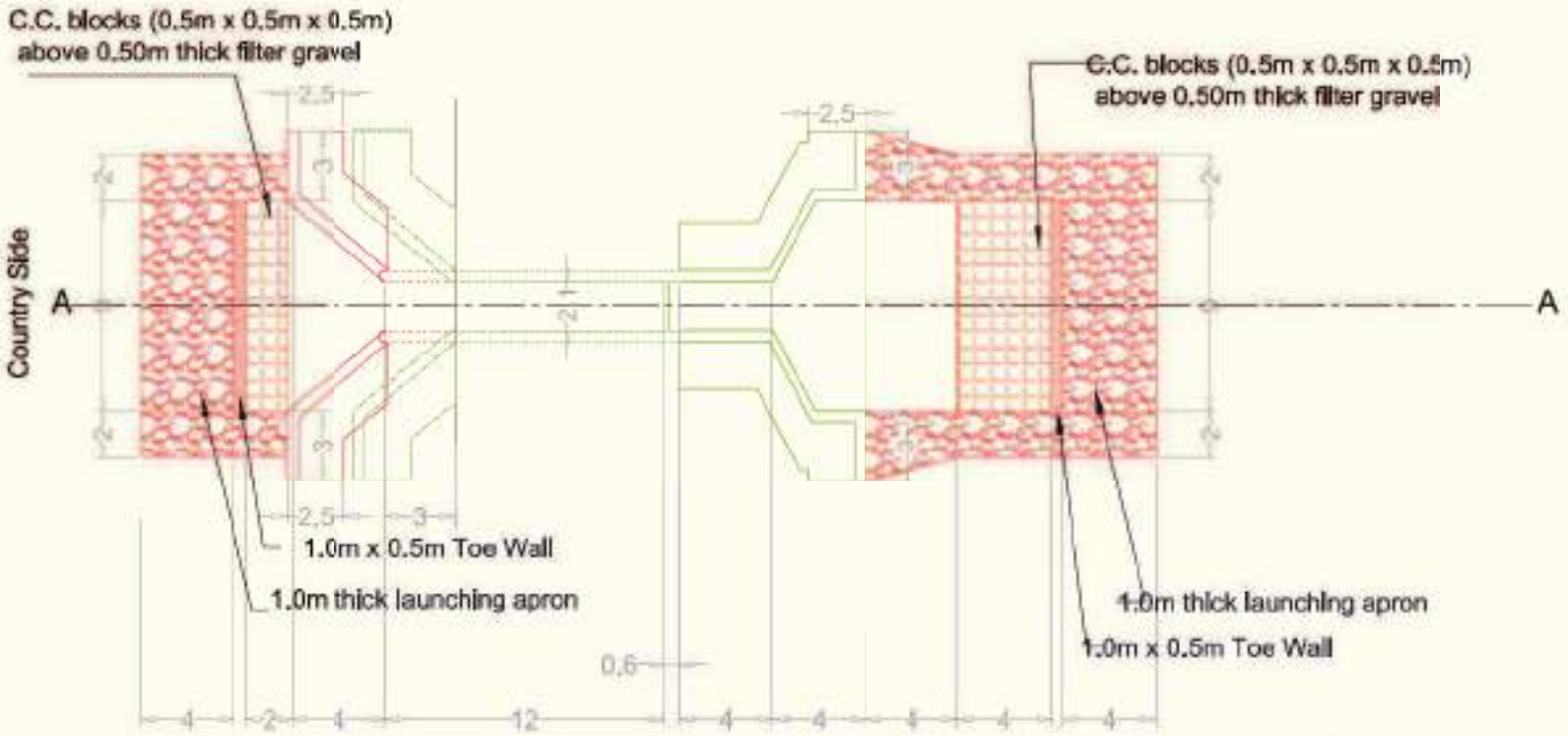
Name of Project:- Integrated Water Resources Management of Buridehng Basin

ELEVATICN OF SLUICE CULVERT NO. E-13/2

DIBRUGARH W.R DIVISION
DIBRUGARH



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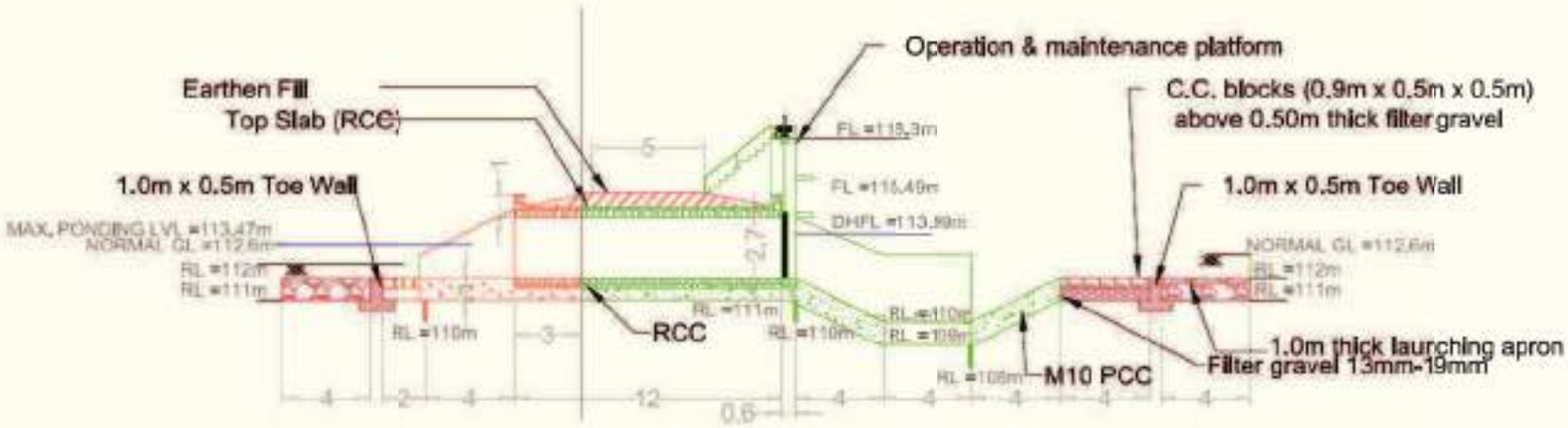
PLAN OF SLUICE CULVERT NO. E-13/2

DIBRUGARH W.R DIVISION
DIBRUGARH

Country Side

Buridehing Side



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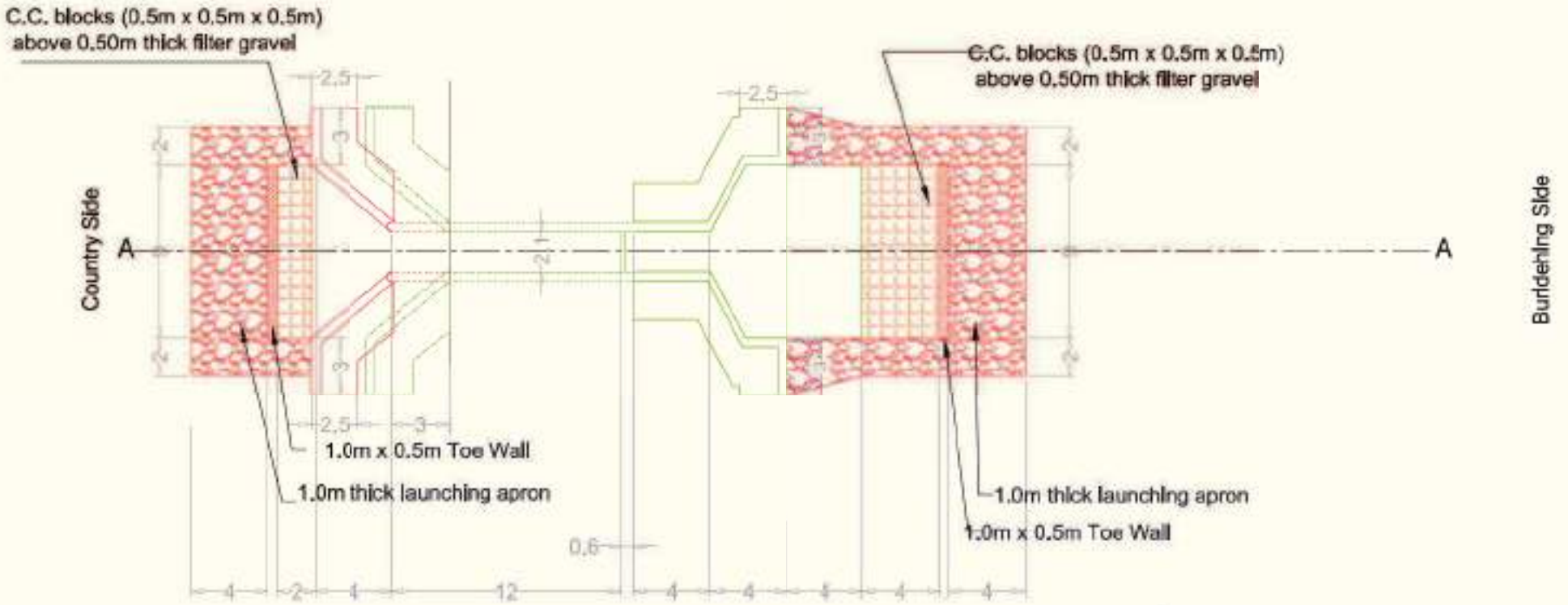
Name of Project:- Integrated Water Resources Management of Buridehng Basin
ELEVATION OF SLUICE CULVERT NO. E-13/3

DIBRUGARH W R DIVISION
DIBRUGARH



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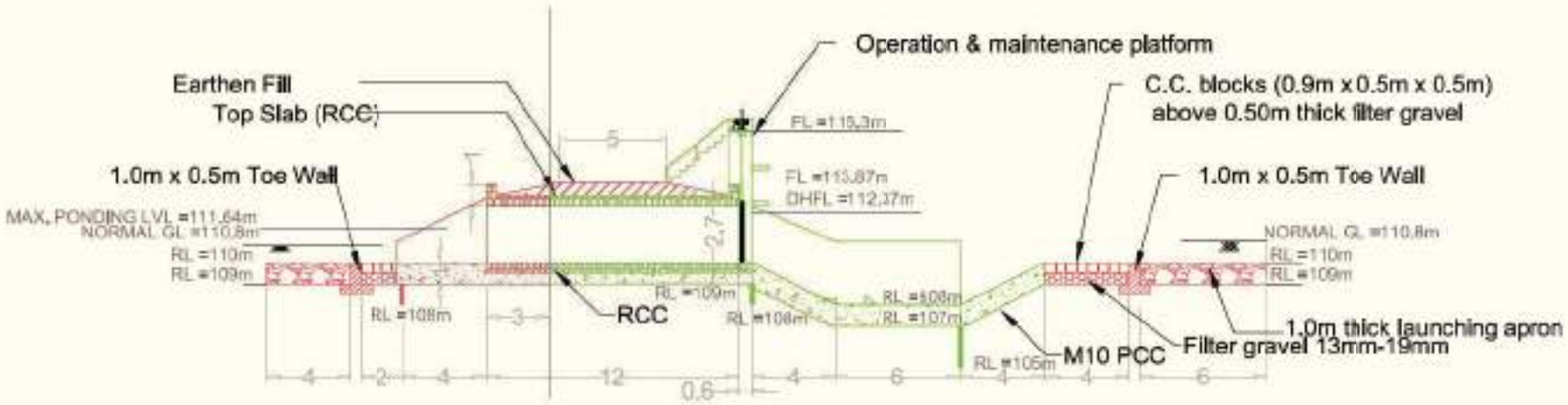
PLAN OF SLUICE CULVERT NO. E-13/3

DIBRUGARH W R DIVISION
DIBRUGARH

Country Side

Buridehing Side



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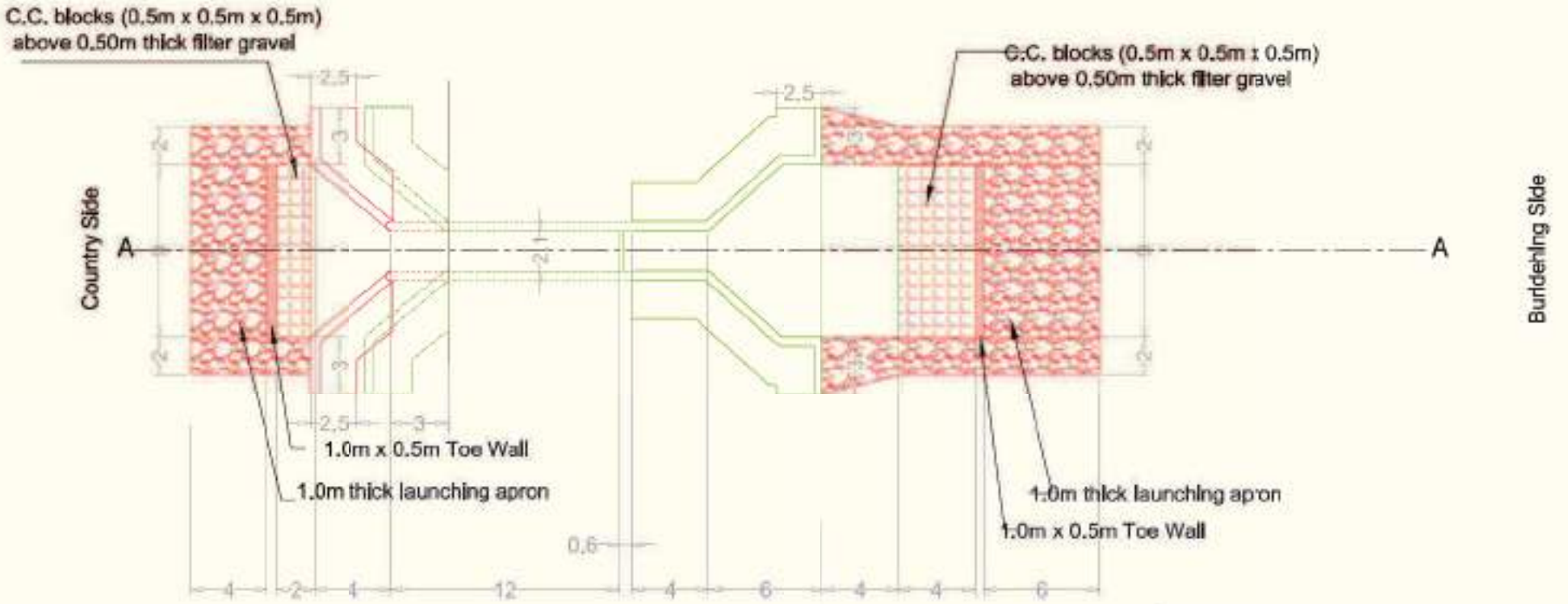
Name of Project:- Integrated Water Resources Management of Buridehng Basin
ELEVATION OF SLUICE CULVERT NO. E-14/1

DIBRUGARH W.R DIVISION
DIBRUGARH



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DIBRUGARH W R DIVISION
DIBRUGARH

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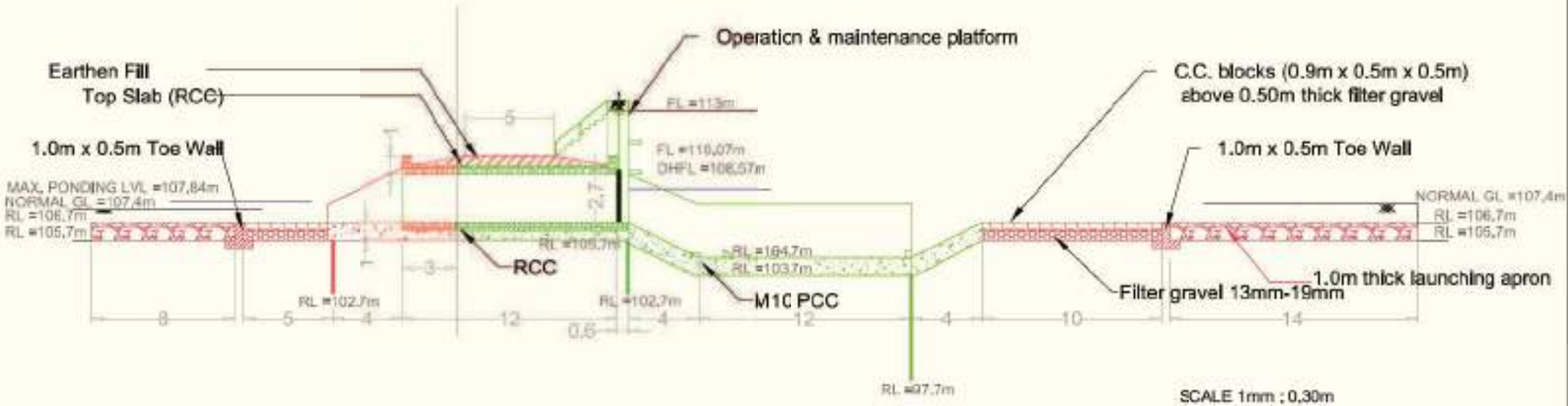

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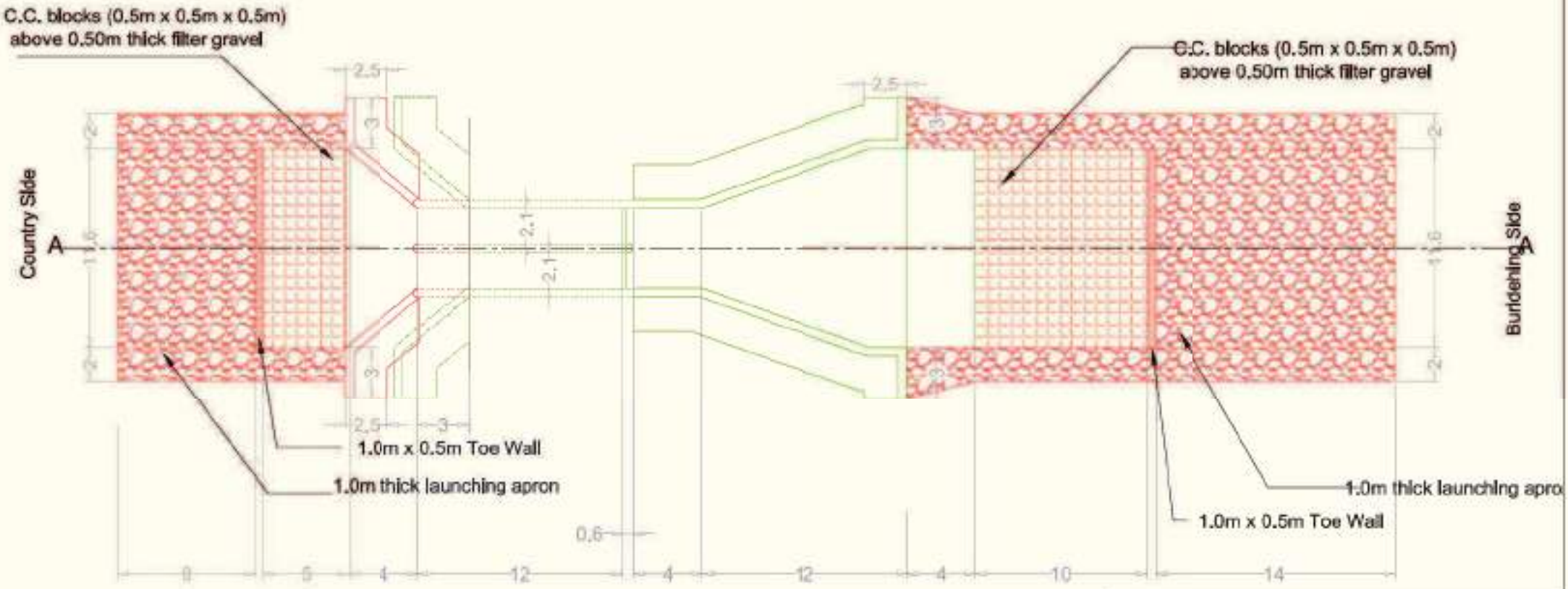
ELEVATION OF SLUICE CULVERT NO. E-14/2

DIBRUGARH W R DIVISION
DIBRUGARH



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DIBRUGARH W.R DIVISION
DIBRUGARH

Country Side

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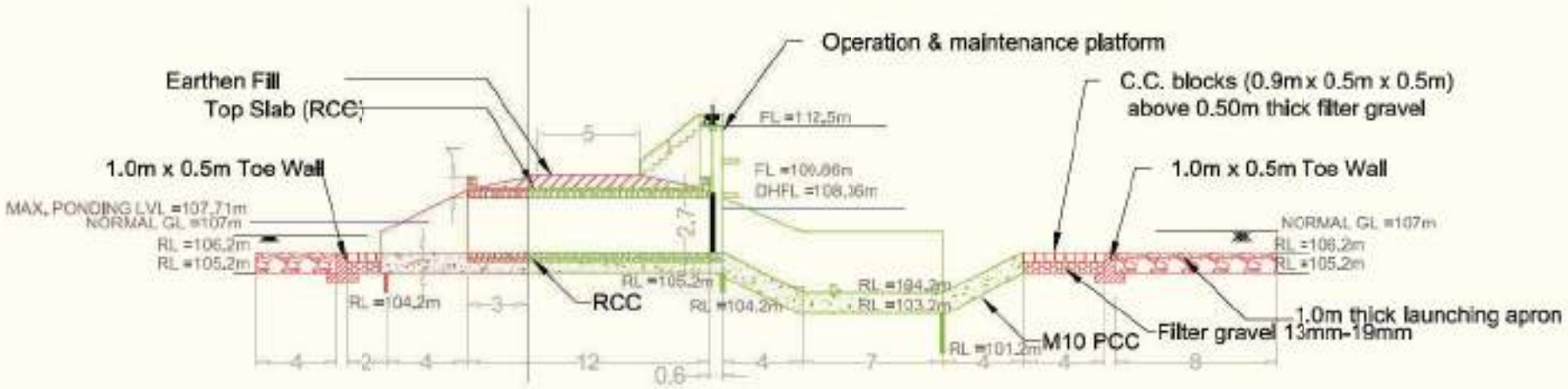

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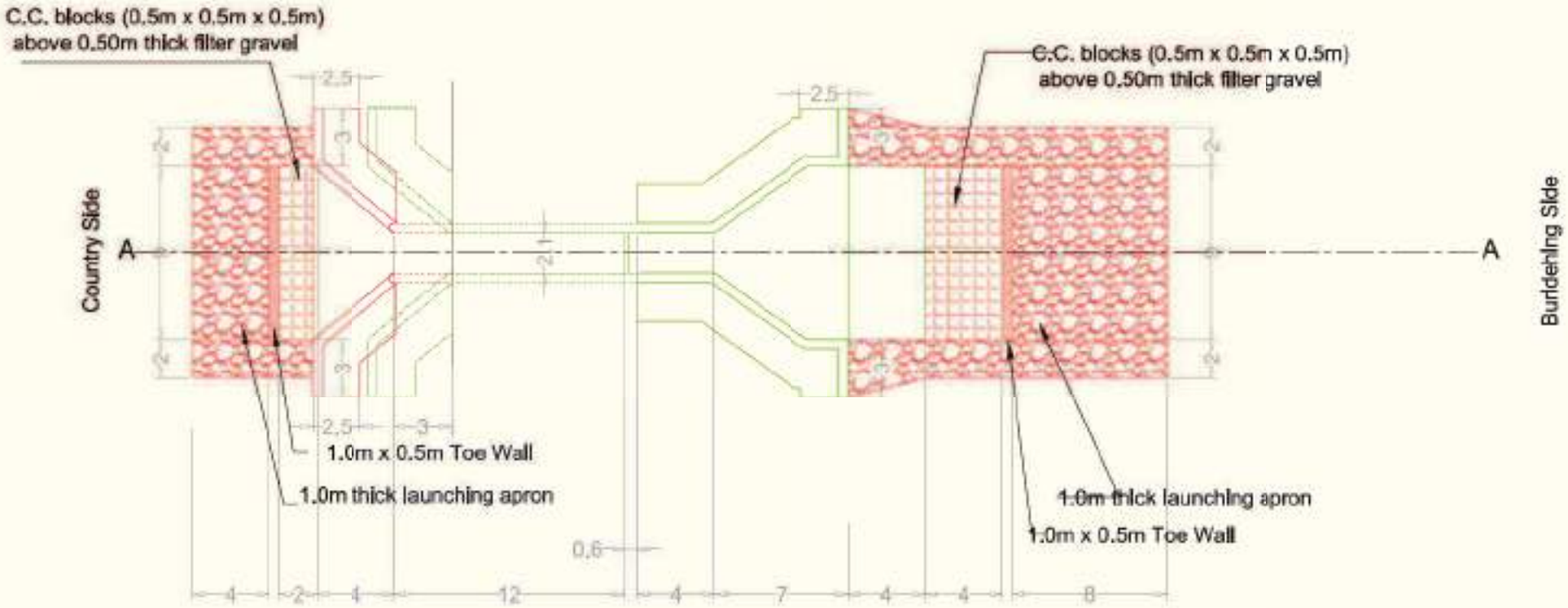
DIBRUGARH W R DIVISION
DIBRUGARH



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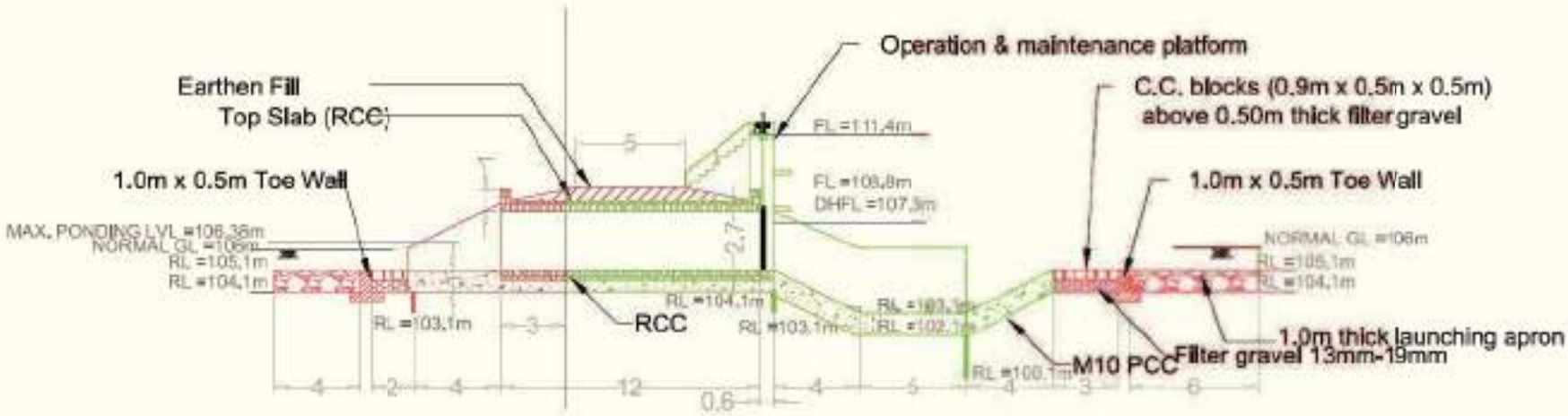
PLAN OF SLUICE CULVERT NO. E-14/3

DIBRUGARH WR DIVISION
DIBRUGARH

Country Side

Buridehing Side



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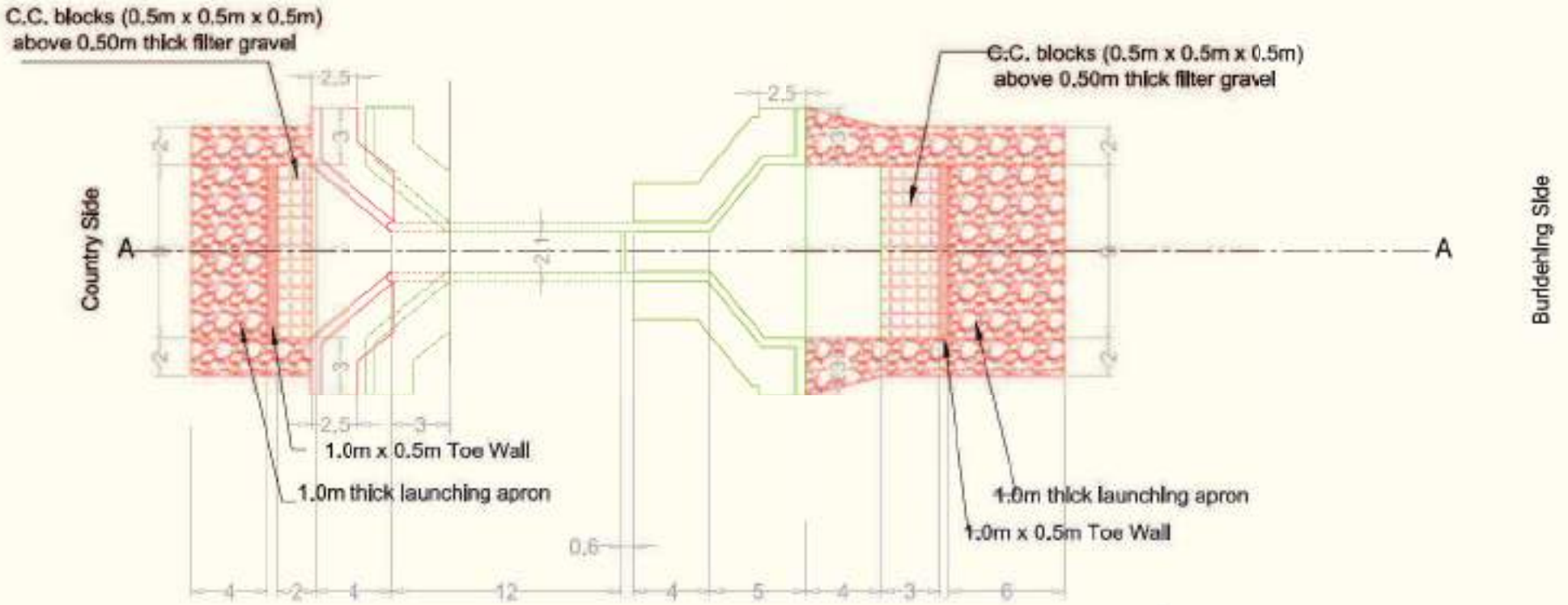
Name of Project:- Integrated Water Resources Management of Buridehng Basin

ELEVATICN OF SLUICE CULVERT NO. E-14/4

DIBRUGARH W R DIVISION
DIBRUGARH



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Name of Project:- Integrated Water Resources Management of Burldehing Basin

PLAN OF SLUICE CULVERT NO. E-14/4

DIBRUGARH W R DIVISION
DIBRUGARH

Country Side

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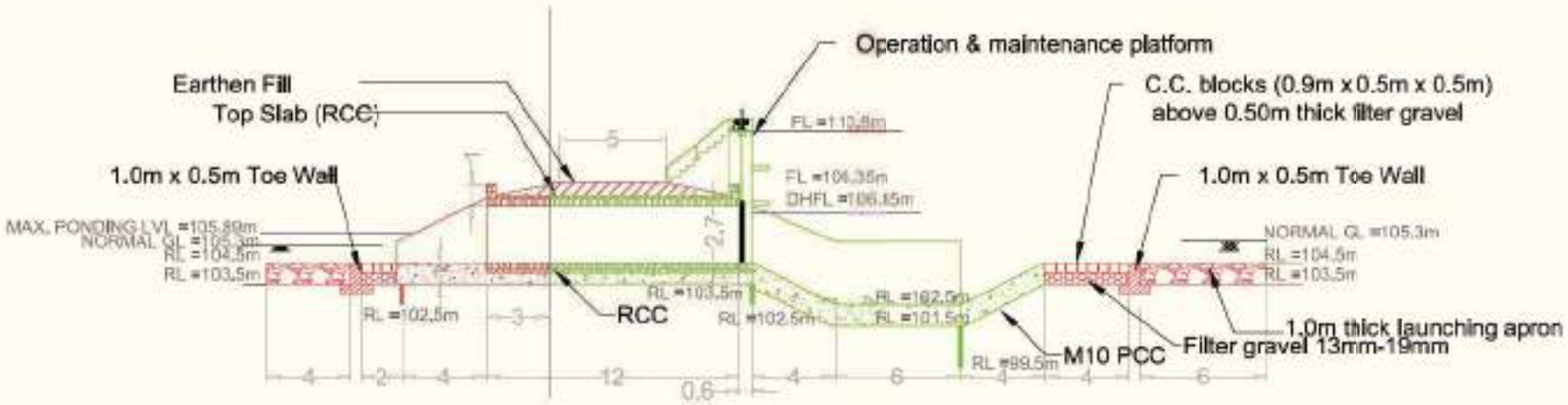

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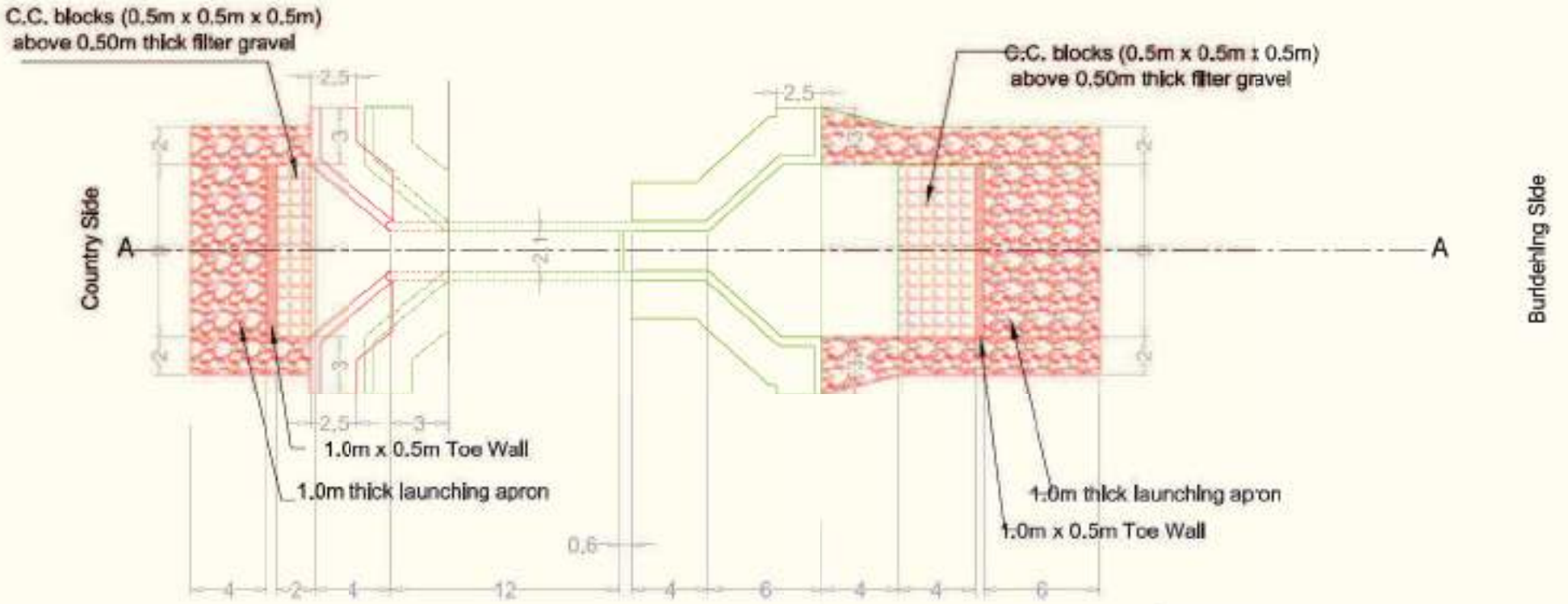
Name of Project:- Integrated Water Resources Management of Buridehng Basin

ELEVATICN OF SLUICE CULVERT NO. E-14/5

DIBRUGARH W R DIVISION
DIBRUGARH



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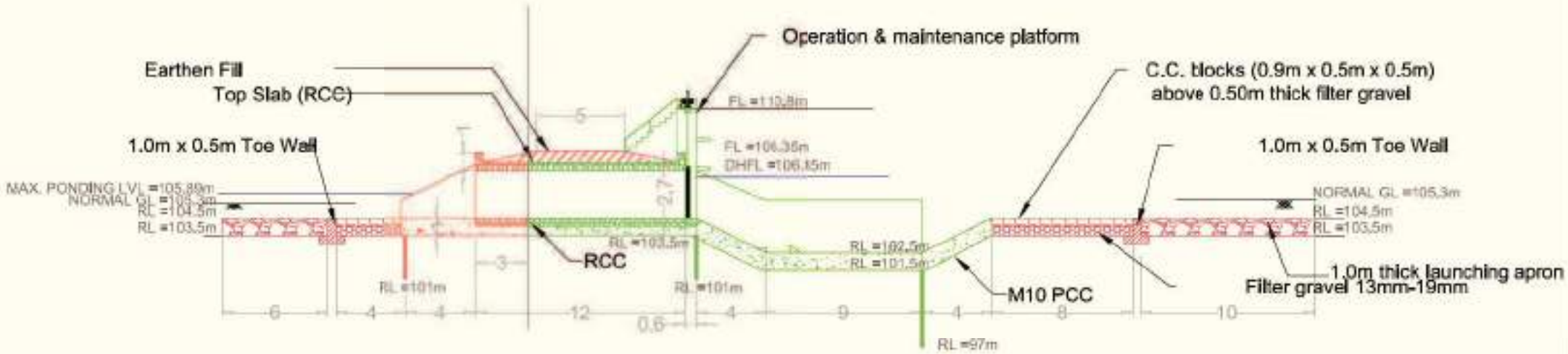
Name of Project:- Integrated Water Resources Management of Burldehing Basin

PLAN OF SLUICE CULVERT NO. E-14/5

DIBRUGARH W.R DIVISION
DIBRUGARH



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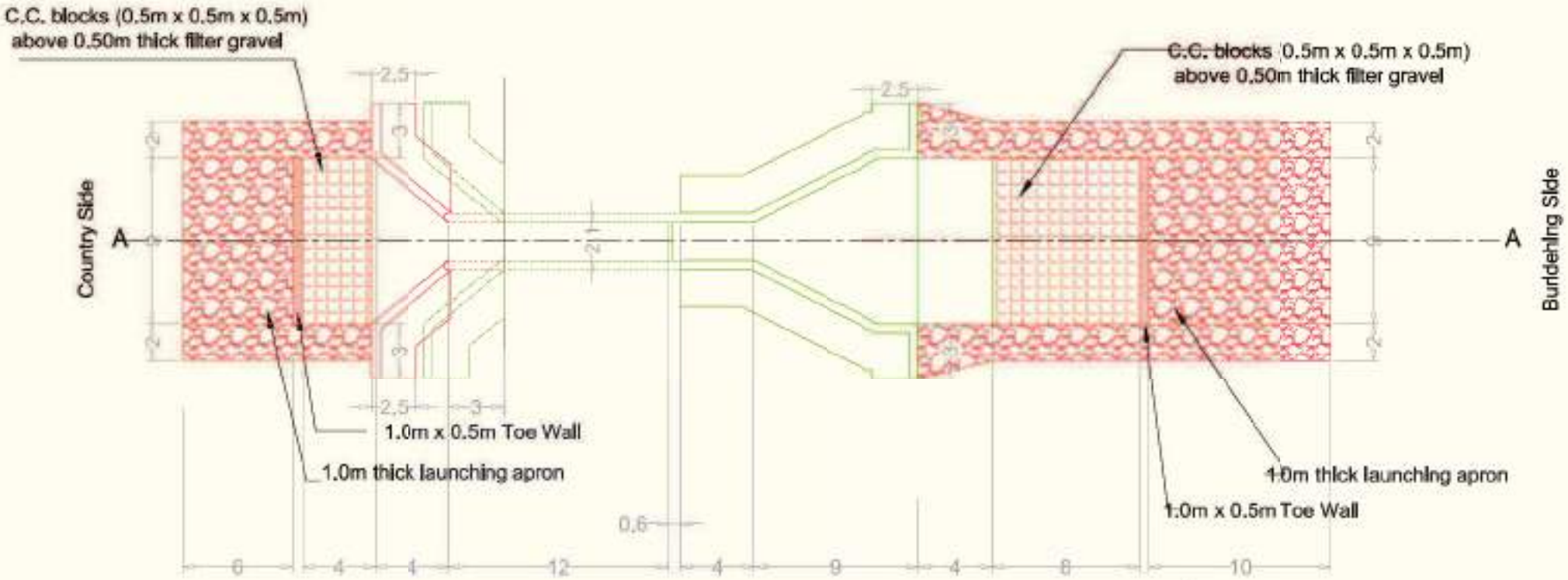
Name of Project:- Integrated Water Resources Management of Buridehng Basin

ELEVATION OF SLUICE CULVERT NO. E-15/1

DIBRUGARH W R DIVISION
DIBRUGARH



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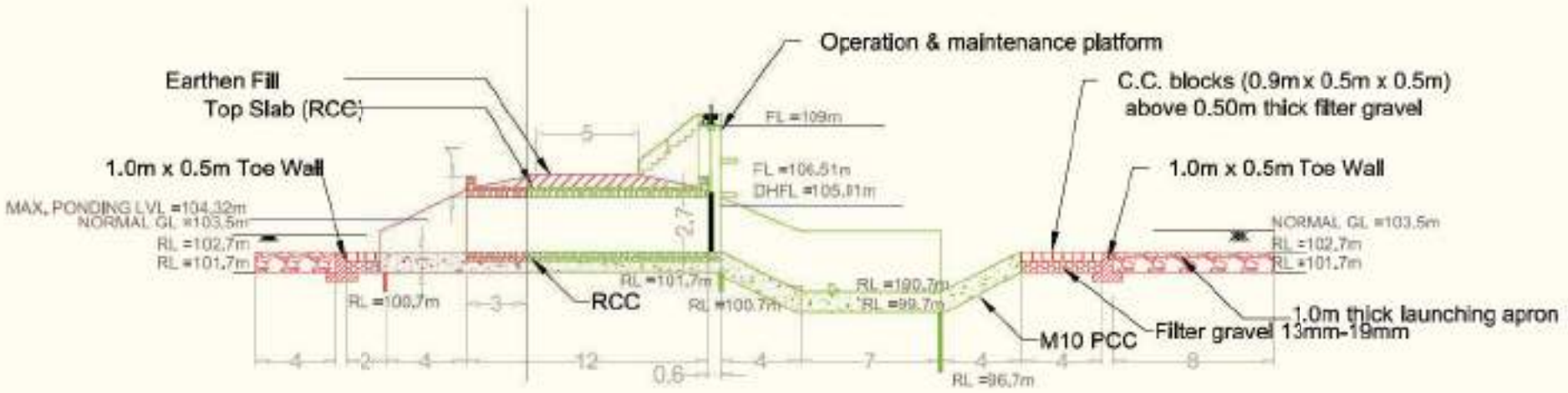
PLAN OF SLUICE CULVERT NO. E-15/1

DIBRUGARH W R DIVISION
DIBRUGARH

Country Side

Buridehing Side



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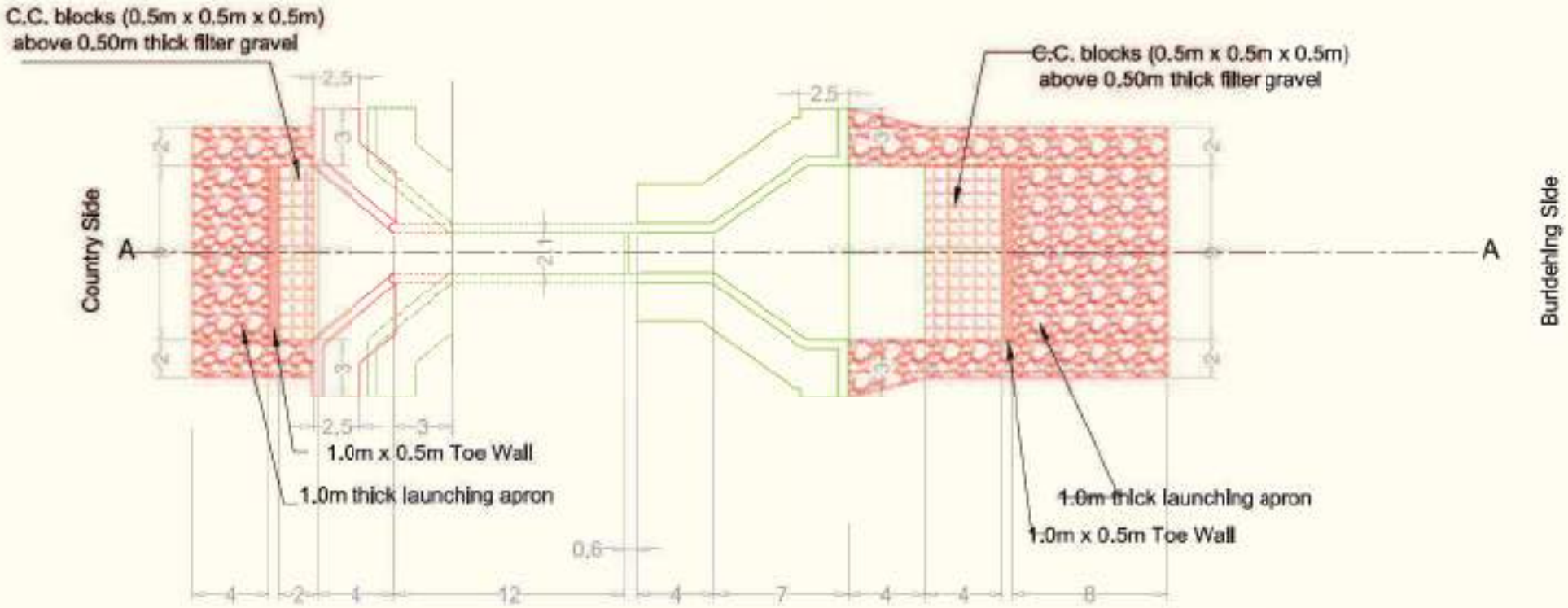
Name of Project:- Integrated Water Resources Management of Buridehng Basin
ELEVATION OF SLUICE CULVERT NO. E-15/2

DIBRUGARH W R DIVISION
DIBRUGARH



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DIBRUGARH W R DIVISION
DIBRUGARH

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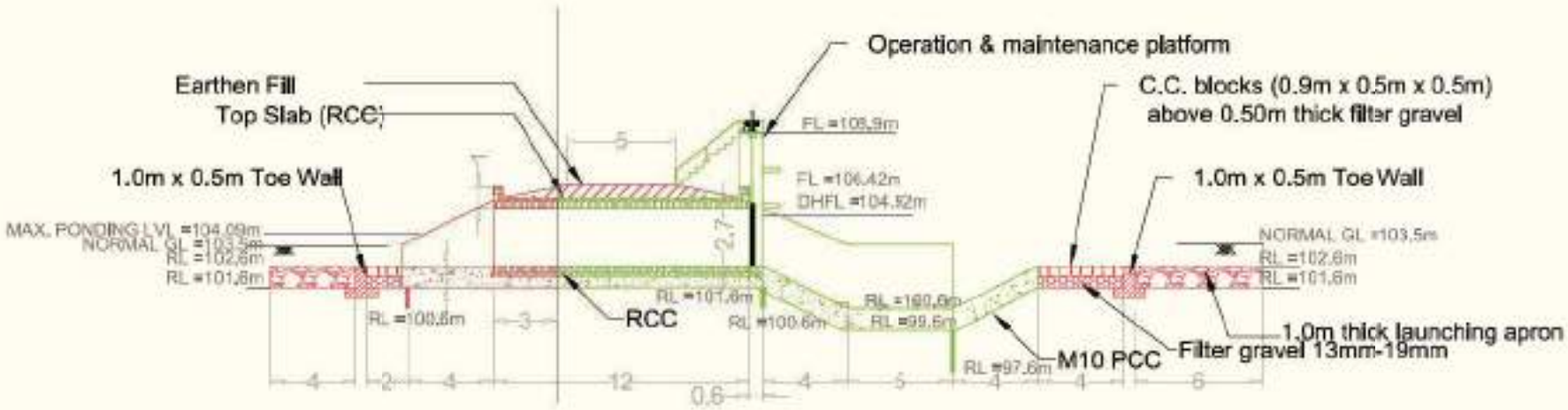

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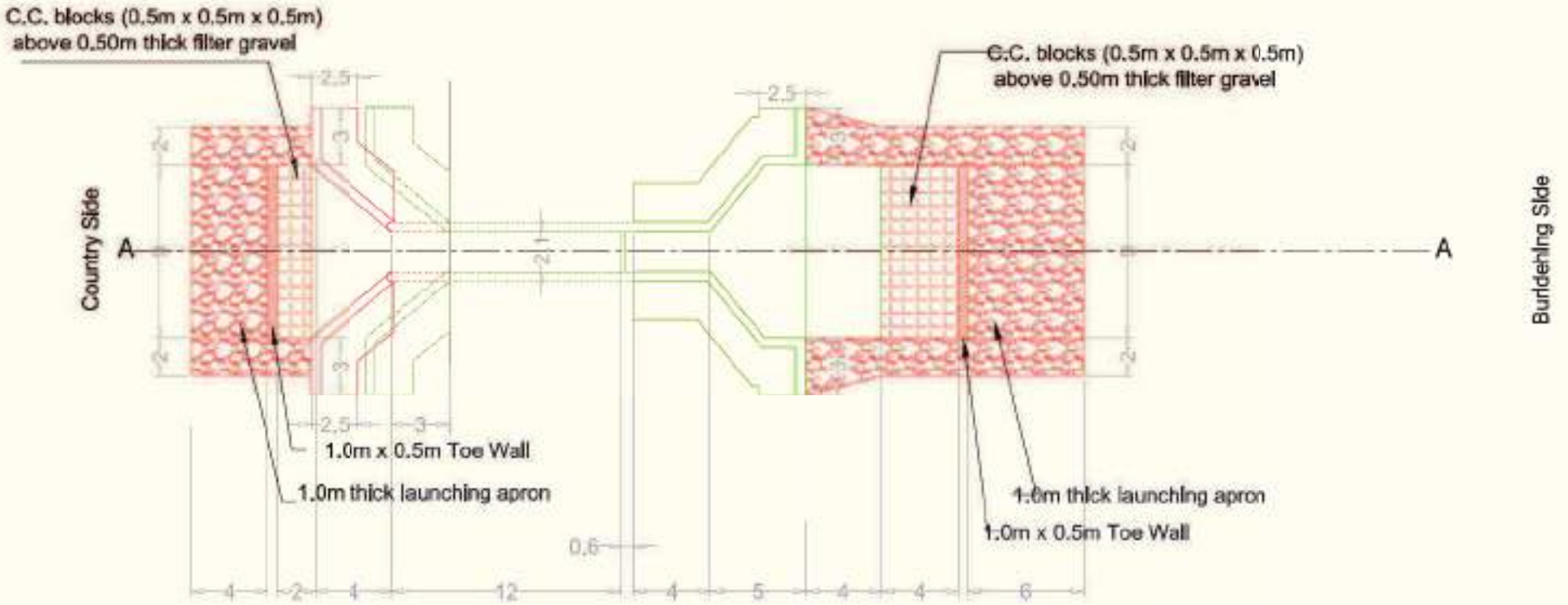

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DIBRUGARH WR DIVISION
DIBRUGARH

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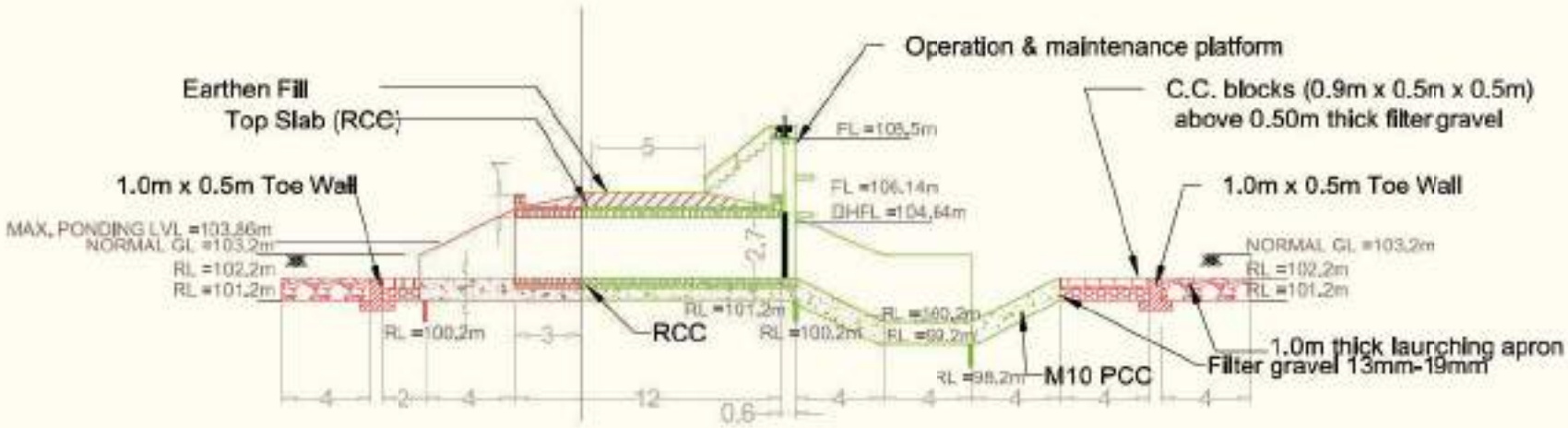

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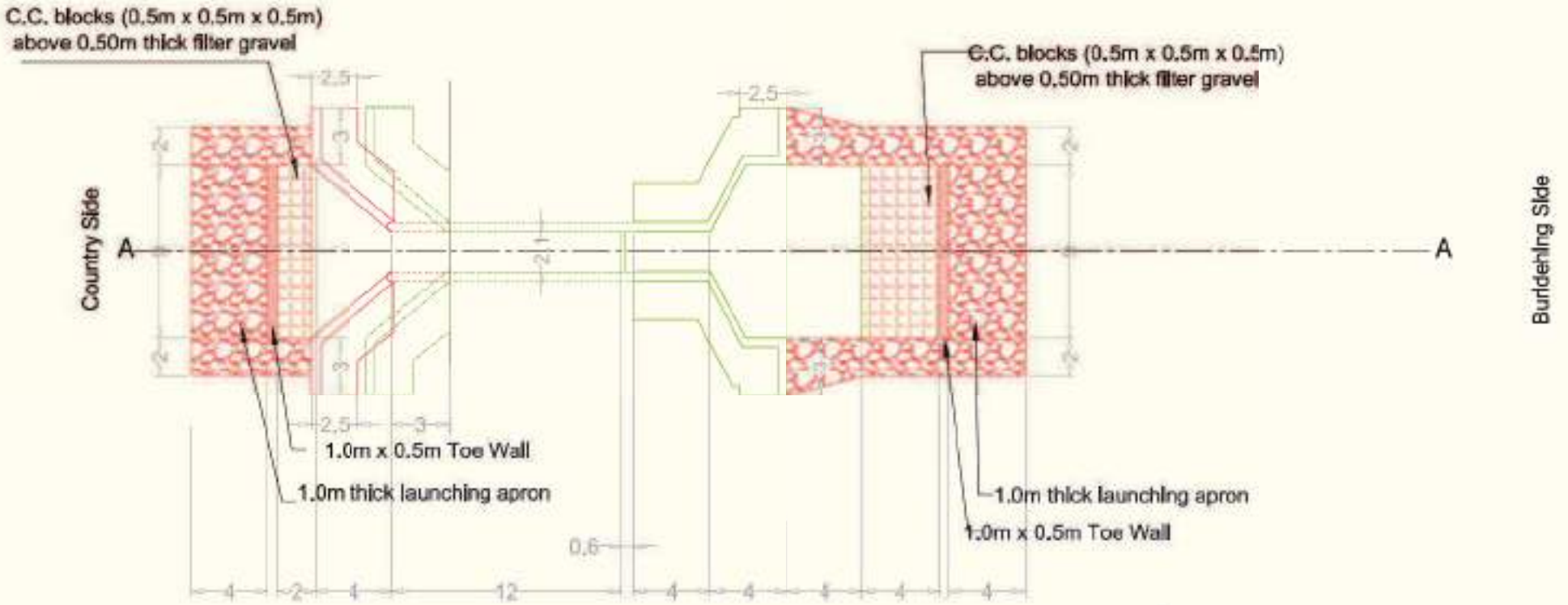
ELEVATION OF SLUICE CULVERT NO. E-15/4

DIBRUGARH W.R DIVISION
DIBRUGARH



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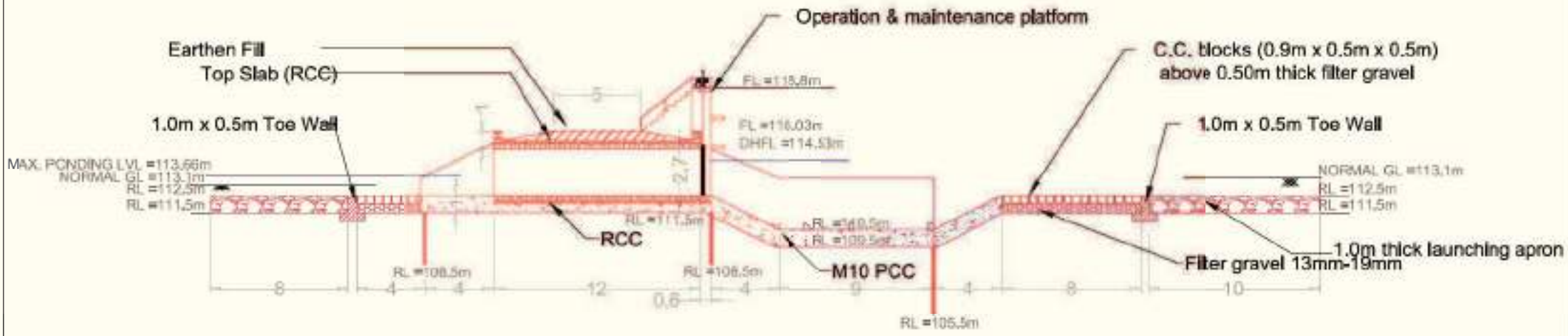

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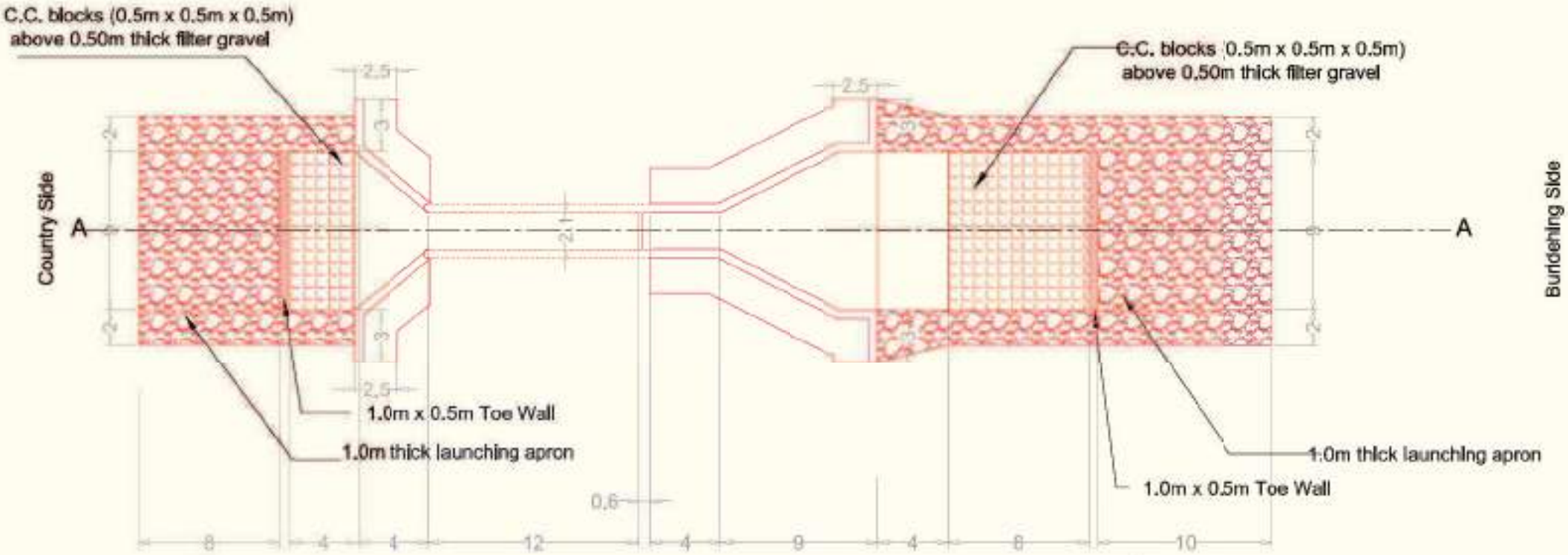
Name of Project:- Integrated Water Resources Management of Buridehng Basin

ELEVATION OF SLUICE CULVERT NO. E-16/1

DIBRUGARH W.R DIVISION
DIBRUGARH



PLAN

CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

J.E./A.E.

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

A.E.E.

(ALL DIMENSIONS ARE IN METRE)

GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

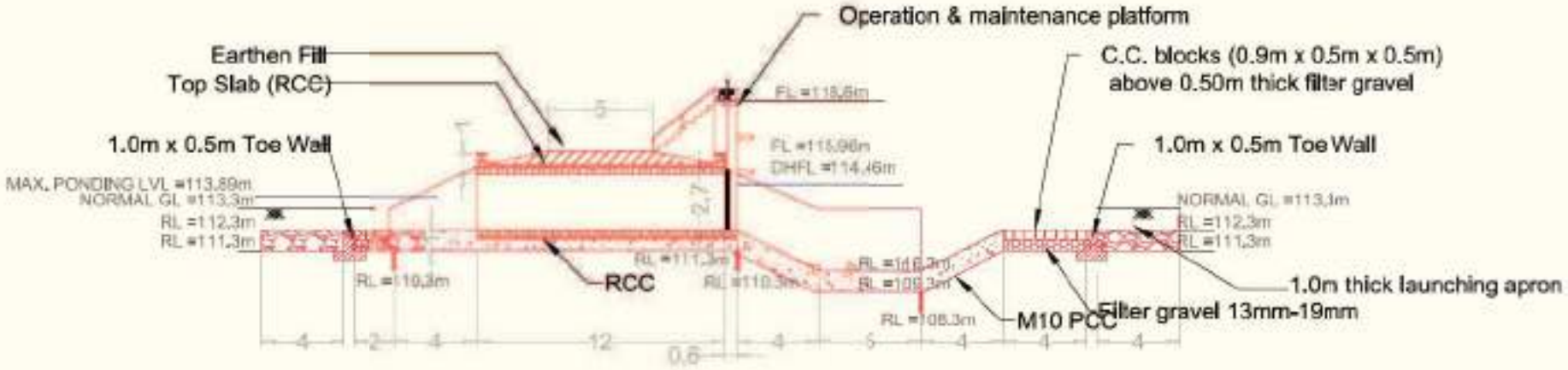
Name of Project:- Integrated Water Resources Management of Burideihing Basin

PLAN OF SLUICE CULVERT NO. E-16/1

DIBRUGARH W R DIVISION
DIBRUGARH

Country Side

Buridehing Side



SCALE 1mm : 0.30m
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SECTIONAL ELEVATION AT A-A

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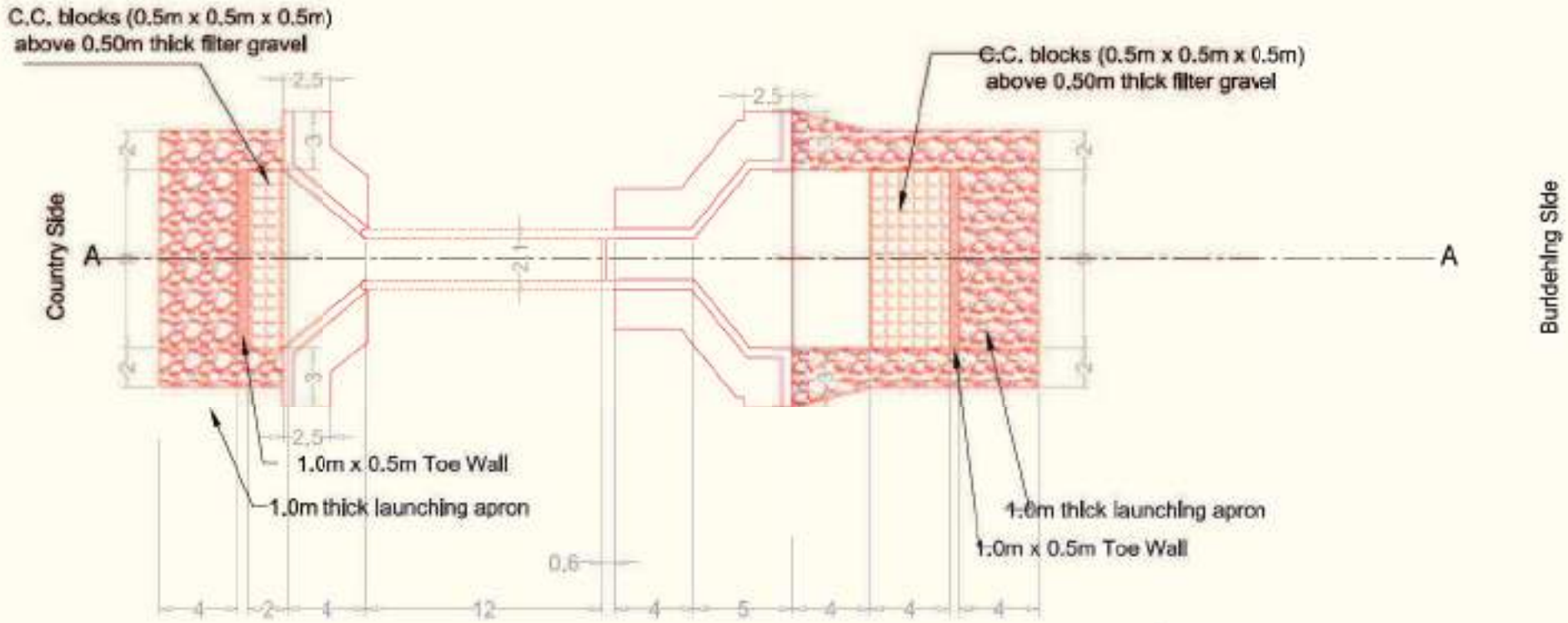
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

Name of Project:- Integrated Water Resources Management of Buridehng Basin

ELEVATION OF SLUICE CULVERT NO. E-16/2

DIBRUGARH W R DIVISION
DIBRUGARH



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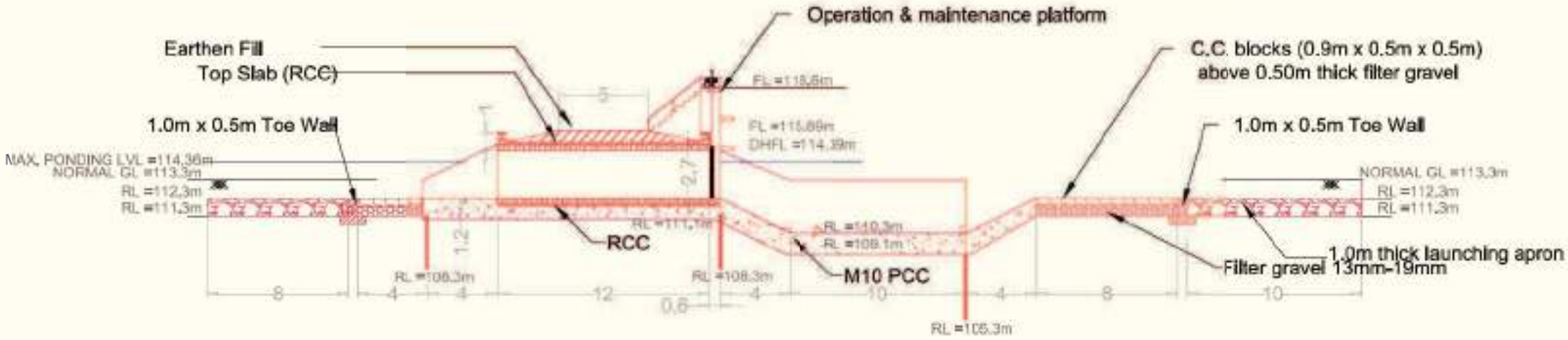
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

Name of Project:- Integrated Water Resources Management of Burldehing Basin

PLAN OF SLUICE CULVERT NO. E-16/2

DIBRUGARH W R DIVISION
DIBRUGARH



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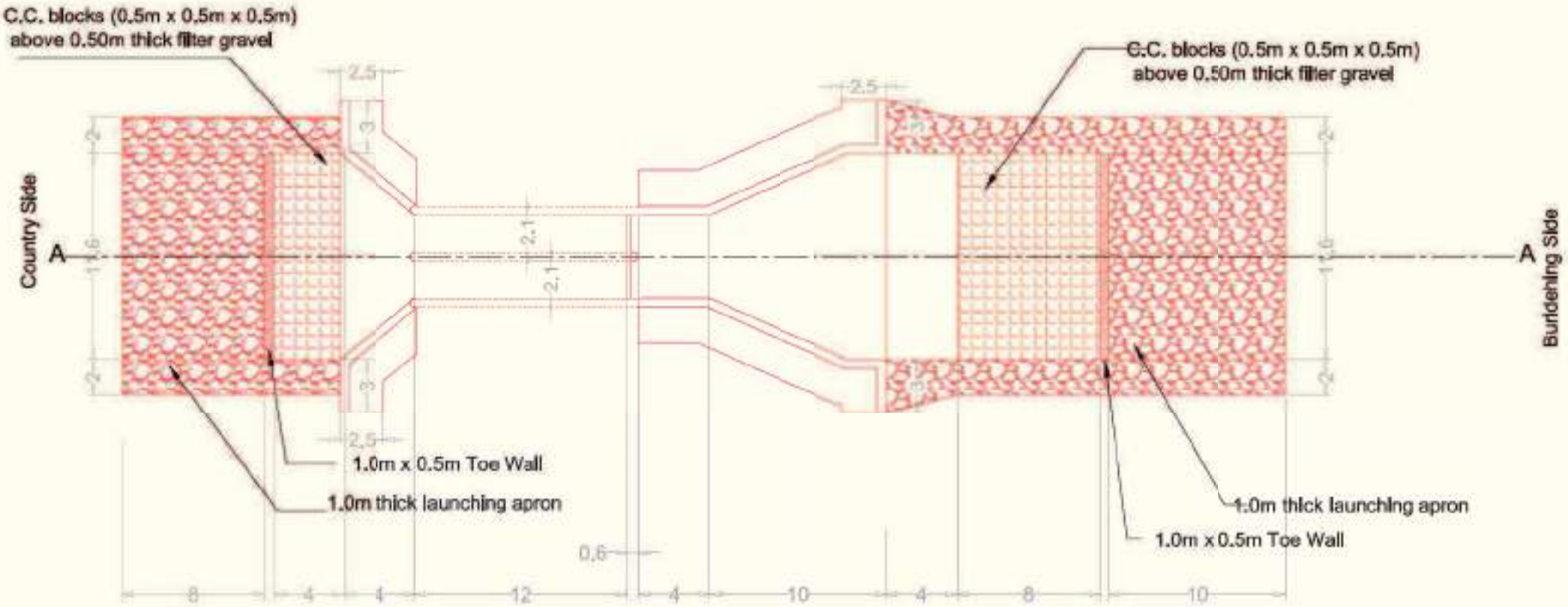
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

Name of Project:- Integrated Water Resources Management of Buridehng Basin

ELEVATICN OF SLUICE CULVERT NO. E-16/3

DIBRUGARH W R DIVISION
DIBRUGARH



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WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

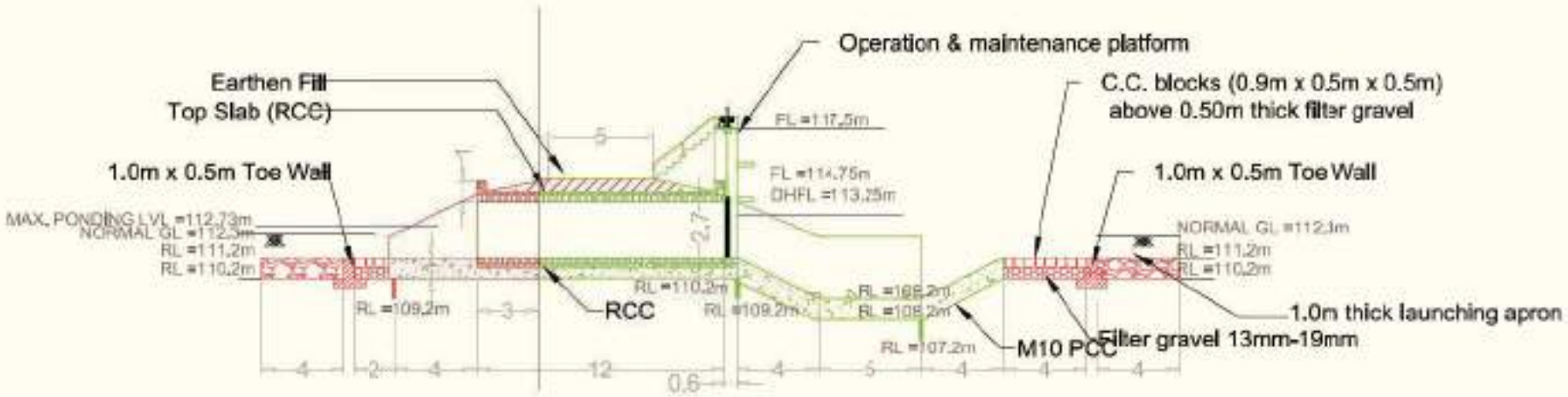
Name of Project:- Integrated Water Resources Management of Burideihing Basin

PLAN OF SLUICE CULVERT NO. E-16/3

DIBRUGARH W R DIVISION
DIBRUGARH

Country Side

Buridehing Side



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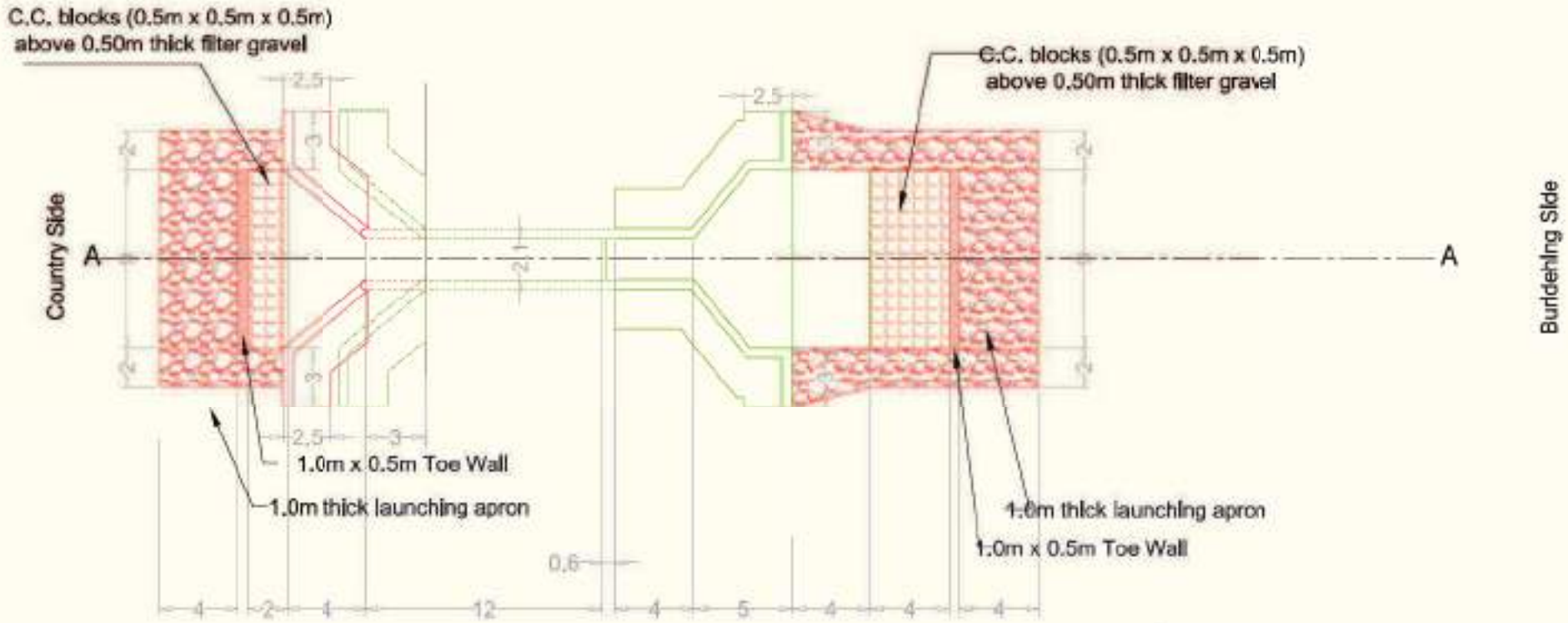
GOVT OF ASSAM WATER RESOURCES DEPARTMENT
OFFICE OF THE EXECUTIVE ENGINEER DIBRUGARH W.R. DIVISION , DIBRUGARH
Name of Project:- Integrated Water Resources Management of Buridehng Basin
ELEVATION OF SLUICE CULVERT NO. E-16/4

DIBRUGARH W.R DIVISION
DIBRUGARH



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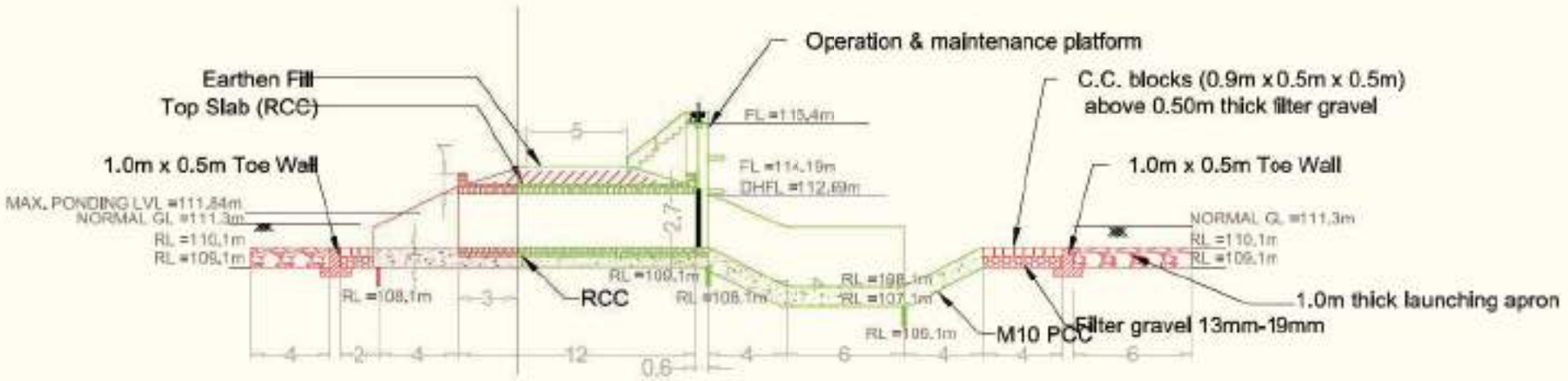
Name of Project:- Integrated Water Resources Management of Burldehing Basin

PLAN OF SLUICE CULVERT NO. E-16/4

DIBRUGARH WR DIVISION
DIBRUGARH

Country Side

Buridehing Side



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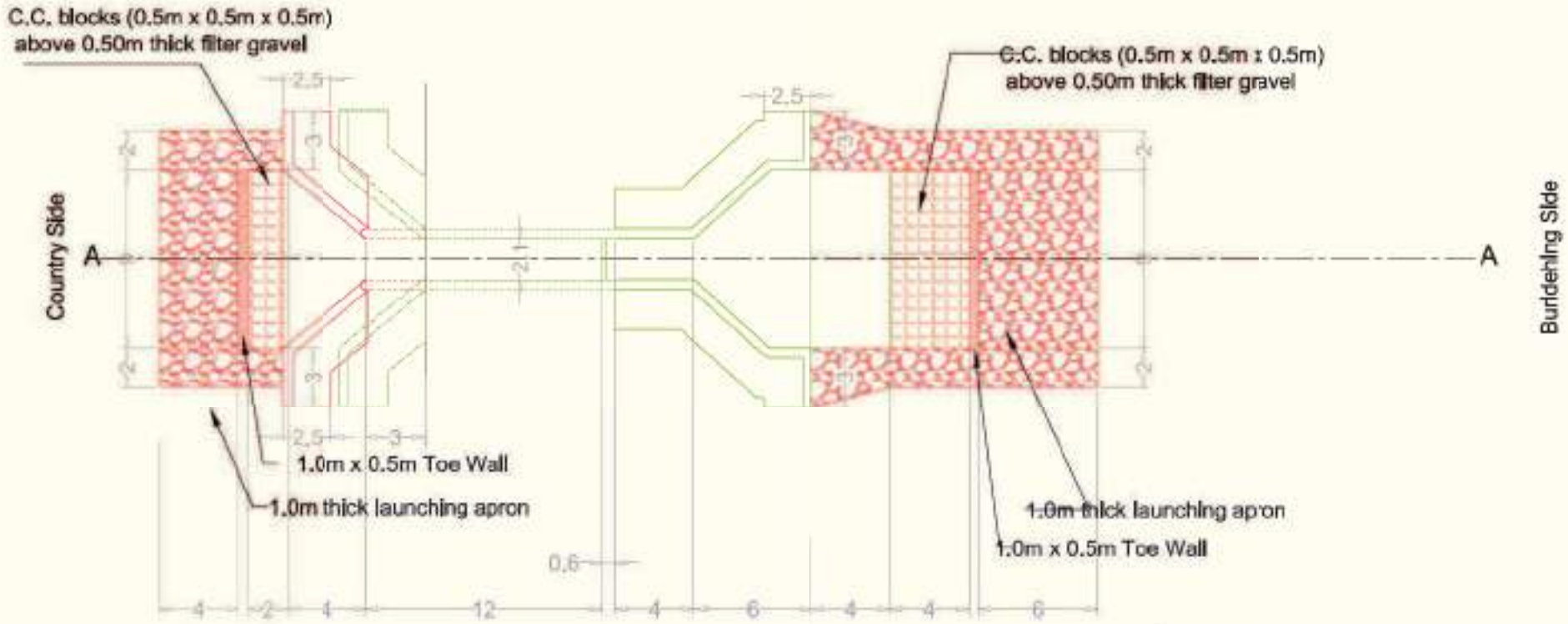
DIBRUGARH W.R. DIVISION , DIBRUGARH

Name of Project:- Integrated Water Resources Management of Buridehng Basin

ELEVATICN OF SLUICE CULVERT NO. E-16/5

DIBRUGARH W R DIVISION
DIBRUGARH



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WATER RESOURCES DEPARTMENT

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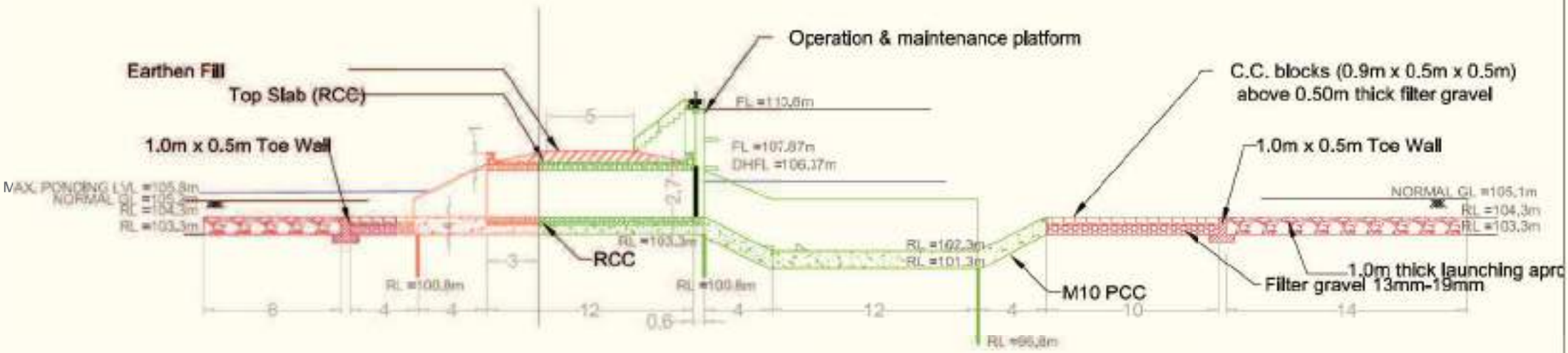
DIBRUGARH W.R. DIVISION , DIBRUGARH

Name of Project:- Integrated Water Resources Management of Burideihing Basin

PLAN OF SLUICE CULVERT NO. E-16/5

DIBRUGARH W.R DIVISION
DIBRUGARH



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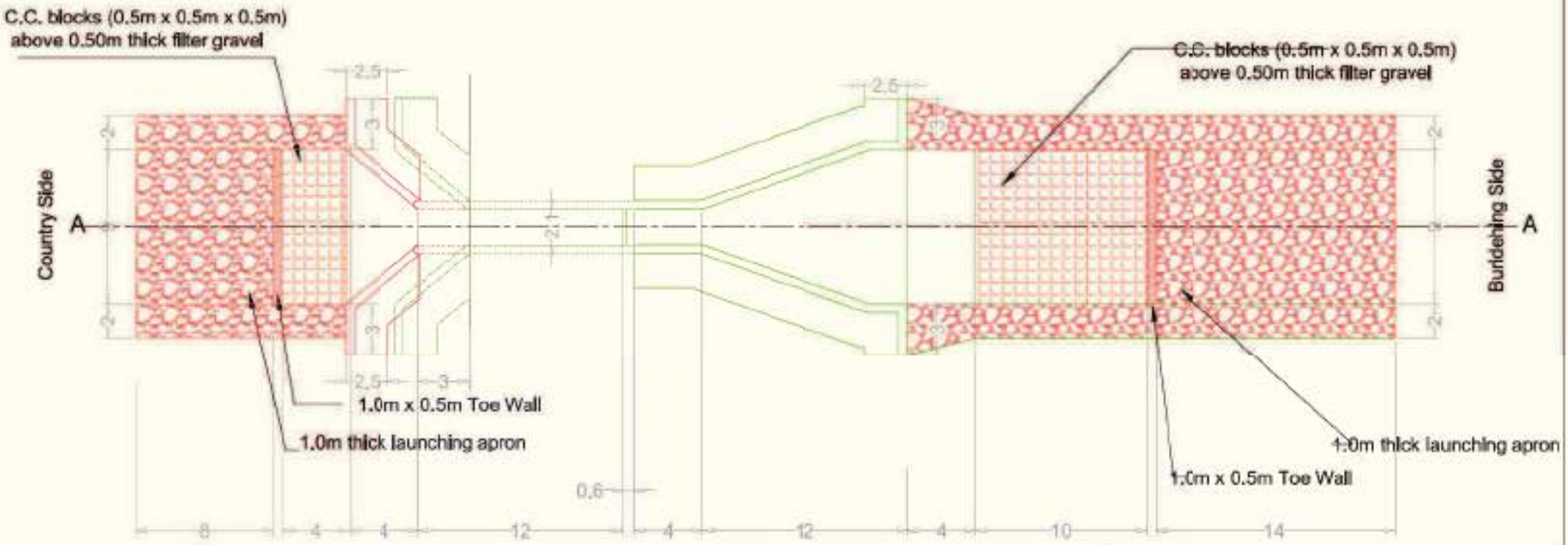
DIBRUGARH W.R. DIVISION , DIBRUGARH

Name of Project:- Integrated Water Resources Management of Buridehng Basin

ELEVATION OF SLUICE CULVERT NO. E-19/1

DIBRUGARH W.R DIVISION
DIBRUGARH



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WATER RESOURCES DEPARTMENT

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DIBRUGARH W.R. DIVISION , DIBRUGARH

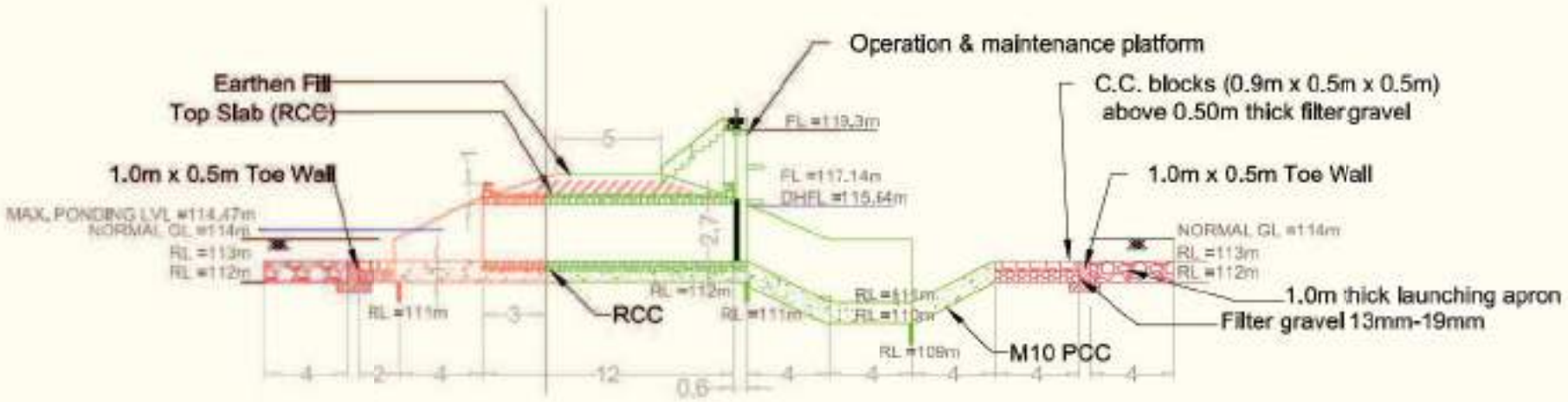
Name of Project:- Integrated Water Resources Management of Burideihing Basin

PLAN OF SLUICE CULVERT NO. E-19/1

DIBRUGARH W.R. DIVISION
DIBRUGARH

Country Side

Buridehing Side



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WATER RESOURCES DEPARTMENT

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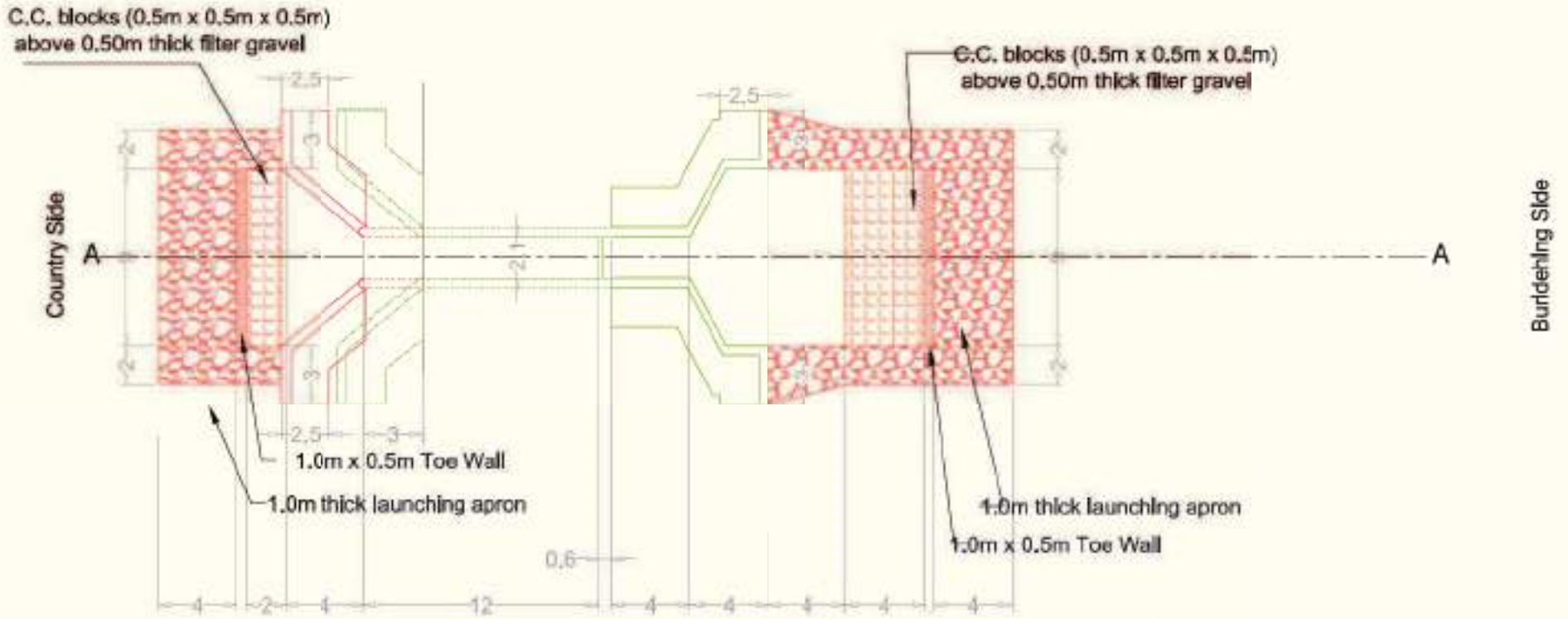
DIBRUGARH W.R. DIVISION , DIBRUGARH

Name of Project:- Integrated Water Resources Management of Buridehng Basin

ELEVATION OF SLUICE CULVERT NO. E-23/1

DIBRUGARH W.R DIVISION
DIBRUGARH



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WATER RESOURCES DEPARTMENT

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DIBRUGARH W.R. DIVISION , DIBRUGARH

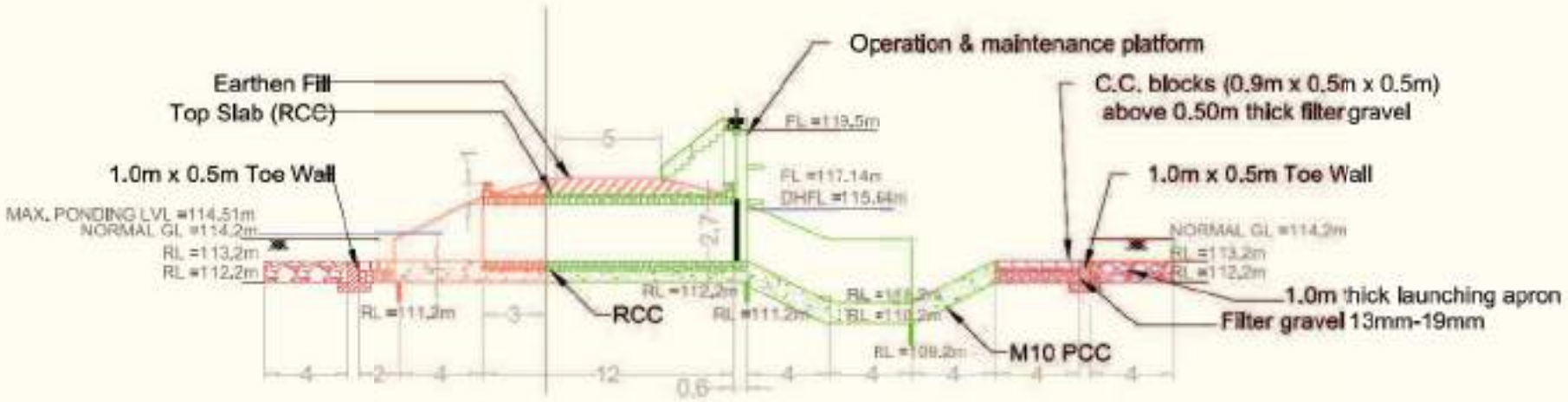
Name of Project:- Integrated Water Resources Management of Burldehing Basin

PLAN OF SLUICE CULVERT NO. E-23/1

DIBRUGARH W.R DIVISION
DIBRUGARH

Country Side

Buridehing Side



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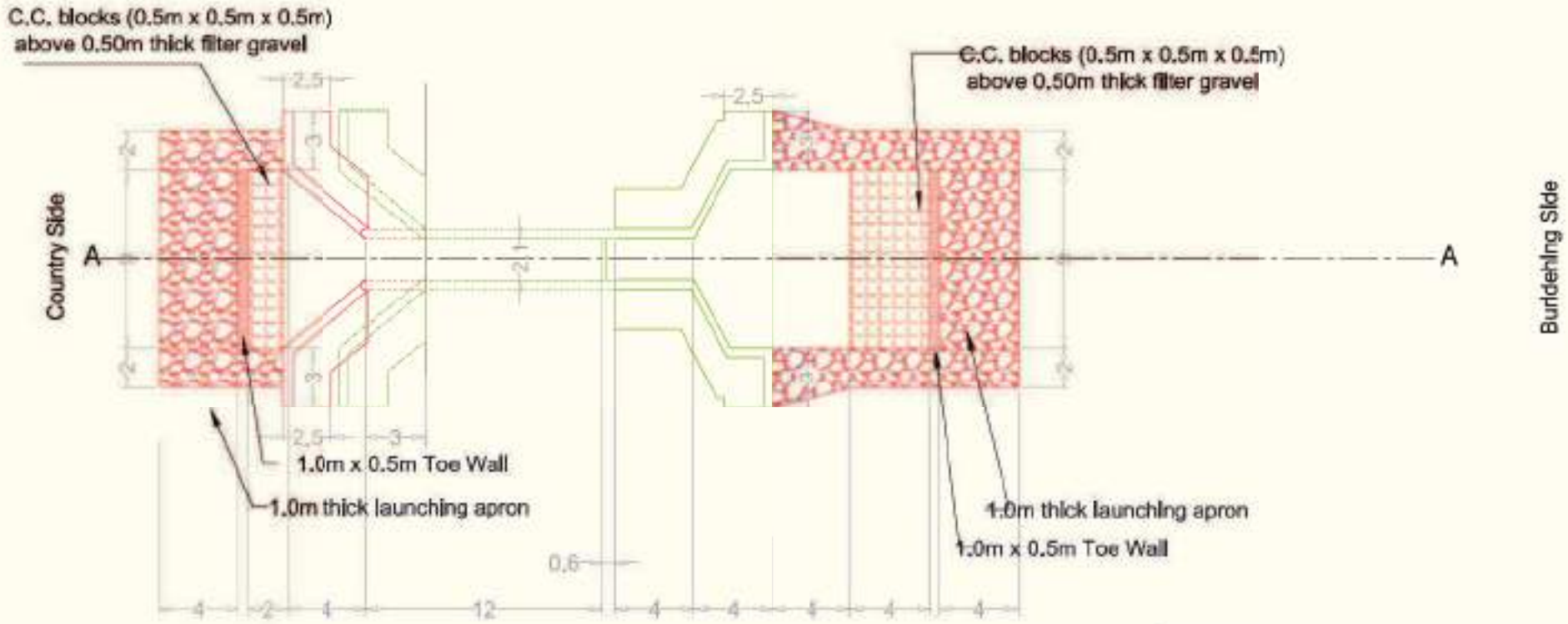
DIBRUGARH W.R. DIVISION , DIBRUGARH

Name of Project:- Integrated Water Resources Management of Buridehng Basin

ELEVATICN OF SLUICE CULVERT NO. E-23/2

DIBRUGARH W.R DIVISION
DIBRUGARH



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WATER RESOURCES DEPARTMENT

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DIBRUGARH W.R. DIVISION , DIBRUGARH

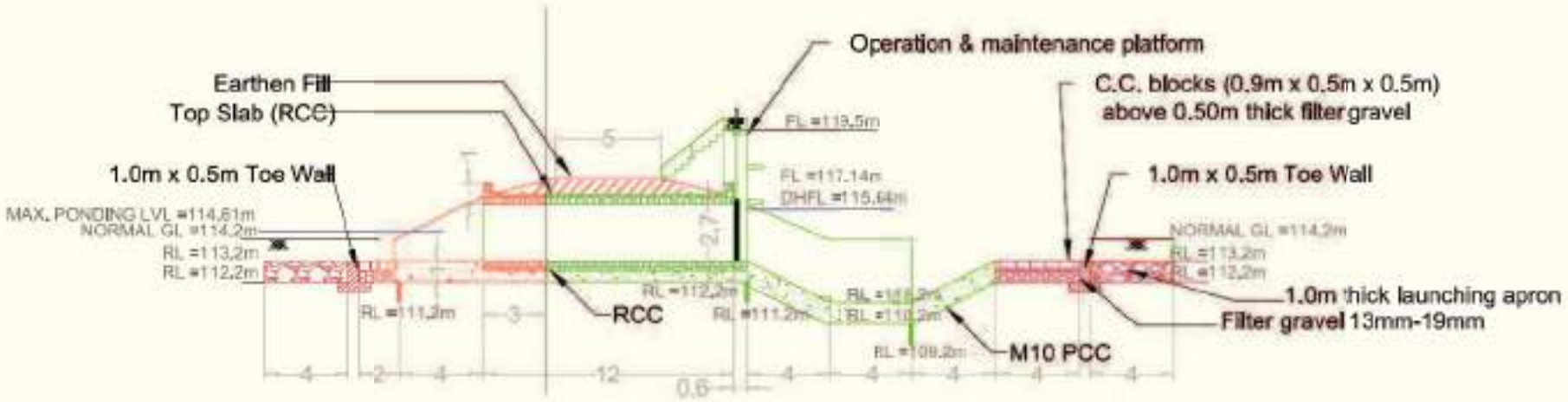
Name of Project:- Integrated Water Resources Management of Burldehing Basin

PLAN OF SLUICE CULVERT NO. E-23/2

DIBRUGARH WR DIVISION
DIBRUGARH

Country Side

Buridehing Side



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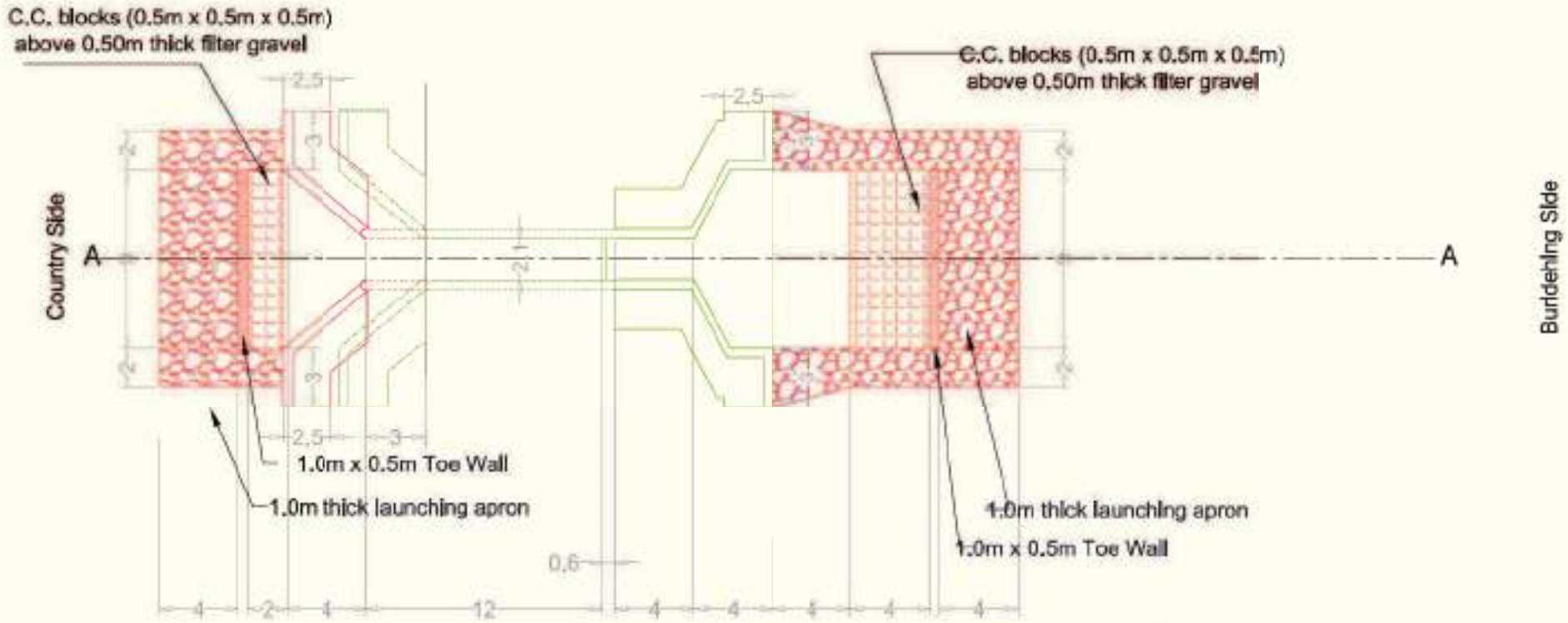
DIBRUGARH W.R. DIVISION , DIBRUGARH

Name of Project:- Integrated Water Resources Management of Buridehng Basin

ELEVATICN OF SLUICE CULVERT NO. E-24/1

DIBRUGARH W R DIVISION
DIBRUGARH



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WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

Name of Project:- Integrated Water Resources Management of Burldehing Basin

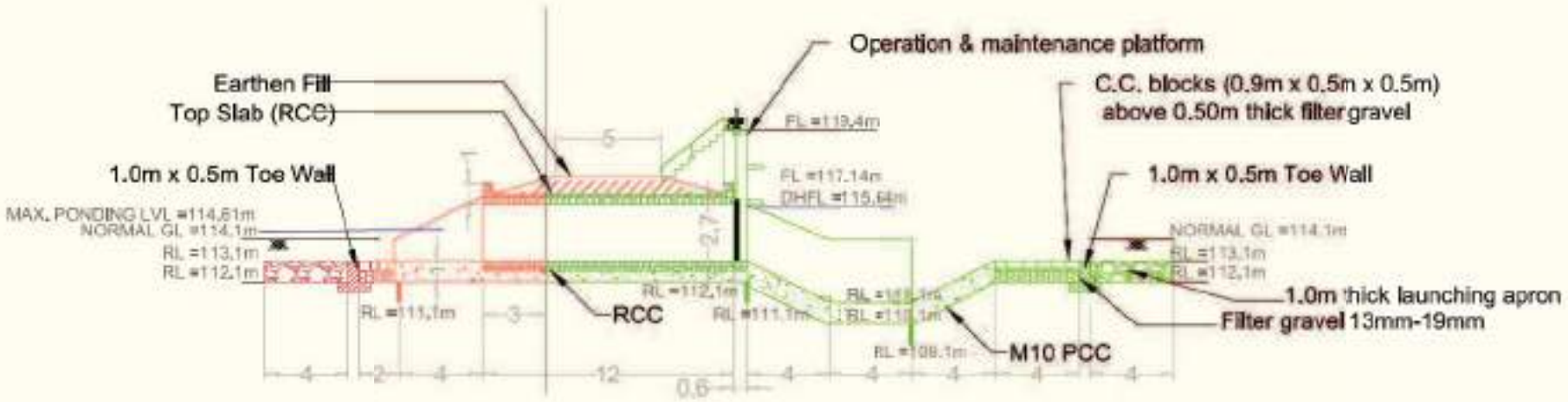
PLAN OF SLUICE CULVERT NO. E-24/1

DIBRUGARH W.R DIVISION
DIBRUGARH

158

Country Side

Buridehing Side



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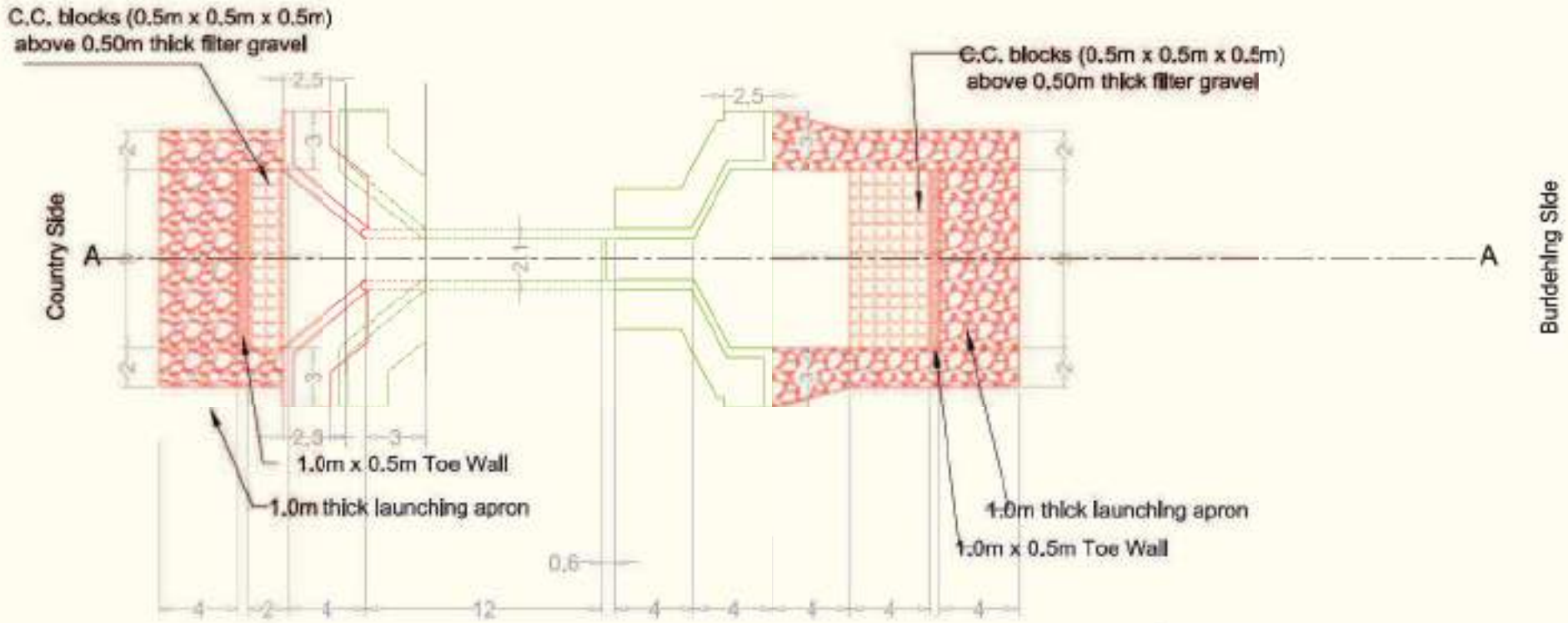
OFFICE OF THE EXECUTIVE ENGINEER DIBRUGARH W.R. DIVISION , DIBRUGARH
Name of Project:- Integrated Water Resources Management of Buridehng Basin
ELEVATICN OF SLUICE CULVERT NO. E-24/2 & E-24/3(Typical)
DIBRUGARH W R DIVISION DIBRUGARH



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WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

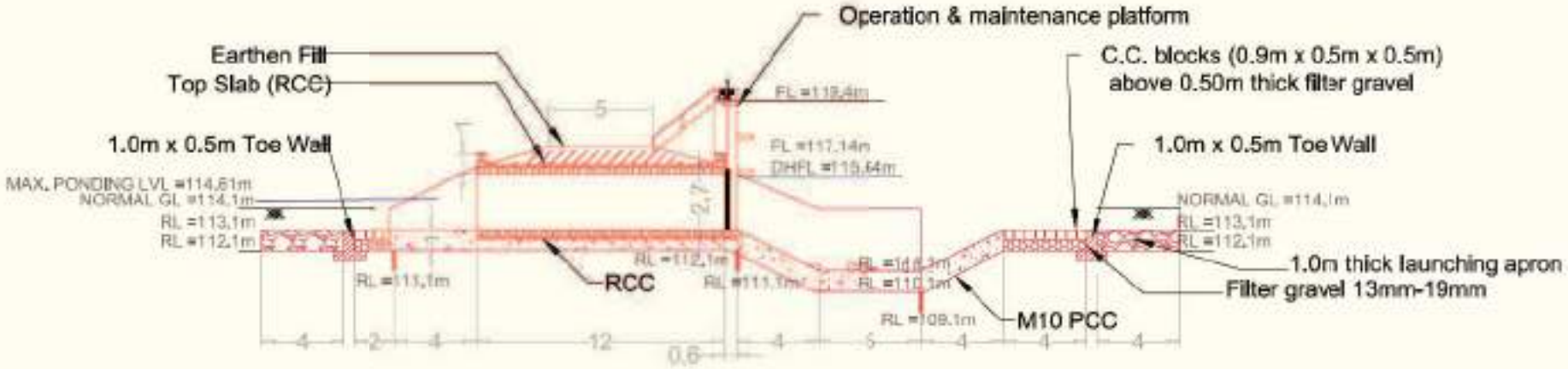
Name of Project:- Integrated Water Resources Management of Burldehing Basin

PLAN OF SLUICE CULVERT NO. E-24/2 & E-24/3(Typical)

DIBRUGARH W R DIVISION
DIBRUGARH

Country Side

Buridehing Side



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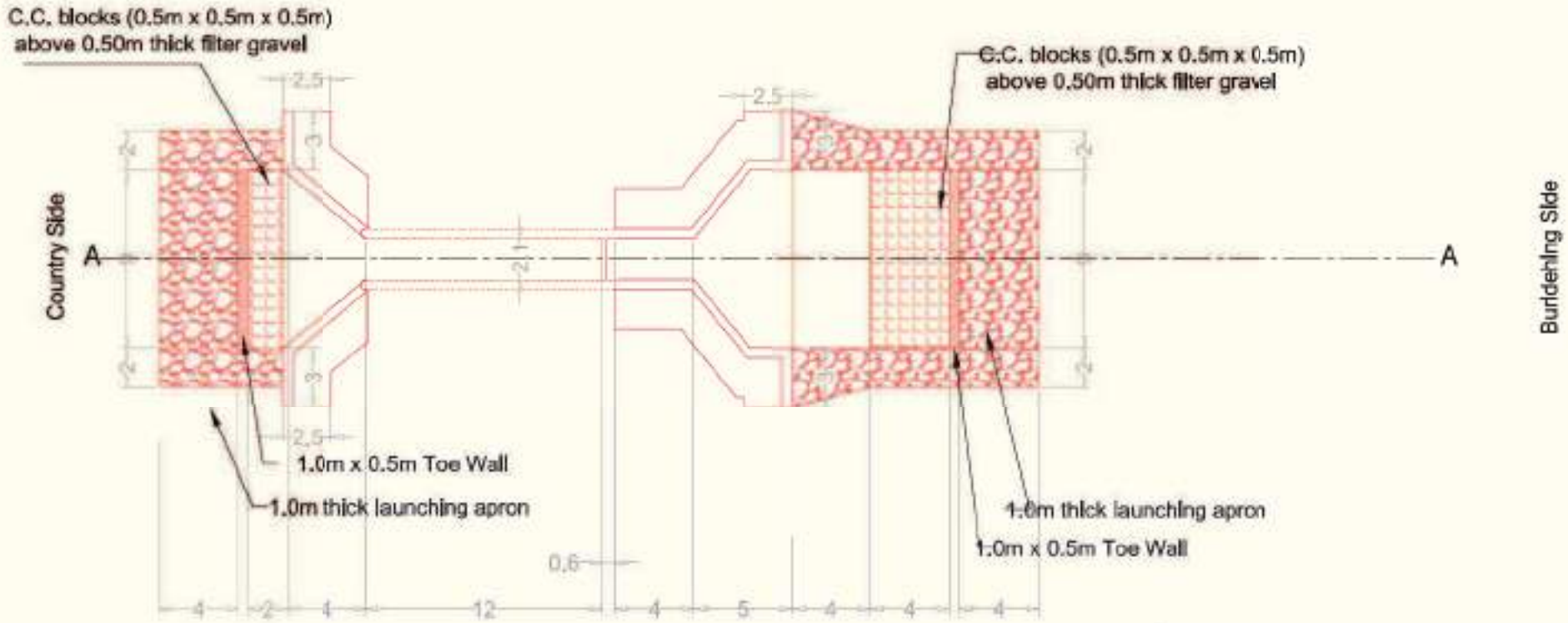
DIBRUGARH W.R. DIVISION , DIBRUGARH

Name of Project:- Integrated Water Resources Management of Buridehng Basin

ELEVATICN OF SLUICE CULVERT NO. E-24/4(Typical)

DIBRUGARH W R DIVISION
DIBRUGARH



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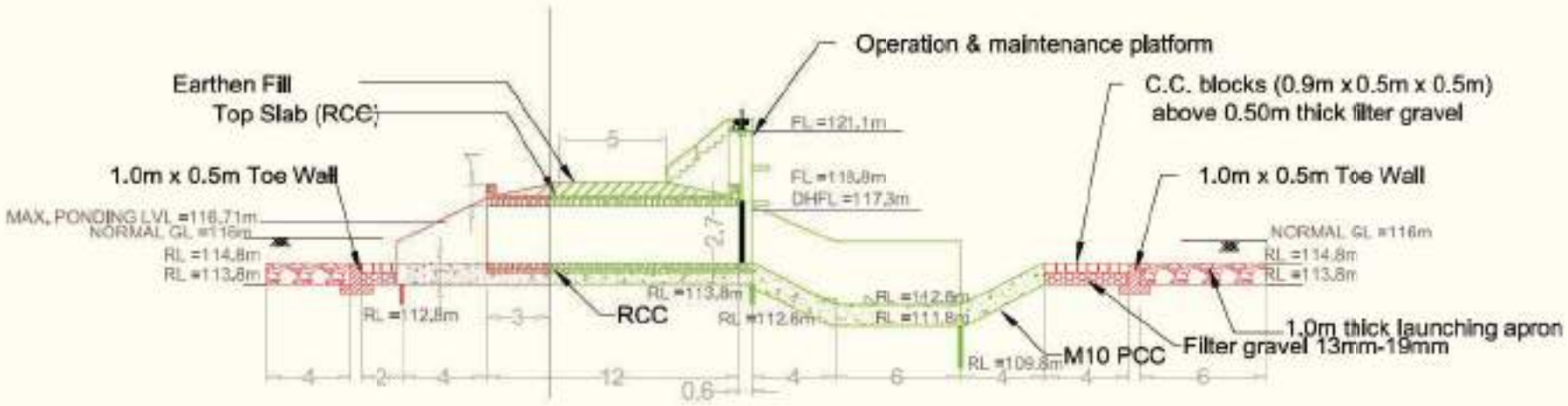
Name of Project:- Integrated Water Resources Management of Burldehing Basin

PLAN OF SLUICE CULVERT NO. E-24/4(Typical)

DIBRUGARH W R DIVISION
DIBRUGARH

Country Side

Buridehing Side



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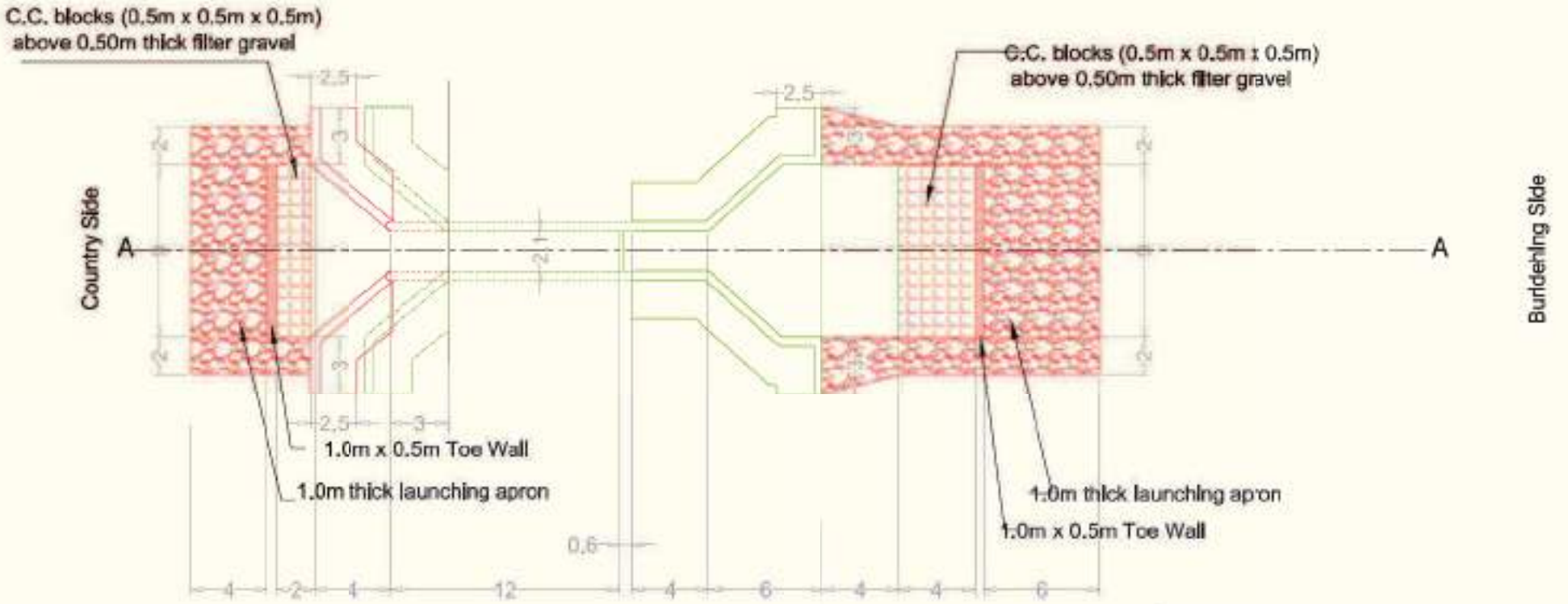
Name of Project:- Integrated Water Resources Management of Buridehng Basin

ELEVATICN OF SLUICE CULVERT NO. E-25/1

DIBRUGARH W'R DIVISION
DIBRUGARH



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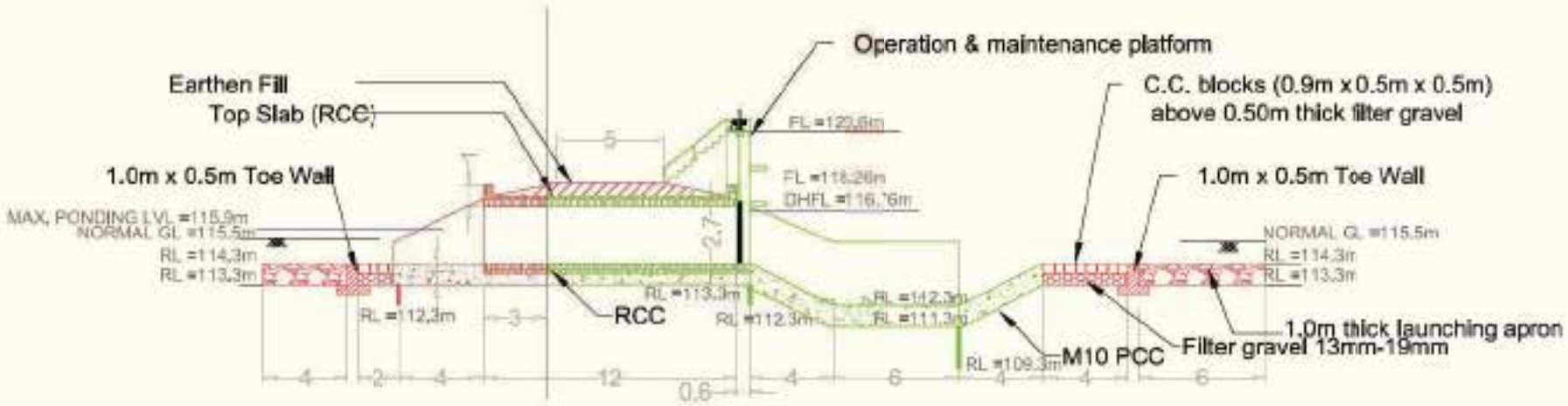
Name of Project:- Integrated Water Resources Management of Burideihing Basin

PLAN OF SLUICE CULVERT NO. E-25/1

DIBRUGARH W R DIVISION
DIBRUGARH

Country Side

Buridehing Side



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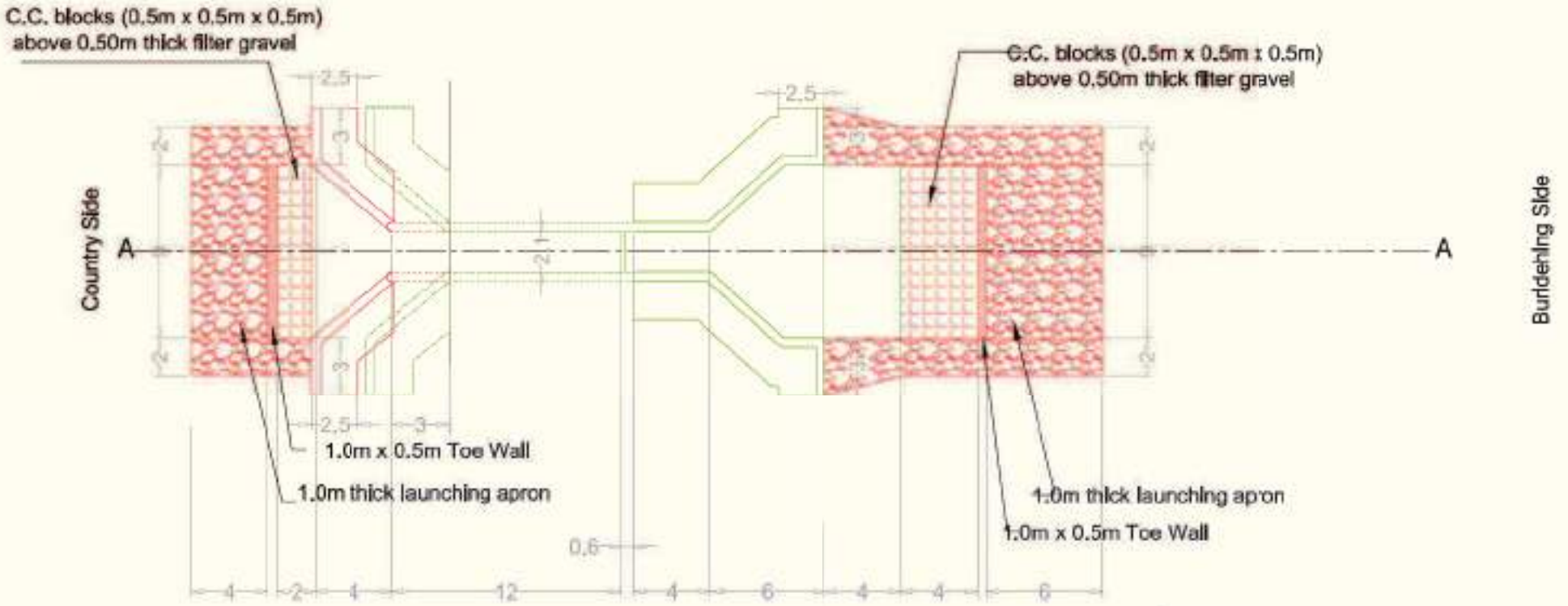
GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

Name of Project:- Integrated Water Resources Management of Buridehng Basin

ELEVATICN OF SLUICE CULVERT NO. E-25/2

DIBRUGARH W R DIVISION
DIBRUGARH



PLAN

CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

J.E./A.E.

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

A.E.E.

(ALL DIMENSIONS ARE IN METRE)

GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

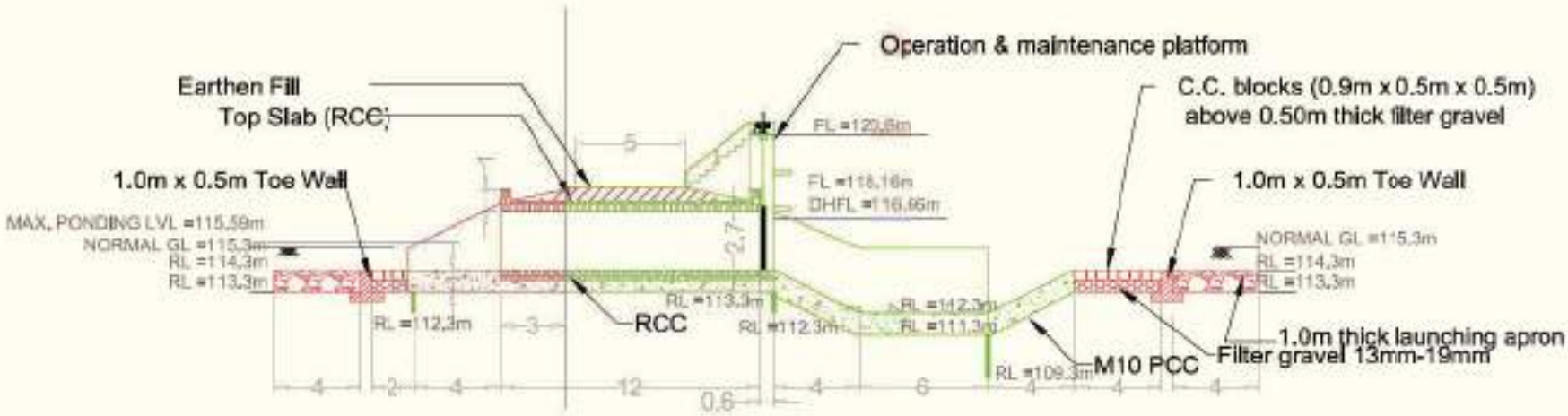
Name of Project:- Integrated Water Resources Management of Burideihing Basin

PLAN OF SLUICE CULVERT NO. E-25/2

DIBRUGARH W R DIVISION
DIBRUGARH

Country Side

Buridehing Side



SCALE 1mm ; 0.30m
(ALL DIMENSIONS ARE IN METRE)

SECTIONAL ELEVATION AT A-A

CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

J.E./A.E.

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

A.E.E.

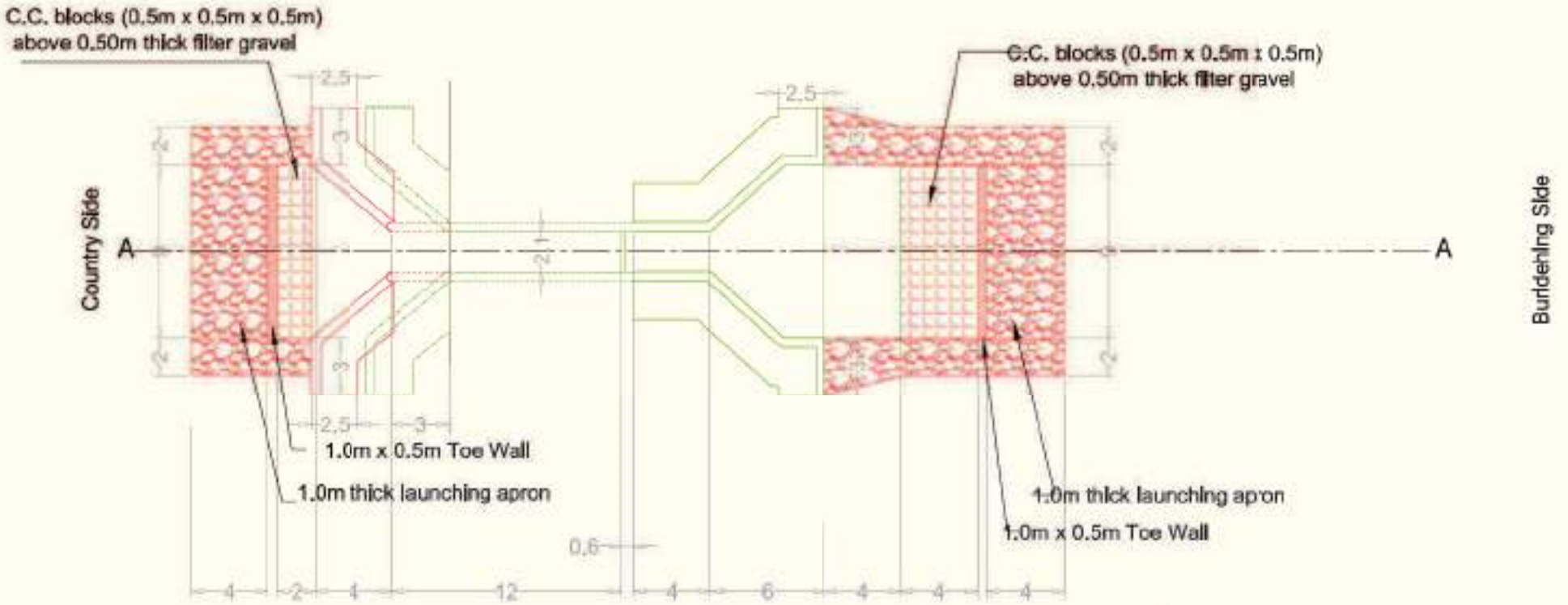
GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

Name of Project:- Integrated Water Resources Management of Buridehng Basin

ELEVATICN OF SLUICE CULVERT NO. E-25/3

DIBRUGARH W R DIVISION
DIBRUGARH



PLAN

CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

J.E./A.E.

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

A.E.E.

(ALL DIMENSIONS ARE IN METRE)

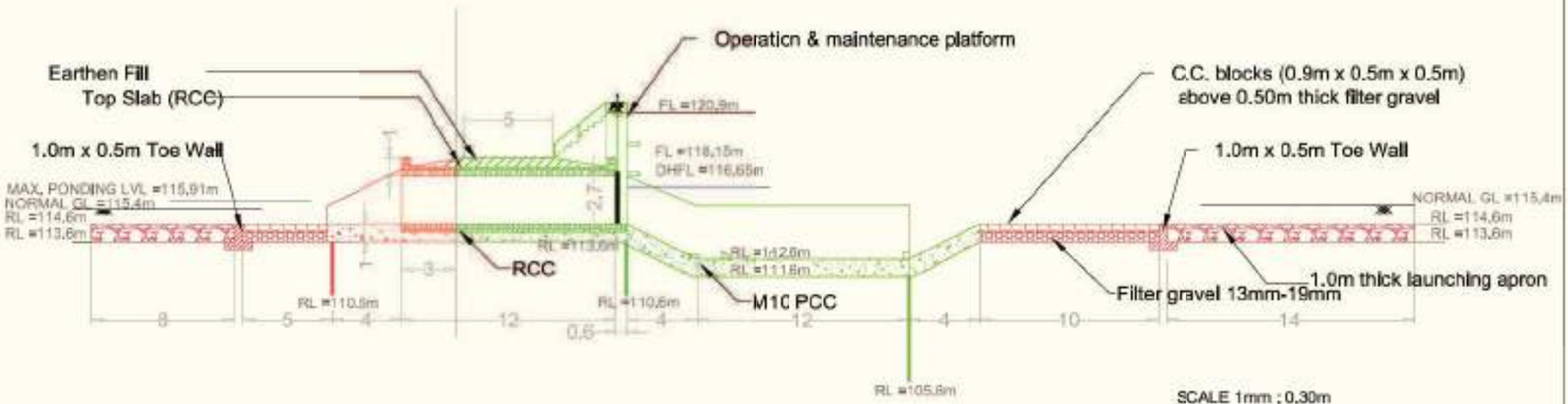
GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

Name of Project:- Integrated Water Resources Management of Burldehing Basin

PLAN OF SLUICE CULVERT NO. E-25/3

DIBRUGARH W.R DIVISION
DIBRUGARH



SECTIONAL ELEVATION AT A-A

CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

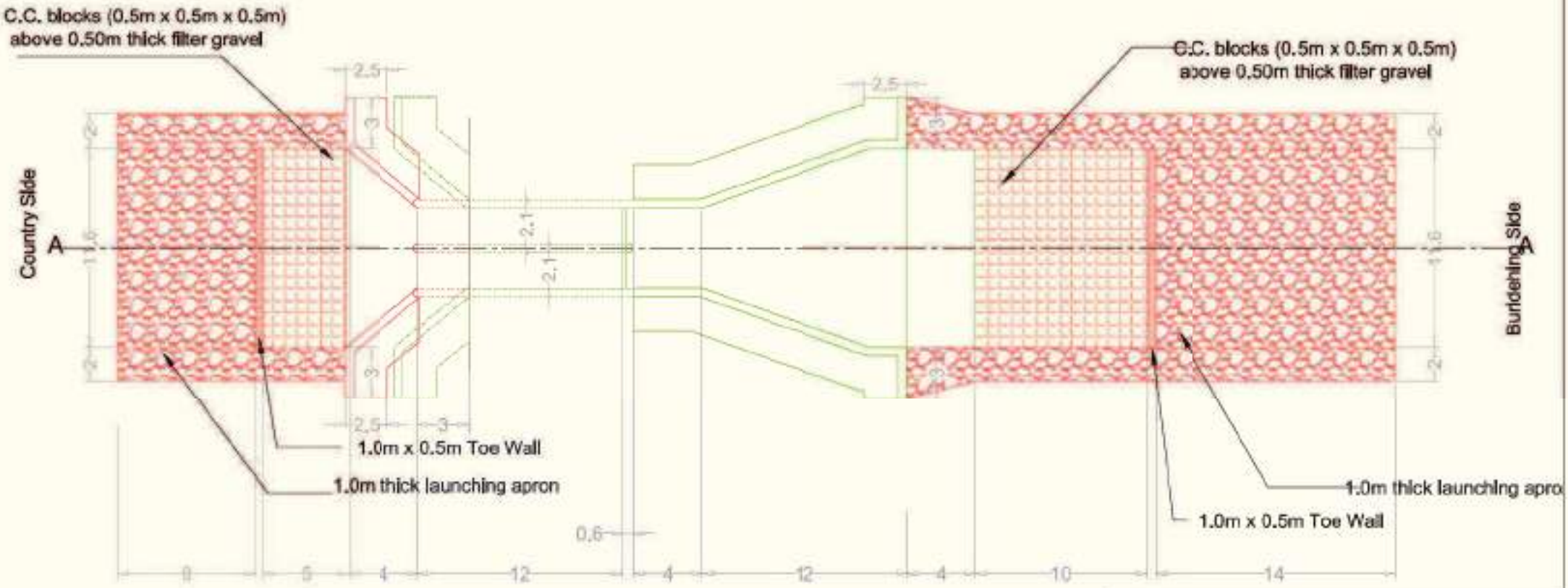
J.E./A.E.

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

A.E.E.

GOVT OF ASSAM WATER RESOURCES DEPARTMENT
OFFICE OF THE EXECUTIVE ENGINEER DIBRUGARH W.R. DIVISION , DIBRUGARH
Name of Project:- Integrated Water Resources Management of Buridehng Basin
ELEVATION OF SLUICE CULVERT NO. E-25/4

DIBRUGARH W R DIVISION
DIBRUGARH



PLAN

CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

J.E./A.E.

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

A.E.E.

(ALL DIMENSIONS ARE IN METRE)

GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

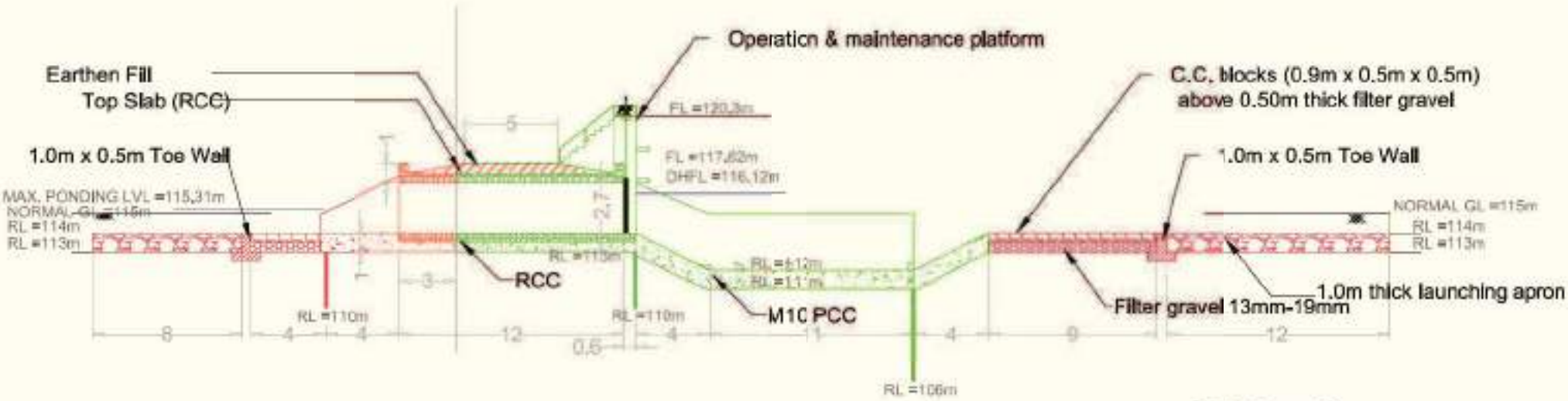
Name of Project:- Integrated Water Resources Management of Burideihing Basin

PLAN OF SLUICE CULVERT NO. E-25/4

DIBRUGARH W R DIVISION
DIBRUGARH

Country Side

Buridehing Side



SCALE 1mm ; 0.30m
(ALL DIMENSIONS ARE IN METRE)

SECTIONAL ELEVATION AT A-A

CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

J.E./A.E.

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

A.E.E.

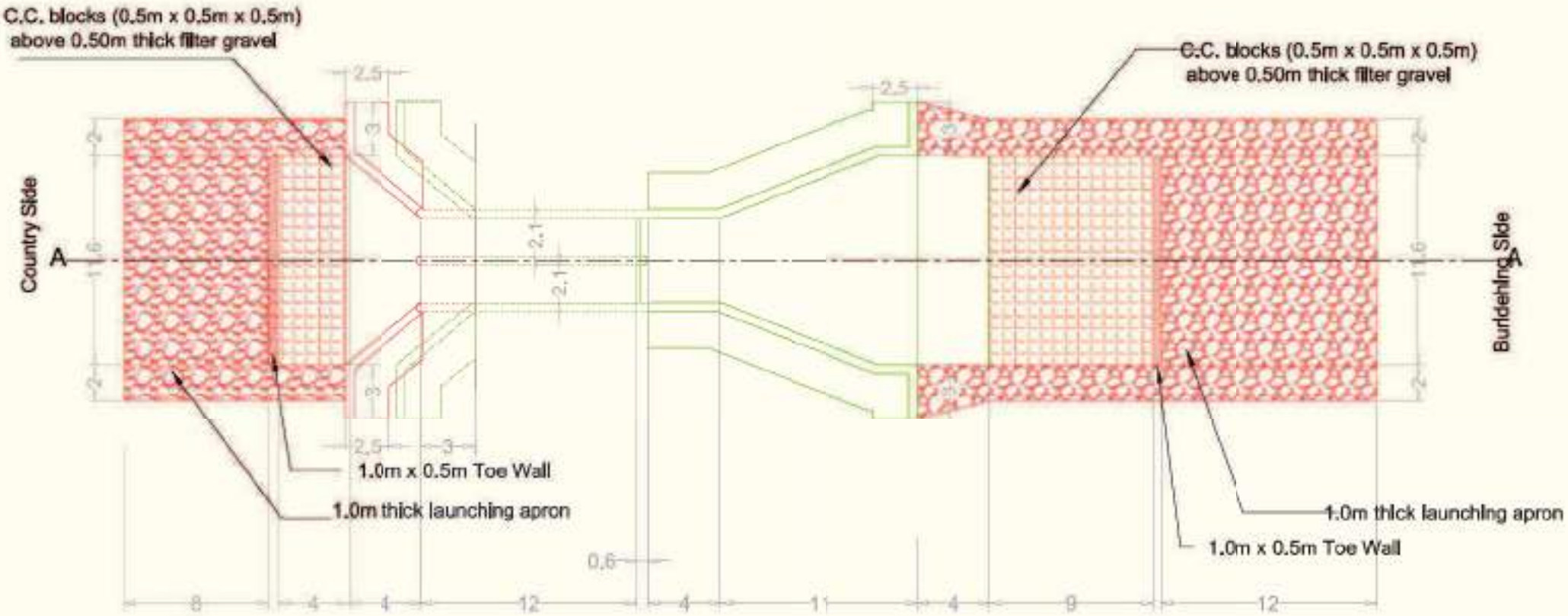
GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

Name of Project:- Integrated Water Resources Management of Buridehng Basin

ELEVATION OF SLUICE CULVERT NO. E-25/5

DIBRUGARH W R DIVISION
DIBRUGARH



PLAN

CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

J.E./A.E.

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

A.E.E.

(ALL DIMENSIONS ARE IN METRE)

GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

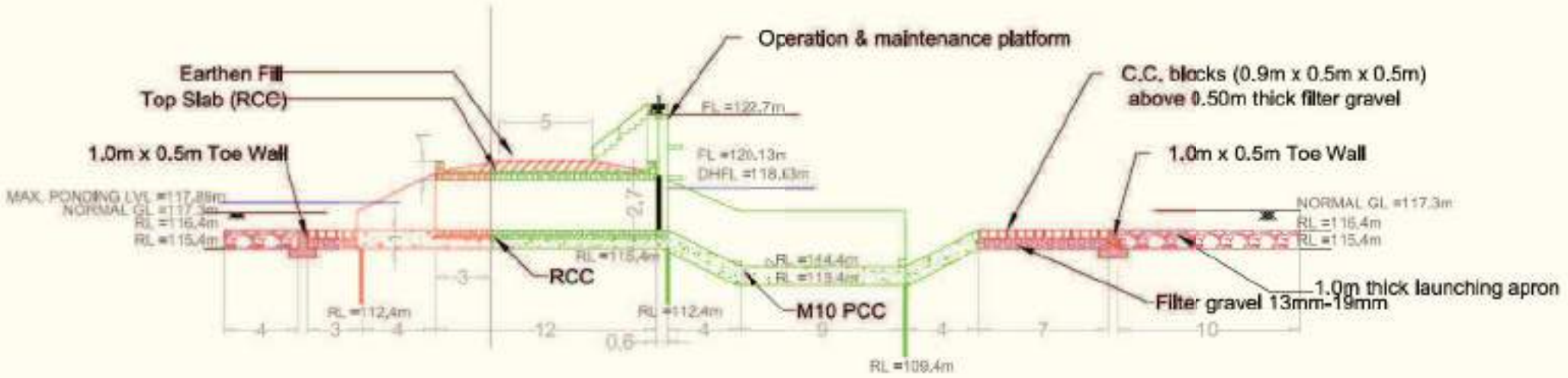
Name of Project:- Integrated Water Resources Management of Burldehing Basin

PLAN OF SLUICE CULVERT NO. E-25/5

DIBRUGARH W R DIVISION
DIBRUGARH

Country Side

Buridehing Side



SCALE 1mm ; 0.30m
(ALL DIMENSIONS ARE IN METRE)

SECTIONAL ELEVATION AT A-A

CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

J.E./A.E.

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

A.E.E.

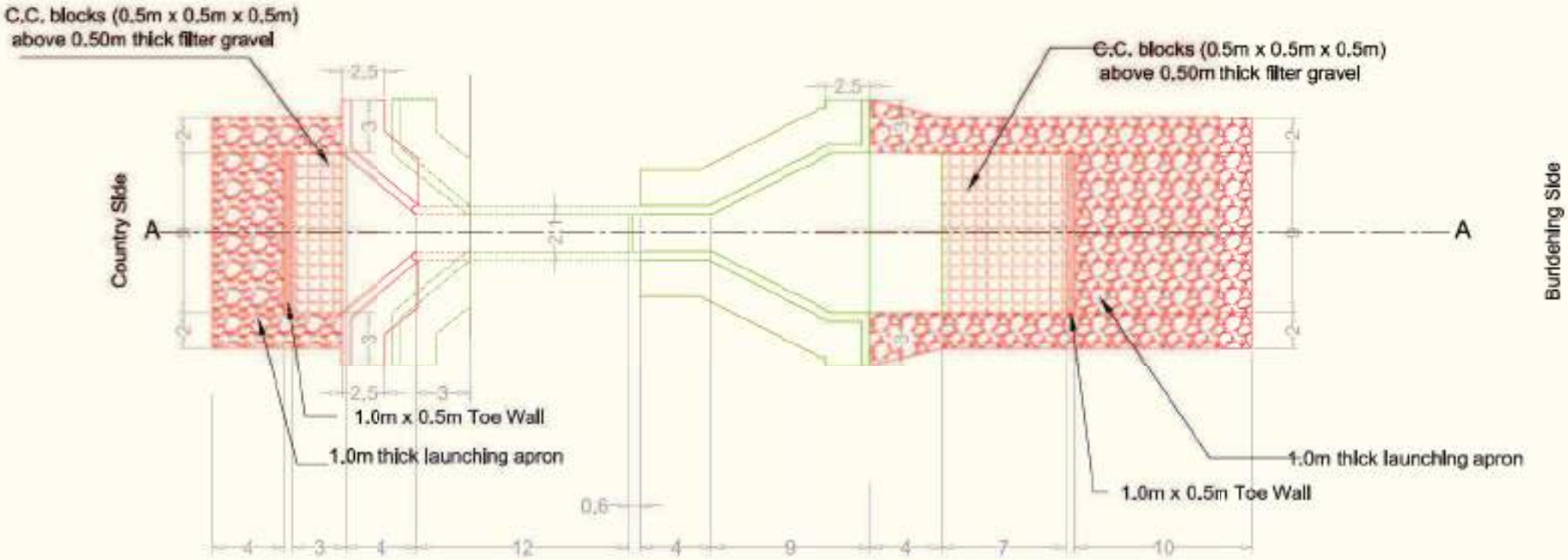
GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

Name of Project:- Integrated Water Resources Management of Buridehng Basin

ELEVATICN OF SLUICE CULVERT NO. E-27/1

DIBRUGARH W R DIVISION
DIBRUGARH



PLAN

CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

J.E./A.E.

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

A.E.E.

(ALL DIMENSIONS ARE IN METRE)

GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

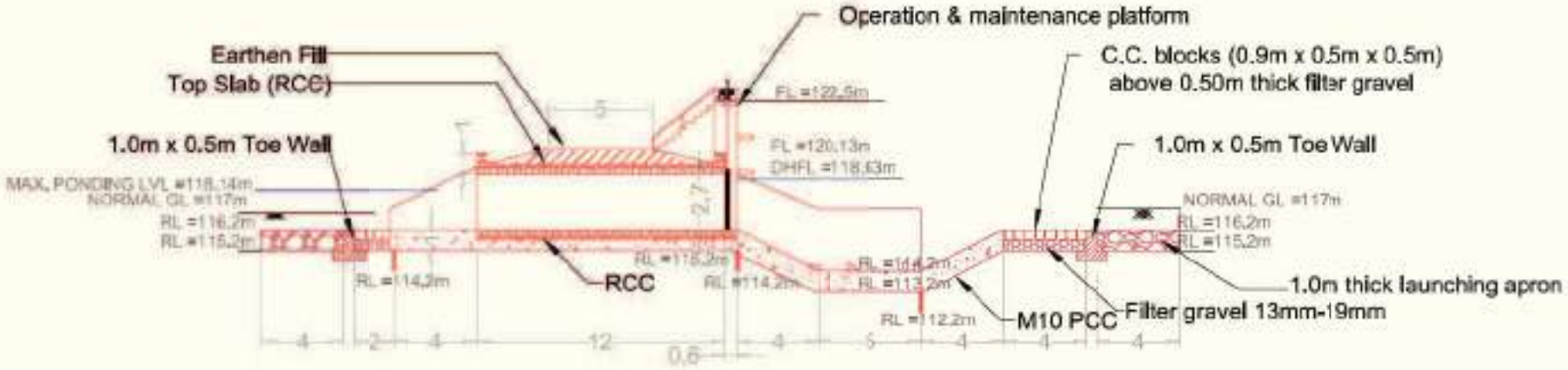
Name of Project:- Integrated Water Resources Management of Burldehing Basin

PLAN OF SLUICE CULVERT NO. E-27/1

DIBRUGARH W R DIVISION
DIBRUGARH

Country Side

Buridehing Side



SCALE 1mm : 0.30m
(ALL DIMENSIONS ARE IN METRE)

SECTIONAL ELEVATION AT A-A

CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

J.E./A.E.

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

A.E.E.

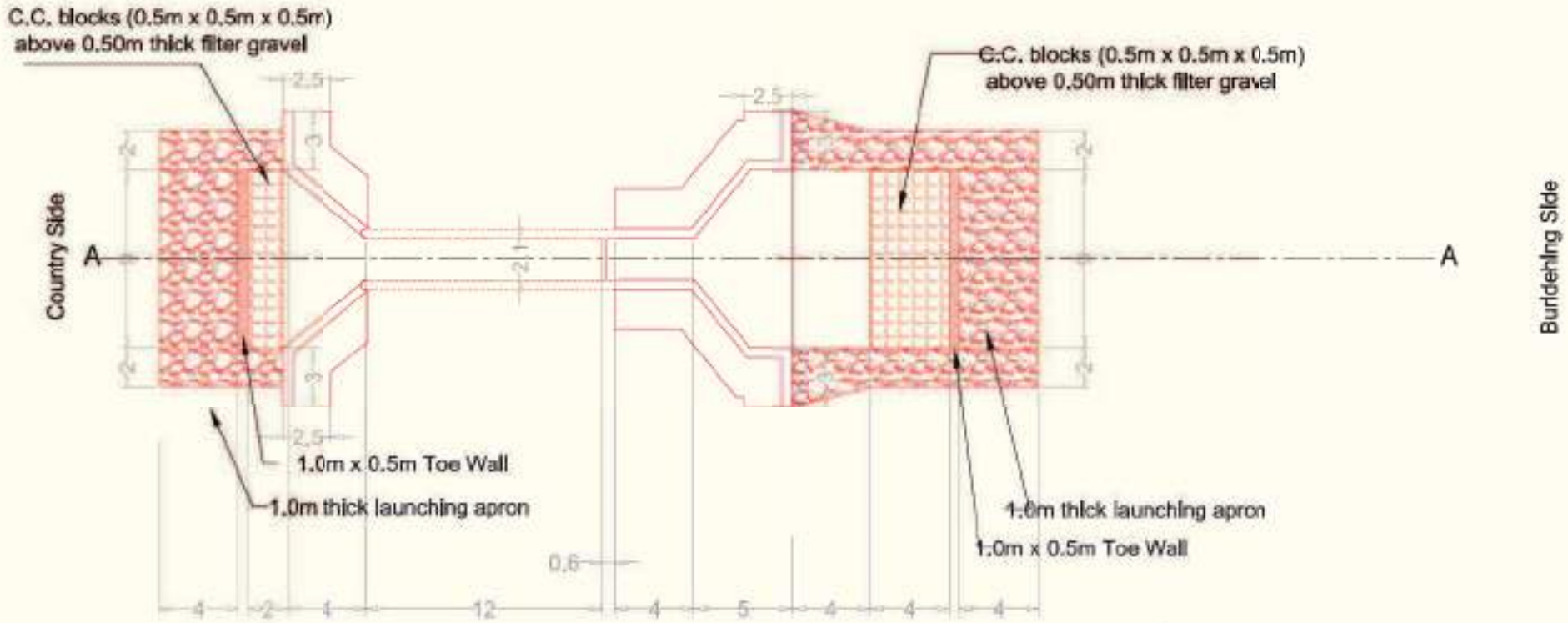
GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

Name of Project:- Integrated Water Resources Management of Buridehng Basin

ELEVATICN OF SLUICE CULVERT NO. E- 27/2, 27/3,27/4 & 28/1

DIBRUGARH W R DIVISION
DIBRUGARH



PLAN

CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

J.E./A.E.

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

A.E.E.

(ALL DIMENSIONS ARE IN METRE)

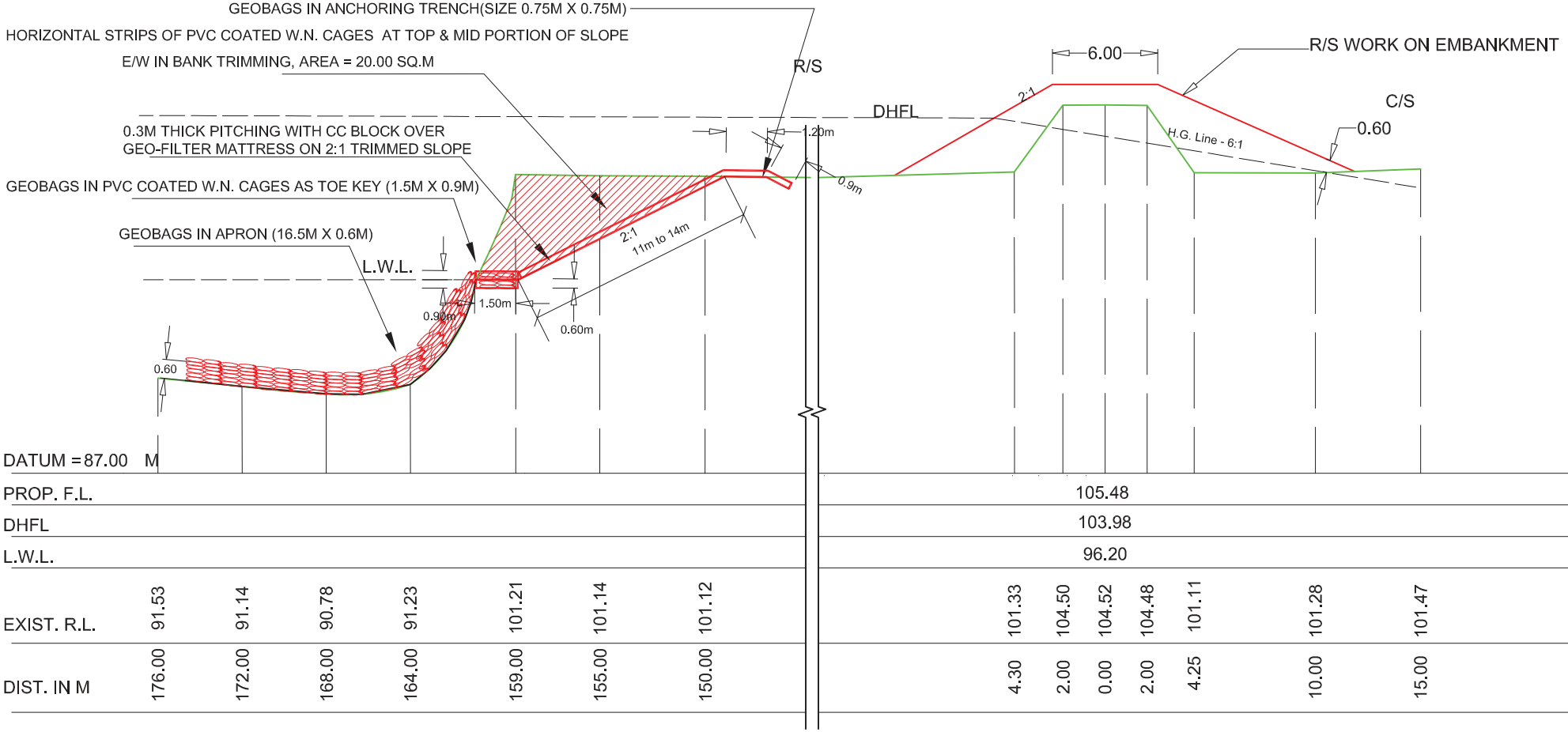
GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

Name of Project:- Integrated Water Resources Management of Burldehing Basin

ELEVATION OF SLUICE CULVERT NO. E- 27/2, 27/3,27/4 & 28/1

DIBRUGARH W R DIVISION
DIBRUGARH



PROP. F.L.	105.48													
DHFL	103.98													
L.W.L.	96.20													
EXIST. R.L.	91.53	91.14	90.78	91.23	101.21	101.14	101.12	101.33	104.50	104.52	104.48	101.11	101.28	101.47
DIST. IN M	176.00	172.00	168.00	164.00	159.00	155.00	150.00	4.30	2.00	0.00	2.00	4.25	10.00	15.00

TYPICAL C/S OF ANTI-EROSION WORKS

SCALE - 1:300

GOVT. OF ASSAM
WATER RESOURCES DEPARTMENT (GUWAHATI)

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH WATER RESOURCES DIVISION
DIBRUGARH

NAME OF PROJECT: FLOOD MANAGEMENT OF RIVER BURIDEHING ALONG WITH ANTI-EROSION MEASURES

CERTIFIED THAT THE SURVEY WAS DONE BY ME
AND CORRECT TO THE BEST OF MY KNOWLEDGE

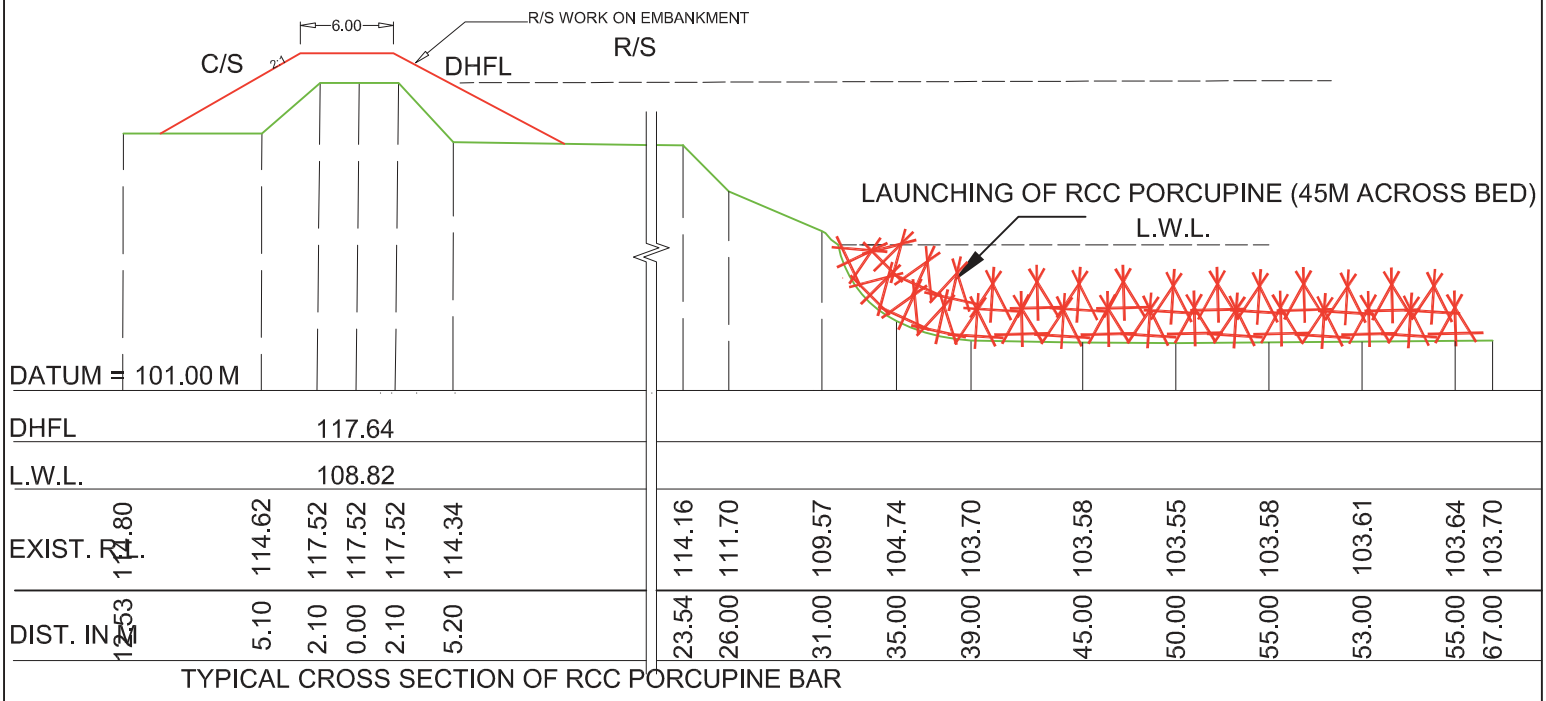
J.E.

CERTIFIED THAT THE SURVEY HAVE BEEN
CHECKED AT RANDOM AND FOUND CORRECT

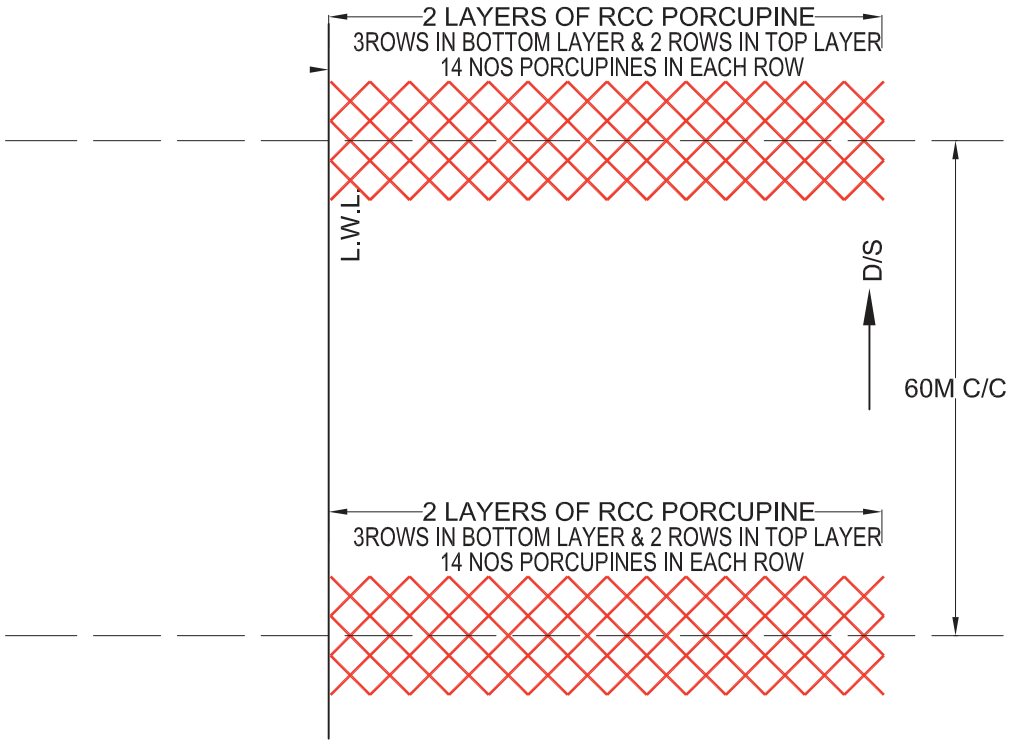
A.E.E.

E.E.
DIBRUGARH

EXECUTIVE ENGINEER
DIBRUGARH W. R. DIVISION
DIBRUGARH



TYPICAL CROSS SECTION OF RCC PORCUPINE BAR



PLAN OF RCC PORCUPINE BAR

SCALE - 1:400

CERTIFIED THAT THE SURVEY WAS DONE BY ME
AND CORRECT TO THE BEST OF MY KNOWLEDGE

A.E./J.E.

CHECKED AT RANDOM AND FOUND CORRECT

A.E.E.(NHK) E.E.
DIBRUGARH

GOVT. OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W. R. DEPARTMENT
DIBRUGARH

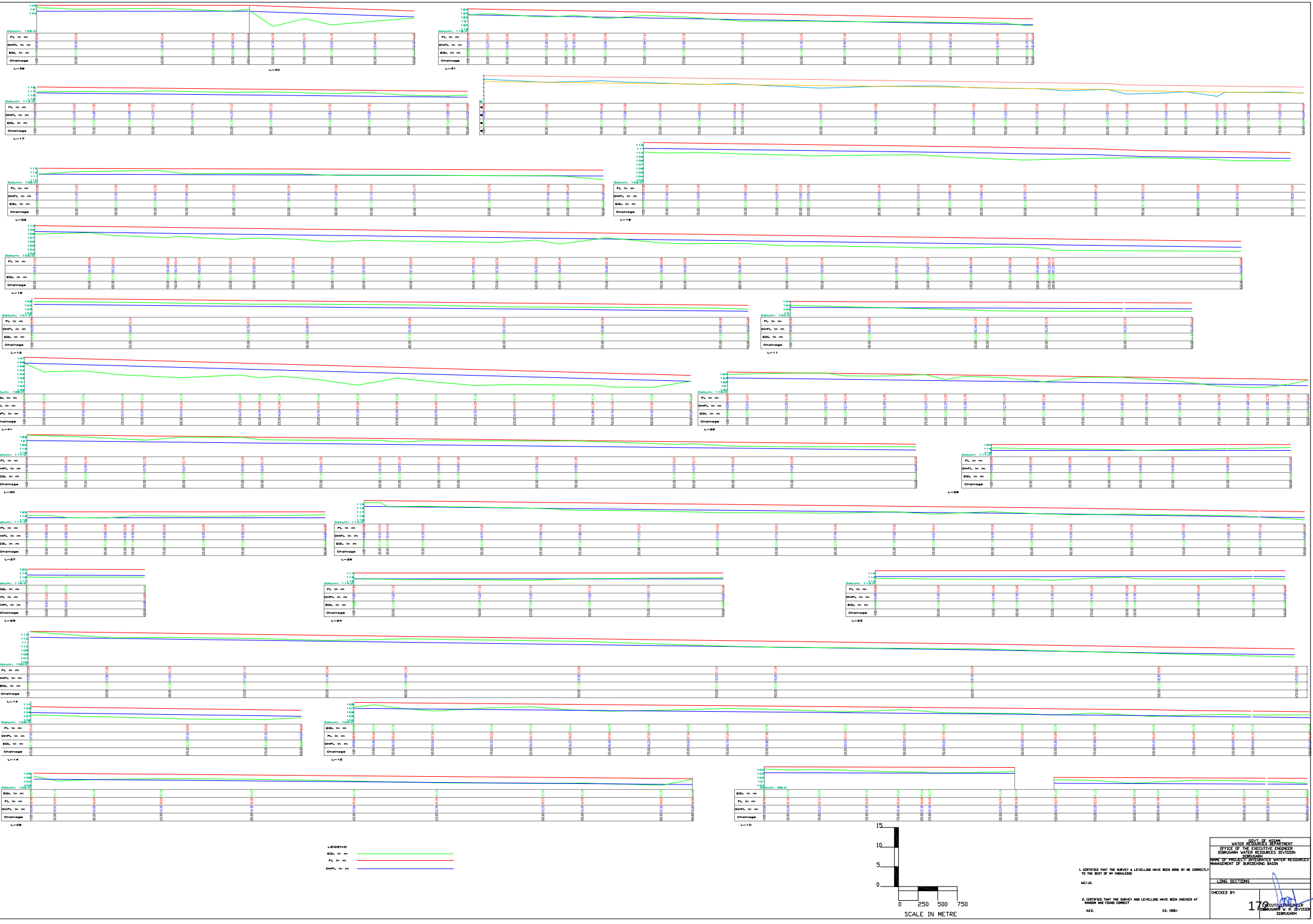
NAME OF PROJECT: FLOOD MANAGEMENT OF RIVER BURIDEHING ALONG WITH ANTI-EROSION MEASURES

TYPICAL CROSS SECTION OF PORCUPINE BAR

CHECKED BY

AEE (TC)

EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION



GOVT. OF ASSAM
WATER RESOURCES DEPARTMENT
OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH WATER RESOURCES DIVISION
DIBRUGARH
NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURHIDIHING BASIN

LONG SECTIONS

I, CERTIFIED THAT THE SURVEY & LEVELLING HAVE BEEN DONE BY ME CORRECTLY TO THE BEST OF MY KNOWLEDGE

AE/JE.

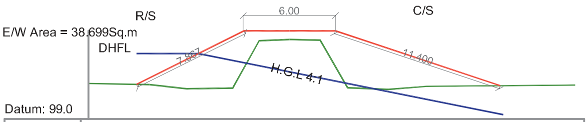
II. CERTIFIED THAT THE SURVEY AND LEVELLING HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

AEE. EE. (WR)

CHECKED BY:

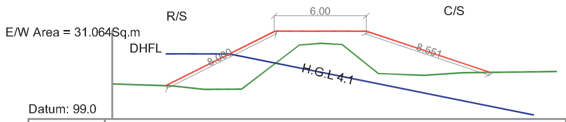
17

EXECUTIVE ENGINEER
DIBRUGARH W. R. DIVISION
DIBRUGARH



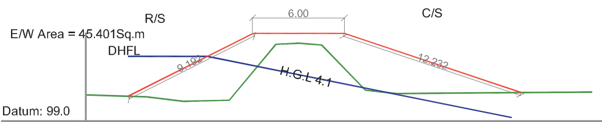
FL	104.780
DHFL	103.280
EGL	101.323 101.246 100.979 101.019 104.121 104.205 104.166 101.034 100.934 101.134 101.216
Offset	13.199 10.037 9.195 6.740 6.000 3.740 3.000 2.000 0.000 2.000 3.000 3.800 6.500 8.955 13.815 / 14.000

XSection at Ch.0m



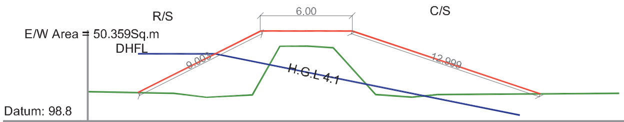
FL	104.759
DHFL	103.259
EGL	101.292 101.169 100.935 100.955 103.844 103.952 103.886 101.974 101.854 102.031 102.111
Offset	13.660 10.155 / 9.762 7.580 6.000 5.180 3.000 1.400 0.000 1.400 3.000 3.805 6.805 9.260 11.112 14.000

XSection at Ch.300m



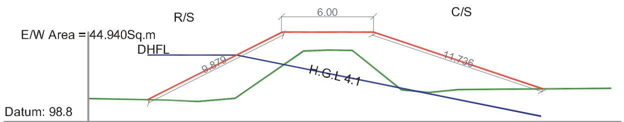
FL	104.732
DHFL	103.232
EGL	100.708 100.584 100.284 100.364 104.019 104.091 103.973 101.018 100.798 100.820 100.897
Offset	13.993 11.222 10.015 7.560 6.001 4.560 3.000 1.500 0.000 1.500 3.000 4.380 6.480 8.389 13.999 / 14.604

XSection at Ch.700m



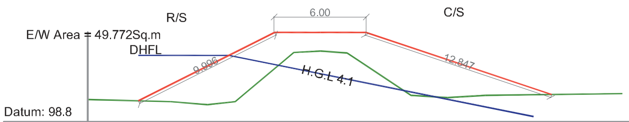
FL	104.691
DHFL	103.191
EGL	100.725 100.622 100.355 100.515 103.693 103.705 103.600 100.537 100.357 100.534 100.616
Offset	14.347 11.053 8.732 6.550 / 6.000 3.550 / 3.000 1.750 0.000 1.750 3.000 4.540 6.940 8.576 14.000 15.332

XSection at Ch.1300m



FL	104.663
DHFL	103.163
EGL	100.316 100.224 100.124 100.344 103.423 103.483 103.470 100.883 100.723 100.901 100.993
Offset	15.737 11.836 10.662 8.480 [illegible] / 6.000 3.000 1.600 0.000 1.600 3.000 4.850 6.650 8.559 14.000 / [illegible]

XSection at Ch.1700m



FL	104.643
DHFL	103.143
EGL	100.259 100.119 99.919 100.119 103.330 103.426 103.294 100.527 100.387 100.520 100.643
Offset	15.253 11.941 9.845 7.390 6.000 / 5.590 3.000 1.750 0.000 1.750 3.000 5.950 8.350 10.805 14.000 15.188

XSection at Ch.2000m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (RHS SLOPE), 2:1 SLOPE IN RIVER SIDE (LHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

NOTE:

1. SECTIONAL AREA INDICATED IS AREA BETWEEN EXISTING GROUND AND FINISHED GROUND PROFILES ONLY AND NOT INCLUSIVE OF AREA FOR GRABBING
2. GRABBING TO BE CONSIDERED FOR ENTIRE WIDTH BETWEEN TOES OF FINISHED PROFILE ON EXISTING GROUND FOR A DEPTH OF 0.15M
3. RIVER SIDE SLOPE OF EMBANKMENT = 2H:1V, COUNTRY SIDE SLOPE OF EMBANKMENT = 3H:1V
4. FREEBOARD ABOVE D.H.F.L. = 1.5M

3 1 0
0 25 50
SCALE IN METRE

CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

J.E./A.E. A.E.E. E.E.

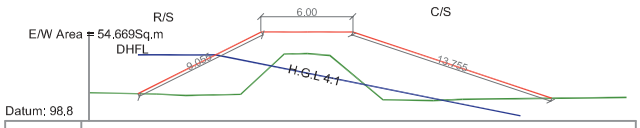
GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

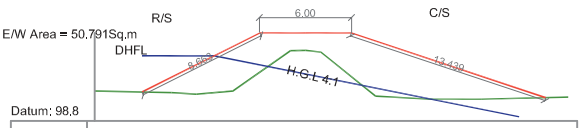
Cross-sections of Embankment
Embankment: E-10, EXTN. OF TENGAKHAT BUND FROM BHOGAMUR TO SESSAMUKH

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



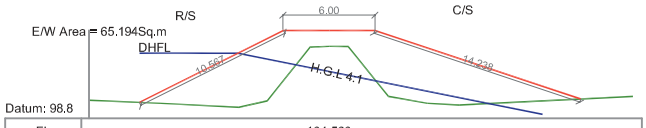
FL	104.636													
DHFL	103.136													
EGL	100.647	100.564	100.464	100.544	103.187	103.223	103.091	100.188	100.128	100.217				100.345
Offset	14.308	11.099	9.869	7.960	6.000	4.360	3.000	1.500	0.000	1.500	3.000	4.980	8.280	10.189	14.000	16.049

XSection at Ch.2100m



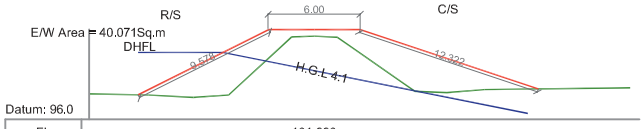
FL	104.574													
DHFL	103.074													
EGL	100.768	100.657	100.557	100.757	103.404	103.428	103.310	100.425	100.226	100.226				100.359
Offset	13.847	10.749	8.816	7.180	6.000	4.780	3.000	1.000	0.000	1.000	3.000	4.591	8.088	11.553	14.000	15.749

XSection at Ch.3000m



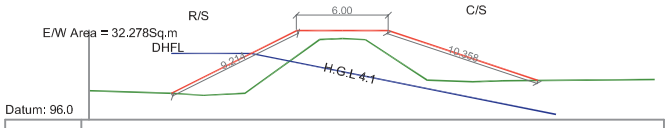
FL	104.560													
DHFL	103.060													
EGL	99.971	99.779	99.511	99.932	103.455	103.515	103.502	100.225	99.779	99.664				100.226
Offset	15.755	12.452	11.101	6.001	5.000	4.064	3.000	1.250	0.000	1.250	3.000	3.890	6.436	8.521	13.999	16.507

XSection at Ch.3200m



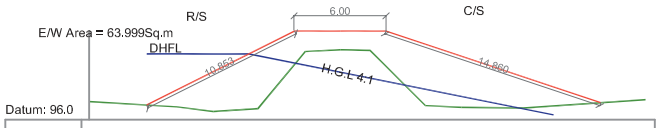
FL	101.880													
DHFL	100.380													
EGL	97.660	97.584	97.432	97.584	101.400	101.448	101.369			97.822	97.742	97.942		
Offset	14.760	11.567	10.901	7.946	6.000	3.810	3.000	1.500	0.000	1.500	3.000	6.600	8.700	11.155	14.000	14.690

XSection at Ch.15200m



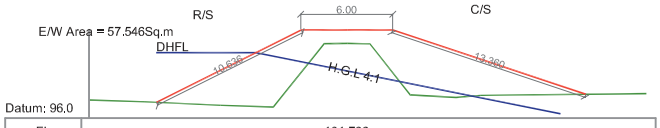
FL	101.848													
DHFL	100.348													
EGL	97.903	97.730	97.596	97.736	101.253	101.325	101.246	98.588	98.488	98.554				98.633
Offset	16.632	11.282	11.247	9.100	6.000	6.000	3.000	1.500	0.000	1.500	3.000	5.550	8.550	10.459	12.827	14.000

XSection at Ch.15700m



FL	101.815													
DHFL	100.315													
EGL	97.190	96.841	96.531	96.725	100.472	100.589	100.550	96.927	96.810	96.771				97.317
Offset	16.477	12.707	10.713	8.340	6.000	5.402	3.000	2.294	0.000	1.945	3.000	5.578	7.962	12.049	14.000	17.098

XSection at Ch.16200m



FL	101.796													
DHFL	100.296													
EGL	97.193	97.077	96.845	96.729	100.889	100.901	100.875	97.522	97.362	97.495				97.615
Offset	16.927	13.324	12.513	8.293	6.000	4.840	3.000	1.500	0.000	1.500	3.000	4.140	7.140	8.776	14.000	15.674

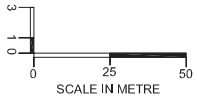
XSection at Ch.16500m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (RHS SLOPE), 2:1 SLOPE IN RIVER SIDE (LHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

NOTE:

1. SECTIONAL AREA INDICATED IS AREA BETWEEN EXISTING GROUND AND FINISHED GROUND PROFILES ONLY AND NOT INCLUSIVE OF AREA FOR GRABBING
2. GRABBING TO BE CONSIDERED FOR ENTIRE WIDTH BETWEEN TOES OF FINISHED PROFILE ON EXISTING GROUND FOR A DEPTH OF 0.15M
3. RIVER SIDE SLOPE OF EMBANKMENT = 2H:1V, COUNTRY SIDE SLOPE OF EMBANKMENT = 3H:1V
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

J.E./A.E. A.E.E. E.E.

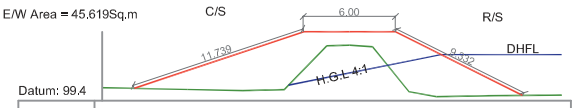
GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

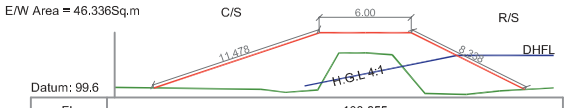
Cross-sections of Embankment
Embankment: E-10, EXTN. OF TENGAKHAT BUND FROM BHOGAMUR TO SESSAMUKH

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



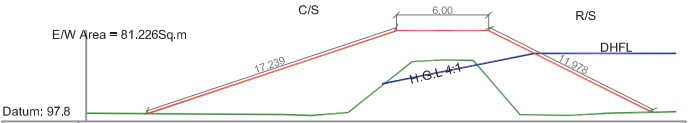
FL	103.930														
DHFL	102.430														
EGL	100.262		100.144	100.077	100.132	103.011	103.050	102.942	100.002	99.679		99.742		99.774	
Offset	16.233	14.137	10.657	6.991	4.286	3.000	1.500	0.000	1.500	3.000	3.902	5.700	6.000	9.210	11.347	13.922

XSection at Ch.0m



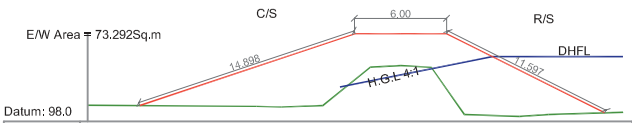
FL	103.855														
DHFL	102.355														
EGL	100.258		100.136	99.936	100.096	102.517	102.530	102.410	99.861	99.801		100.035		100.230	
Offset	16.460	13.889	6.866	5.230	4.000	3.000	1.750	0.000	1.750	3.000	3.910	6.000	6.810	8.792	10.458	12.343

XSection at Ch.1000m



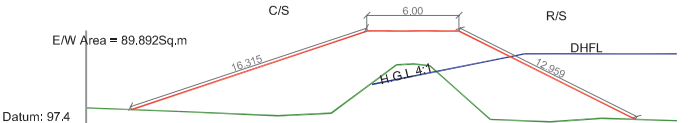
FL	103.755														
DHFL	102.255														
EGL	98.329			98.249	98.183	98.383	101.715	101.820	101.784	98.231		98.191	98.325		98.439
Offset	23.398	19.354	10.509	8.600	6.200	4.000	3.000	2.000	0.000	2.000	3.000	5.060	6.000	8.360	10.815	13.713	15.322

XSection at Ch.2350m



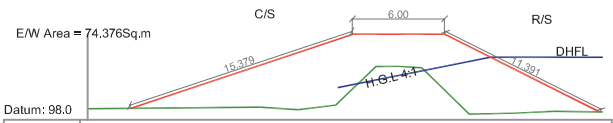
FL	103.744														
DHFL	102.244														
EGL	99.057			98.979	98.935	99.035	101.545	101.650	101.542	98.450		98.310	98.443		98.595
Offset	20.551	17.134	9.456	7.820	5.120	3.999	3.000	2.000	0.000	2.000	3.000	4.170	6.001	7.770	9.679	13.373	14.581

XSection at Ch.2500m



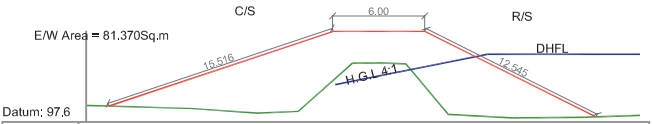
FL	103.688														
DHFL	102.188														
EGL	98.640		98.413		98.128	98.291		101.464	101.530	101.410		97.884	97.721	97.966	97.803
Offset	21.453	18.478	15.404	8.862	5.372	3.000	2.000	1.100	0.000	1.100	3.000	5.056	7.308	8.982	12.352	14.591	17.308

XSection at Ch.3250m



FL	103.613														
DHFL	102.113														
EGL	98.721			98.833	98.657	98.973	101.497	101.510	101.414		98.377		98.447	98.552	98.517
Offset	20.411	17.590	9.139	6.583	4.130	3.000	1.500	0.000	1.500	3.000	4.627	6.001	7.761	10.146	13.383	13.383

XSection at Ch.4250m



FL	103.550														
DHFL	102.050														
EGL	98.685		98.492	98.185	98.300	101.454	101.480	101.420	98.108		97.877		97.916		98.031
Offset	19.214	17.720	12.350	7.948	5.299	3.000	1.750	0.000	1.750	3.000	4.550	7.123	8.766	13.466	14.221	17.123

XSection at Ch.5100m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (LHS SLOPE), 2:1 SLOPE IN RIVER SIDE (RHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

NOTE:

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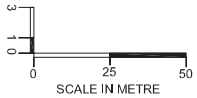
2. GRABBING TO BE CONSIDERED FOR ENTIRE WIDTH BETWEEN TOES OF FINISHED PROFILE ON EXISTING GROUND FOR A DEPTH OF 0.15M
3. RIVER SIDE SLOPE OF EMBANKMENT = 2H:1V, COUNTRY SIDE SLOPE OF EMBANKMENT = 3H:1V
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



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CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

J.E./A.E.

A.E.E.

E.E.

GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

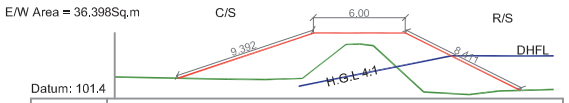
OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

Cross-sections of Embankment
Embankment: E-11, DEHING BUND OLD A.T. ROAD FROM SESSUGHAT TO JAGUNGAON

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH

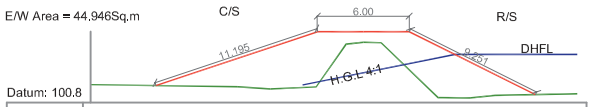
E/W Area = 36.398Sq.m



FL	105.710											
DHFL	104.210											
EGL	102.824		102.674	102.652	102.732	104.954	104.980	104.884	101.835	101.675	101.909	102.011
Offset	16.068	11.910	8.615	6.160	4.000 3.000	0.900	0.000	0.900	3.000	4.200	6.000	7.200	9.109	10.523	12.741

XSection at Ch.0m

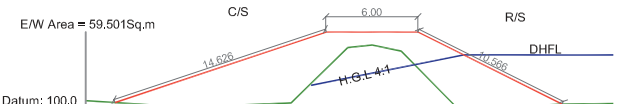
E/W Area = 44.946Sq.m



FL	105.465											
DHFL	103.965											
EGL	101.982		101.854	101.699	101.839	104.642	104.760	104.736	101.130	101.110	101.277	101.381
Offset	17.902	13.621	8.292	6.110	3.999 3.000	1.150	0.000	1.150	3.000	4.890	6.001	6.990	8.626	11.274	14.023

XSection at Ch.1250m

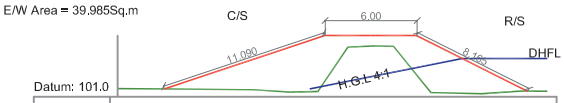
E/W Area = 59.501Sq.m



FL	105.172											
DHFL	103.672											
EGL	100.670		100.295	100.370	100.520	104.150	104.320	103.926	100.408	100.220	100.445	100.482
Offset	18.794	16.875	12.954	8.975	5.324	4.000 3.000	1.601	0.000	1.904	3.000	5.372 6.000	8.438	12.451 12.451	15.812

XSection at Ch.2750m

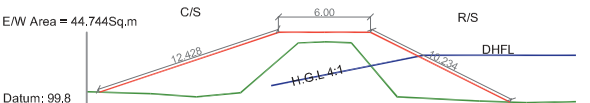
E/W Area = 39.985Sq.m



FL	105.025											
DHFL	103.525											
EGL	101.545		101.469	101.314	101.354	104.261	104.340	104.328	101.280	101.217	101.374	101.374
Offset	16.594	13.521	7.715	5.260	4.000 3.000	1.500	0.000	1.500	3.000 3.966	6.000	7.310	9.743 10.303	11.597

XSection at Ch.3500m

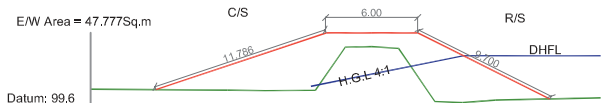
E/W Area = 44.744Sq.m



FL	104.771											
DHFL	103.271											
EGL	100.866	100.740	100.534	100.808	104.071	104.150	104.090	100.534		100.261	100.158	100.226
Offset	15.616 14.790	11.420	8.424	5.528	3.524 3.000	1.750	0.000	1.750	3.000	4.758	6.476	10.151	12.154	13.247	16.476

XSection at Ch.4800m

E/W Area = 47.777Sq.m



FL	104.536											
DHFL	103.036											
EGL	100.843		100.771	100.749	100.769	103.604	103.630	103.522	100.036	99.956	100.123		100.268
Offset	18.454	14.181	9.465	7.010	4.000 3.000	1.750	0.000	1.750	3.000	4.130	6.000 6.000	8.112	11.676	15.008

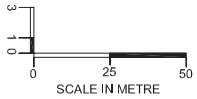
XSection at Ch.6000m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (LHS SLOPE), 2:1 SLOPE IN RIVER SIDE (RHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

NOTE:

1. SECTIONAL AREA INDICATED IS AREA BETWEEN EXISTING GROUND AND FINISHED GROUND PROFILES ONLY AND NOT INCLUSIVE OF AREA FOR GRABBING
2. GRABBING TO BE CONSIDERED FOR ENTIRE WIDTH BETWEEN TOES OF FINISHED PROFILE ON EXISTING GROUND FOR A DEPTH OF 0.15M
3. RIVER SIDE SLOPE OF EMBANKMENT = 2H:1V, COUNTRY SIDE SLOPE OF EMBANKMENT = 3H:1V
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

J.E./A.E. A.E.E. E.E.

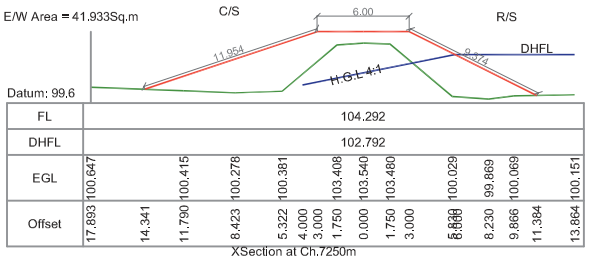
GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

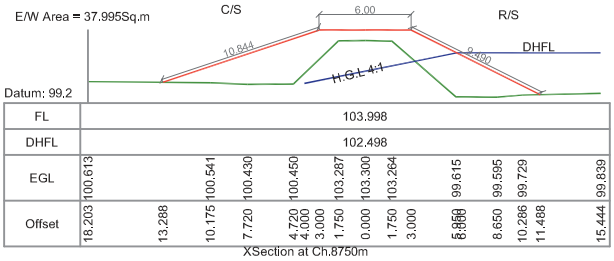
Cross-sections of Embankment
Embankment: E-12, DEHING BUND 1ST SECTION FROM AGHUNIBARI TO SESSUGHAT

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



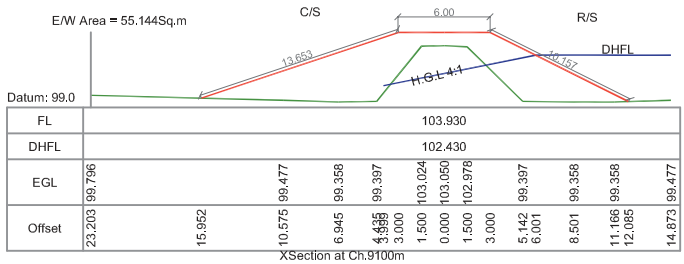
FL	104.292												
DHFL	102.792												
EGL	100.647		100.415	100.278	100.381	103.408	103.540	103.480		100.029	99.869	100.069		100.151
Offset	17.893	14.341	11.790	8.423	5.322	4.000	3.000	1.750	0.000	1.750	3.000	8.230	9.866	11.384	13.864

XSection at Ch.7250m



FL	103.998												
DHFL	102.498												
EGL	100.613		100.541	100.430	100.450	103.287	103.300	103.264		99.615	99.595	99.729		99.839
Offset	18.203	13.288	10.175	7.720	4.720	4.000	3.000	1.750	0.000	1.750	3.000	8.650	10.286	11.488	15.444

XSection at Ch.8750m



FL	103.930												
DHFL	102.430												
EGL	99.796			99.477	99.358	99.397	103.024	103.050	102.978		99.397	99.358	99.358	99.477
Offset	23.203	15.952		10.575	6.945	4.435	3.000	1.500	0.000	1.500	3.000	5.142	8.501	11.166	14.873

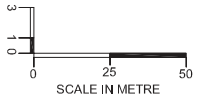
XSection at Ch.9100m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (LHS SLOPE), 2:1 SLOPE IN RIVER SIDE (RHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

NOTE:

1. SECTIONAL AREA INDICATED IS AREA BETWEEN EXISTING GROUND AND FINISHED GROUND PROFILES ONLY AND NOT INCLUSIVE OF AREA FOR GRABBING
2. GRABBING TO BE CONSIDERED FOR ENTIRE WIDTH BETWEEN TOES OF FINISHED PROFILE ON EXISTING GROUND FOR A DEPTH OF 0.15M
3. RIVER SIDE SLOPE OF EMBANKMENT = 2H:1V, COUNTRY SIDE SLOPE OF EMBANKMENT = 3H:1V
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



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CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

J.E./A.E. A.E.E. E.E.

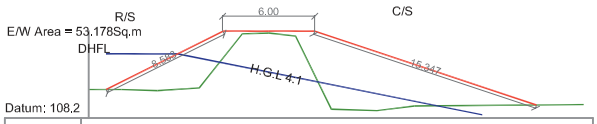
GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

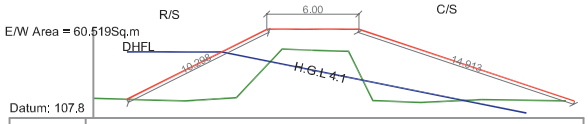
Cross-sections of Embankment
Embankment: E-12, DEHING BUND 1ST SECTION FROM AGHUNIBARI TO SESSUGHAT

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



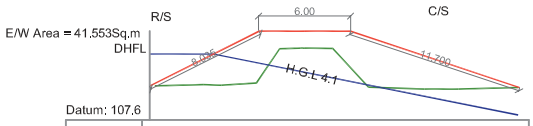
FL	113.910														
DHFL	112.410														
EGL	110.072	110.072	110.004	110.173	113.724	113.780	113.571	108.785	108.685	108.985					109.085
Offset	11.828	10.677	9.669	7.313	6.000	4.565	3.000	1.750	0.000	1.750	3.000	4.100	7.100	9.555	14.000	17.559

XSection at Ch.0m



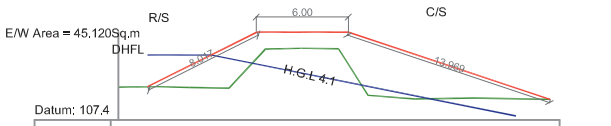
FL	113.635														
DHFL	112.135														
EGL	109.097	108.969	108.934	109.134	112.318	[illegible]	[illegible]	112.186	108.952	108.820			109.018		108.919
Offset	14.426	12.211	10.249	8.340	6.000	5.040	3.000	2.022	[illegible]	[illegible]	2.316	3.000	3.922	7.071	11.023	14.000	17.148

XSection at Ch.1000m



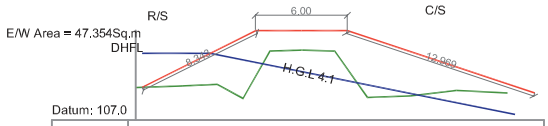
FL	113.415														
DHFL	111.915														
EGL	109.822	109.902	109.875	110.009	112.257	[illegible]	[illegible]	112.284	109.742	109.608	109.608				109.715
Offset	[illegible]	[illegible]	6.667	5.488	[illegible]	1.660	[illegible]	1.835	3.000	4.182	7.859	10.075	[illegible]	[illegible]	[illegible]

XSection at Ch.1800m



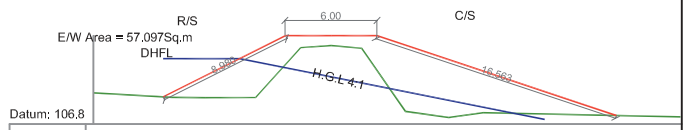
FL	113.153														
DHFL	111.653														
EGL	109.545	109.575	109.515	109.485	112.034	[illegible]	[illegible]	112.064	109.006	108.766			108.826		108.736
Offset	12.097	10.171	9.568	7.416	6.000	4.828	3.000	[illegible]	[illegible]	3.000	4.301	7.383	11.105	14.000	16.252

XSection at Ch.2750m



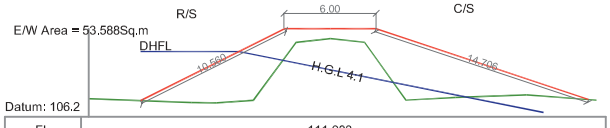
FL	112.864														
DHFL	111.364														
EGL	109.118	109.227	109.337	108.408	111.521	[illegible]	[illegible]	111.521	108.463	108.572	108.927				108.763
Offset	[illegible]	[illegible]	7.829	[illegible]	3.838	3.000	2.081	[illegible]	2.176	3.000	4.331	7.178	10.158	13.510	15.304

XSection at Ch.3800m



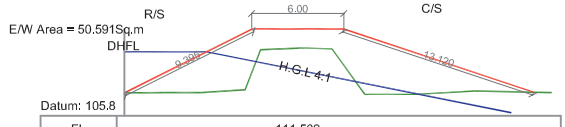
FL	112.589														
DHFL	111.089														
EGL	108.843		108.539	108.515	108.535	111.811	111.950	111.764	107.622	107.221	107.541				[illegible]
Offset	15.613	[illegible]	[illegible]	8.270	6.000	4.970	3.000	2.000	0.000	2.000	3.000	4.876	7.715	9.971	14.000	18.713

XSection at Ch.4800m



FL	111.983														
DHFL	110.483														
EGL	107.394			107.130	107.118	107.278	111.080	111.330	111.097	107.293	107.469		107.644		107.293
Offset	15.856	12.445		9.086	7.450	6.000	5.050	3.000	0.000	2.250	3.000	4.963	8.235	12.870	14.000	16.951

XSection at Ch.7000m



FL	111.502														
DHFL	110.002														
EGL	107.301	107.331	107.331	107.514	[illegible]	[illegible]	[illegible]	110.192	107.210	107.210			107.423		107.331
Offset	[illegible]	8.760	[illegible]	[illegible]	[illegible]	[illegible]	3.000	2.227	4.383	7.720			11.589	14.000	15.447

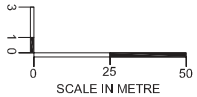
XSection at Ch.8750m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE, 2:1 SLOPE IN RIVER SIDE
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

NOTE:

1. SECTIONAL AREA INDICATED IS AREA BETWEEN EXISTING GROUND AND FINISHED GROUND PROFILES ONLY AND NOT INCLUSIVE OF AREA FOR GRABBING
2. GRABBING TO BE CONSIDERED FOR ENTIRE WIDTH BETWEEN TOES OF FINISHED PROFILE ON EXISTING GROUND FOR A DEPTH OF 0.15M
3. RIVER SIDE SLOPE OF EMBANKMENT = 2H:1V, COUNTRY SIDE SLOPE OF EMBANKMENT = 3H:1V
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

J.E./A.E.

A.E.E.

E.E.

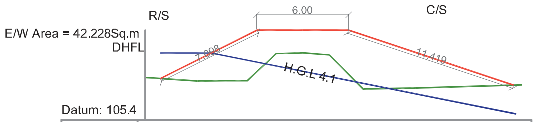
GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

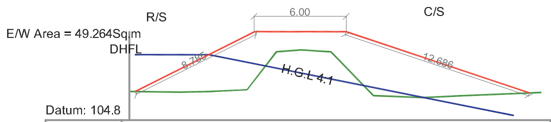
Cross-sections of Embankment
Embankment: E-14, EXTENSION OF TENGAKHAT BUND UPTO JOKAI R.F.

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



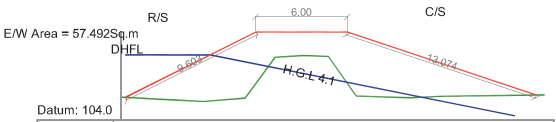
FL	111.295
DHFL	109.795
EGL	108.189 107.954 107.980 107.980 109.754 109.810 109.669 107.430 107.471 107.503 107.700
Offset	10.339 9.349 6.923 6.000 5.178 3.635 3.000 1.750 0.000 1.731 3.000 3.950 6.119 7.386 12.833 14.000

XSection at Ch.9500m



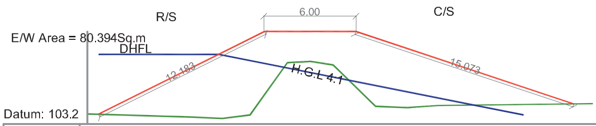
FL	110.607
DHFL	109.107
EGL	106.683 106.641 106.684 106.804 109.293 109.410 109.294 106.413 106.293 106.393 106.628
Offset	11.230 10.857 7.850 6.000 5.999 3.500 3.000 1.577 0.000 2.000 3.000 4.800 8.100 10.256 14.000 15.035

XSection at Ch.12000m



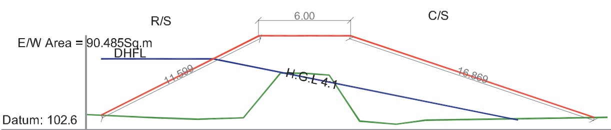
FL	109.781
DHFL	108.281
EGL	105.500 105.319 105.225 105.445 108.119 108.230 108.184 105.579 105.459 105.559 105.654
Offset	11.956 11.589 8.319 6.410 6.000 3.710 3.000 1.750 0.000 1.750 3.000 3.570 7.170 9.079 14.000 15.403

XSection at Ch.15000m



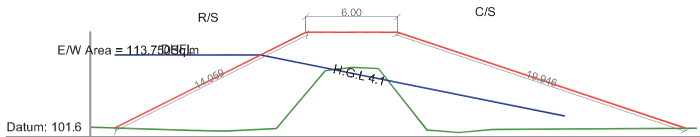
FL	109.300
DHFL	107.800
EGL	103.875 103.674 103.580 103.800 107.247 107.330 107.097 104.370 104.290 104.423 104.549
Offset	14.631 13.897 8.205 6.001 5.750 3.950 3.000 1.500 0.000 1.500 3.000 4.300 6.400 8.309 13.999 17.300

XSection at Ch.16750m



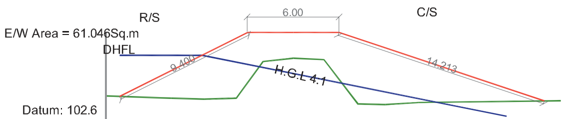
FL	108.749
DHFL	107.249
EGL	103.605 103.389 103.295 103.395 106.323 106.300 106.181 103.174 102.974 103.241 103.428
Offset	14.356 13.375 9.475 7.020 6.001 4.020 3.000 1.591 0.000 1.600 3.000 3.600 6.000 7.909 13.999 19.004

XSection at Ch.18750m



FL	108.474
DHFL	106.974
EGL	102.236 102.027 101.991 102.151 105.938 106.160 106.090 102.049 101.889 102.089 102.171
Offset	17.175 15.575 10.432 8.250 6.001 4.950 3.000 1.750 0.000 1.750 3.000 4.950 7.050 9.232 13.999 21.923

XSection at Ch.19750m



FL	108.350
DHFL	106.850
EGL	104.178 104.027 103.968 104.028 106.438 106.660 106.567 103.660 103.620 103.753 103.868
Offset	12.314 11.408 8.032 6.000 5.899 3.750 3.000 2.000 0.000 2.000 3.000 4.240 6.040 8.222 14.000 16.484

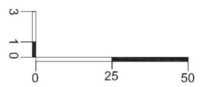
XSection at Ch.20200m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE, 2:1 SLOPE IN RIVER SIDE
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

NOTE:

1. SECTIONAL AREA INDICATED IS AREA BETWEEN EXISTING GROUND AND FINISHED GROUND PROFILES ONLY AND NOT INCLUSIVE OF AREA FOR GRABBING
2. GRABBING TO BE CONSIDERED FOR ENTIRE WIDTH BETWEEN TOES OF FINISHED PROFILE ON EXISTING GROUND FOR A DEPTH OF 0.15M
3. RIVER SIDE SLOPE OF EMBANKMENT = 2H:1V, COUNTRY SIDE SLOPE OF EMBANKMENT = 3H:1V
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



SCALE IN METRE

CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

J.E./A.E.

A.E.E.

E.E.

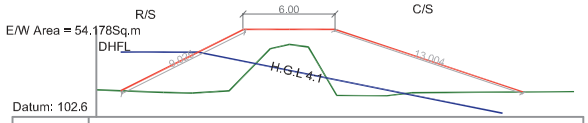
GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

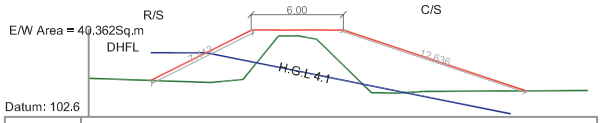
Cross-sections of Embankment
Embankment: E-14, EXTENSION OF TENGAKHAT BUND UPTO JOKAI R.F.

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



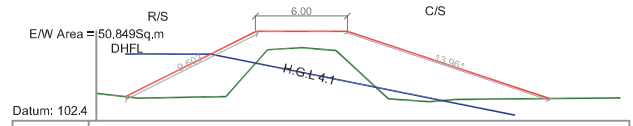
FL	108.350													
DHFL	106.850													
EGL	104.369		104.217	104.170	104.310	107.072	107.350	107.187	104.011	103.991	104.191			104.259
Offset	12.666	11.072	8.259	6.000	3.950	3.000	1.250	0.000	1.250	3.000	6.410	8.046	14.000	15.337

XSection at Ch.0m



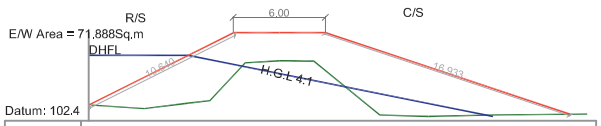
FL	108.308													
DHFL	106.808													
EGL	105.138		104.920	104.861	105.061	107.903	107.931	107.698	104.192	104.172	104.272			104.336
Offset	13.698	9.630	7.579	6.000	3.570	3.000	1.250	0.000	1.250	3.000	4.850	6.650	8.286	14.000	14.988

XSection at Ch.250m



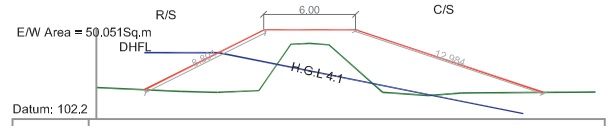
FL	108.265													
DHFL	106.765													
EGL	104.183		103.868	103.938	103.973	107.051	107.190	107.004	103.830	103.650	103.783			103.900
Offset	13.483	11.589	10.669	7.551	6.000	4.975	3.000	2.250	0.000	2.250	3.000	5.690	8.390	10.026	14.000	16.245

XSection at Ch.500m



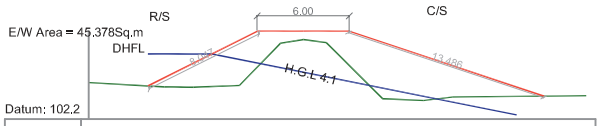
FL	108.180													
DHFL	106.680													
EGL	103.422		103.194	103.619	103.714	106.192	106.331	106.308	102.772	102.675	102.772			102.837
Offset	12.547	12.385	8.871	6.000	4.558	3.000	2.250	0.000	2.250	3.000	6.585	9.765	13.000	14.000	19.064

XSection at Ch.1000m



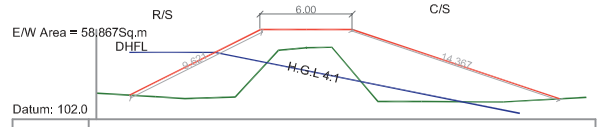
FL	108.053													
DHFL	106.553													
EGL	104.264		104.006	103.948	104.068	107.106	107.162	107.069	103.956	103.736	103.903			103.976
Offset	14.018	10.872	8.505	6.000	3.350	1.250	0.000	1.250	3.000	4.770	7.770	9.952	14.000	15.318

XSection at Ch.1750m



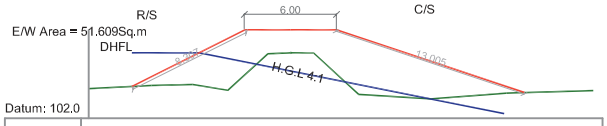
FL	107.968													
DHFL	106.468													
EGL	104.588		104.308	104.284	104.404	107.169	107.419	107.210	103.534	103.414	103.648			103.729
Offset	14.082	10.197	9.109	7.200	6.000	4.200	3.000	1.500	0.000	1.500	3.000	5.200	7.900	9.809	14.000	15.794

XSection at Ch.2250m



FL	107.884													
DHFL	106.384													
EGL	103.715		103.475	103.358	103.458	106.519	106.885	106.722	103.168	103.168		103.134		103.438
Offset	13.782	11.605	9.879	7.970	6.000	4.670	3.000	1.827	0.000	1.682	3.000	4.699	7.554	12.930	14.000	16.630

XSection at Ch.2750m



FL	107.799													
DHFL	106.299													
EGL	103.942		104.149	104.218	103.839	106.235	106.394	106.280	103.558		103.265		103.652	103.820
Offset	13.251	10.430	9.138	6.000	4.123	3.000	1.500	0.000	1.500	3.000	4.460	9.209	14.000	15.338

XSection at Ch.3250m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (RHS SLOPE), 2:1 SLOPE IN RIVER SIDE (LHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

NOTE:

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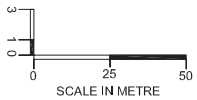
3. RIVER SIDE SLOPE OF EMBANKMENT = 2H:1V, COUNTRY SIDE SLOPE OF EMBANKMENT = 3H:1V
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



SCALE IN METRE

CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

J.E./A.E.

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E.E.

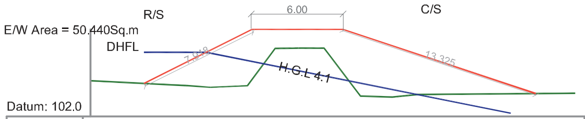
GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

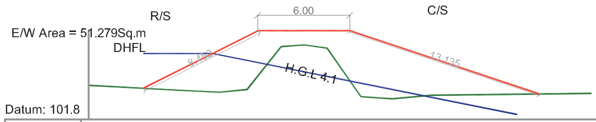
Cross-sections of Embankment
Embankment: E-15, EXTENSION OF TENGAKHAT BUND FROM JOKAI R.F. TO A.T. ROAD

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



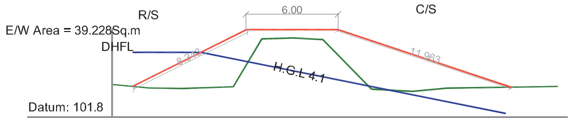
FL	107.714
DHFL	106.214
EGL	104.349 104.034 103.917 104.017 106.458 106.490 106.492 106.492 103.334 103.274 103.441 103.520
Offset	13.583 10.082 7.316 6.000 5.668 3.000 2.668 1.467 0.000 0.000 1.737 3.000 4.130 6.230 7.866 14.000 15.641

XSection at Ch.3750m



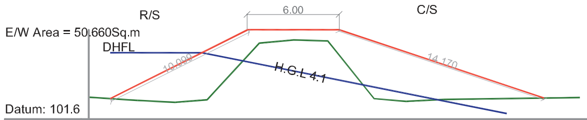
FL	107.629
DHFL	106.129
EGL	104.043 103.695 103.589 103.769 106.584 106.695 106.486 103.295 103.155 103.388 103.517
Offset	14.137 10.560 7.722 6.000 5.740 3.740 3.000 1.500 0.000 1.500 3.000 3.740 5.840 8.295 14.000 15.461

XSection at Ch.4250m



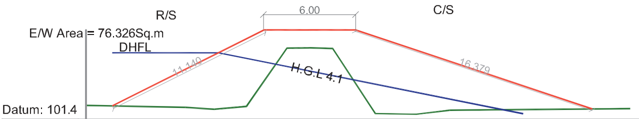
FL	107.544
DHFL	106.044
EGL	103.937 103.709 103.674 103.794 106.931 106.987 106.894 103.632 103.492 103.692 103.811
Offset	11.812 10.462 9.342 7.160 6.000 3.860 3.000 2.000 0.000 2.000 3.000 5.200 7.900 10.082 14.000 14.349

XSection at Ch.4750m



FL	107.459
DHFL	105.959
EGL	103.036 102.821 102.704 102.864 106.577 106.799 106.729 102.939 102.759 102.892 103.009
Offset	13.428 12.033 10.225 7.770 6.000 5.870 3.000 2.250 0.000 2.250 3.000 5.290 7.390 9.845 14.000 16.443

XSection at Ch.5250m



FL	107.290
DHFL	105.790
EGL	102.343 102.210 102.092 102.272 106.093 106.121 106.075 101.799 101.759 102.026 102.133
Offset	14.689 12.964 8.169 6.000 5.880 4.160 3.000 1.500 0.000 1.500 3.000 4.300 7.000 9.182 14.000 18.538

XSection at Ch.6250m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (RHS SLOPE), 2:1 SLOPE IN RIVER SIDE (LHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

NOTE:

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3. RIVER SIDE SLOPE OF EMBANKMENT = 2H:1V, COUNTRY SIDE SLOPE OF EMBANKMENT = 3H:1V
4. FREEBOARD ABOVE D.H.F.L. = 1.5M

0 25 50
SCALE IN METRE

GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

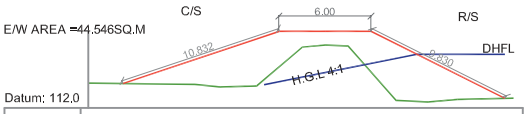
Cross-sections of Embankment
Embankment: E-15, EXTENSION OF TENGAKHAT BUND FROM JOKAI R.F. TO A.T. ROAD

CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

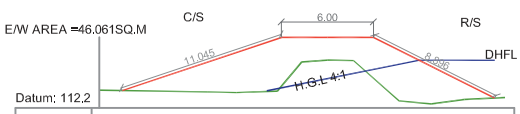
J.E./A.E. A.E.E. E.E.

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



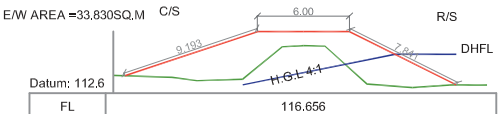
FL	117.020													
DHFL	115.520													
EGL	113.624		113.535	113.379	113.439	115.985	116.117	116.057	112.491	112.391	112.558	112.636		
Offset	15.534	13.276	8.536	6.900	4.500	3.000	1.500	0.000	1.500	3.000	4.650	6.000	6.750	8.659	11.792

XSection at Ch.0m



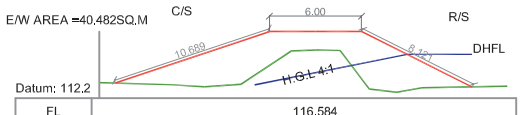
FL	116.826													
DHFL	115.326													
EGL	113.356		113.247	113.202	113.302	115.211	115.329	115.305	112.658	112.458	112.758	112.879		
Offset	14.981	13.478	7.909	6.000	4.000	1.700	0.000	1.700	3.000	4.700	6.000	6.800	8.982	10.957

XSection at Ch.800m



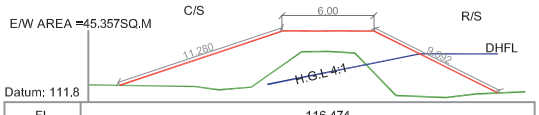
FL	116.656													
DHFL	115.156													
EGL	113.773		113.650	113.428	113.528	115.655	115.721	115.697	113.203	112.983	113.150	113.149		
Offset	12.483	11.721	8.636	7.000	4.000	3.000	1.400	0.000	1.400	3.000	4.150	6.000	7.150	8.605	10.013	12.034

XSection at Ch.1500m



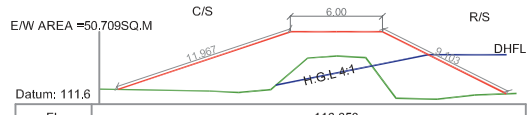
FL	116.584													
DHFL	115.084													
EGL	113.236		113.093	112.959	113.119	115.309	115.375	115.339	112.812	112.592	112.892	112.993		
Offset	14.201	13.140	9.482	7.300	4.900	4.000	3.000	1.600	0.000	1.600	3.000	5.320	6.000	6.956	10.264

XSection at Ch.1800m



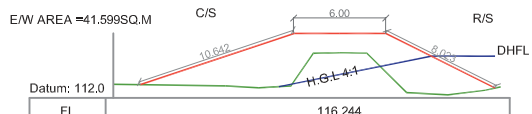
FL	116.474													
DHFL	114.974													
EGL	112.938		112.831	112.609	112.789	115.112	115.125	115.029	112.228	112.108	112.342	112.489		
Offset	15.740	13.701	8.786	7.150	5.050	4.000	3.000	1.750	0.000	1.750	3.000	4.450	6.000	7.750	9.659	11.132

XSection at Ch.2250m



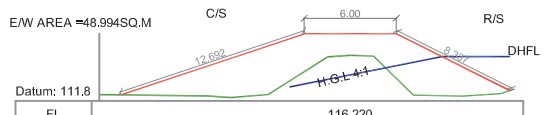
FL	116.353													
DHFL	114.853													
EGL	112.590		112.464	112.375	112.555	114.626	114.758	114.662	111.992	111.932	112.199	112.309		
Offset	15.572	14.353	8.329	6.420	4.000	3.000	1.900	0.000	1.900	3.000	3.900	6.000	6.800	9.055	11.142

XSection at Ch.2750m



FL	116.244													
DHFL	114.744													
EGL	112.907		112.790	112.679	112.799	114.946	114.972	114.948	112.353	112.213	112.513	112.738		
Offset	14.864	13.096	7.502	5.320	4.000	3.000	1.750	0.000	1.750	3.000	4.390	6.000	7.090	9.545	10.176

XSection at Ch.3200m



FL	116.220													
DHFL	114.720													
EGL	112.223		112.141	112.030	112.230	114.695	114.800	114.752	112.186	112.126	112.293	112.593		
Offset	16.482	15.041	9.436	7.800	5.400	4.000	3.000	1.500	0.000	1.500	3.000	4.140	6.000	7.440	9.085	10.457

XSection at Ch.3300m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (LHS SLOPE), 2:1 SLOPE IN RIVER SIDE(RHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

NOTE:

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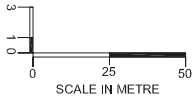
3. RIVER SIDE SLOPE OF EMBANKMENT = 2H:1V, COUNTRY SIDE SLOPE OF EMBANKMENT = 3H:1V
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

J.E./A.E.

A.E.E.

E.E.

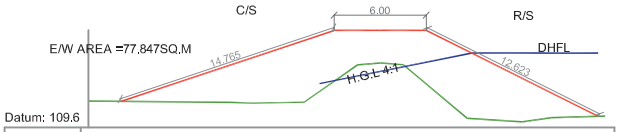
GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

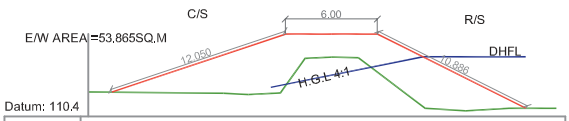
Crosssections of Embankment
Embankment: E16, EXTENSION OF SASSONI TINGKHONG BUND PHI

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



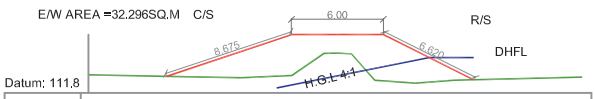
FL	115.977													
DHFL	114.477													
EGL	111.328		111.242	111.197	111.257	113.706	113.824	113.716	110.194	109.974	110.241	110.346		
Offset	19.166	17.007	9.936	8.300	5.000	4.000	3.000	1.500	0.000	1.500	3.000	5.700	9.300	11.209	14.290

XSection at Ch.4300m



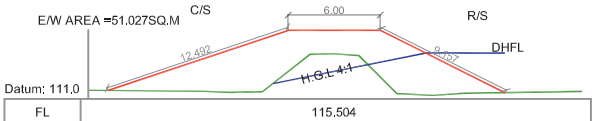
FL	115.808													
DHFL	114.308													
EGL	112.012		111.927	111.839	111.939	114.206	114.298	114.250	110.940	110.775	110.940	110.940		
Offset	15.966	14.432	7.096	5.460	4.000	1.750	0.000	1.750	3.000	6.000	8.795	11.641	12.737	

XSection at Ch.5000m



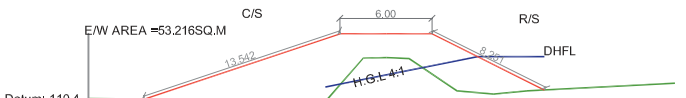
FL	115.626													
DHFL	114.126													
EGL	112.983		112.835	112.790	112.950	114.391	114.417	114.357	112.634	112.434	112.634			112.835
Offset	16.360	11.230	8.755	6.300	4.001	3.000	0.900	0.000	0.900	2.430	3.000	5.130	5.999	7.585	8.921

XSection at Ch.5750m



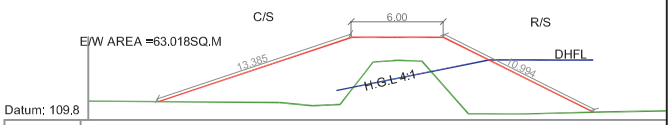
FL	115.504													
DHFL	114.004													
EGL	111.564		111.501	111.435	111.475	113.934	113.960	113.840	111.351	111.231	111.365			111.488
Offset	16.148	14.851	8.729	6.820	4.720	4.000	3.000	1.600	0.000	1.600	3.000	4.100	6.000	8.409	11.190

XSection at Ch.6250m



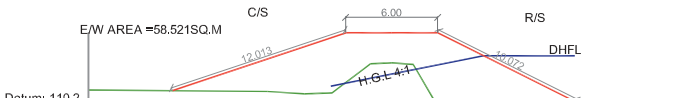
FL	115.323											
DHFL	113.823											
EGL	111.072		110.973	110.773	110.953	113.728	113.767	113.695	111.572	111.372	111.572	112.088
Offset	19.545	15.847	7.639	5.730	4.000	3.000	1.500	0.000	1.500	3.000	4.650	6.000	7.050	9.232	10.380

XSection at Ch.7000m



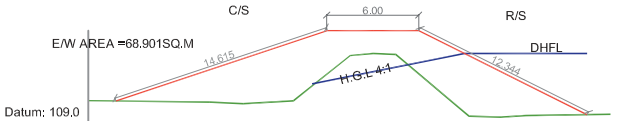
FL	115.226													
DHFL	113.726													
EGL	111.029		110.930	110.730	110.810	113.594	113.712	113.652	110.192		110.192		110.314	
Offset	20.285	15.698	7.742	5.560	4.000	3.000	1.600	0.000	1.600	3.000	4.663	6.001	8.492	12.484	12.984

XSection at Ch.7400m



FL	115.141											
DHFL	113.641											
EGL	111.386		111.293	111.137	111.197	113.109	113.175	113.067	110.512	110.492	110.592	110.700
Offset	19.914	14.397	8.175	5.720	4.000	3.000	1.400	0.000	1.400	3.000	5.600	7.782	12.009

XSection at Ch.7750m



FL	115.007												
DHFL	113.507												
EGL	110.406		110.316	110.205	110.405	113.366	113.498	113.438	109.387	109.327	109.427		109.509
Offset	16.681	16.865	10.702	8.520	5.220	4.001	3.000	1.500	0.000	1.500	3.000	5.988	8.400	10.036	14.041

XSection at Ch.8300m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (LHS SLOPE), 2:1 SLOPE IN RIVER SIDE(RHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

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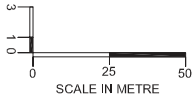
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

J.E./A.E.

A.E.E.

E.E.

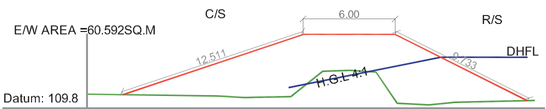
GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

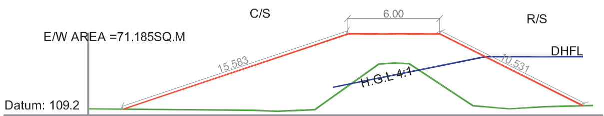
Crosssections of Embankment
Embankment: E16, EXTENSION OF SASSONI TINGKHONG BUND PHI

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



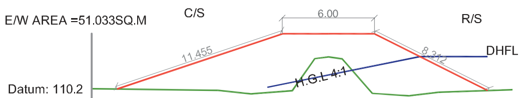
FL	114.656
DHFL	113.156
EGL	110.731 110.620 110.509 110.569 112.236 112.302 112.182 110.128 110.028 110.195 110.314
Offset	17.221 14.869 8.739 6.830 4.000 3.830 3.000 1.750 0.000 1.750 3.000 3.150 5.250 6.000 6.886 11.705

XSection at Ch.9750m



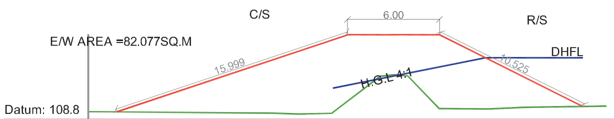
FL	114.534
DHFL	113.034
EGL	109.625 109.536 109.469 109.569 112.552 112.618 112.570 109.825 109.625 109.759 109.841
Offset	20.082 17.783 9.236 7.600 5.200 4.000 3.000 1.000 0.000 1.000 3.000 5.200 6.000 7.600 9.782 12.419

XSection at Ch.10250m



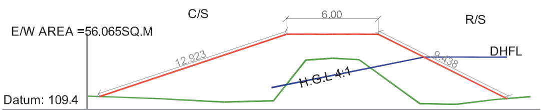
FL	114.474
DHFL	112.974
EGL	110.873 110.768 110.545 110.745 112.845 112.950 112.830 110.570 110.410 110.643 110.814
Offset	15.517 13.867 7.252 5.070 4.000 3.000 2.370 0.900 0.000 0.900 2.880 3.000 5.280 6.000 7.189 10.435

XSection at Ch.10500m



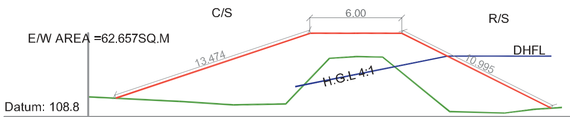
FL	114.377
DHFL	112.877
EGL	109.333 109.236 109.169 109.229 111.653 111.758 111.686 109.529 109.509 109.609 109.693
Offset	20.049 18.178 8.081 6.172 4.073 4.000 3.000 0.900 0.000 0.900 2.880 3.000 6.000 6.290 8.472 12.414

XSection at Ch.10900m



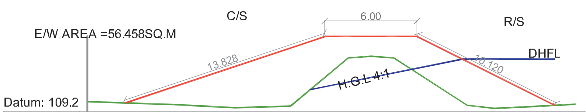
FL	114.353
DHFL	112.853
EGL	110.295 110.144 109.901 109.992 112.652 112.784 112.688 109.805 109.765 110.065 110.254
Offset	16.068 15.260 11.800 7.061 4.000 3.853 3.000 1.750 0.000 1.750 3.000 5.740 6.000 8.140 10.595 11.442

XSection at Ch.11000m



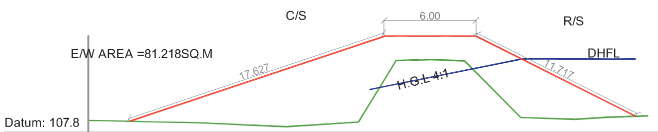
FL	114.280
DHFL	112.780
EGL	110.109 109.812 109.581 109.647 112.632 112.750 112.714 109.143 109.043 109.277 109.414
Offset	17.592 15.783 11.630 8.040 4.610 4.000 3.000 1.750 0.000 1.750 3.000 6.000 6.157 9.757 11.666 12.834

XSection at Ch.11300m



FL	114.183
DHFL	112.683
EGL	109.894 109.705 109.500 109.602 112.768 112.873 112.765 109.656 109.456 109.556 109.737
Offset	18.611 16.118 12.970 8.915 5.293 4.000 3.000 1.500 0.000 1.500 3.000 6.000 6.315 8.115 10.297 12.052

XSection at Ch.11700m



FL	114.110
DHFL	112.610
EGL	108.593 108.446 108.177 108.485 112.513 112.579 112.495 108.782 108.662 108.796 108.899
Offset	22.445 19.722 15.394 9.421 4.718 4.001 3.000 2.250 0.000 2.250 3.000 5.950 5.999 9.550 11.459 13.480

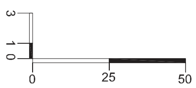
XSection at Ch.12000m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (LHS SLOPE), 2:1 SLOPE IN RIVER SIDE(RHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

NOTE:

1. SECTIONAL AREA INDICATED IS AREA BETWEEN EXISTING GROUND AND FINISHED GROUND PROFILES ONLY AND NOT INCLUSIVE OF AREA FOR GRABBING
2. GRABBING TO BE CONSIDERED FOR ENTIRE WIDTH BETWEEN TOES OF FINISHED PROFILE ON EXISTING GROUND FOR A DEPTH OF 0.15M
3. RIVER SIDE SLOPE OF EMBANKMENT = 2H:1V, COUNTRY SIDE SLOPE OF EMBANKMENT = 3H:1V
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



SCALE IN METRE

GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

Crosssections of Embankment
Embankment: E16, EXTENSION OF SASSONI TINGKHONG BUND PHI

CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

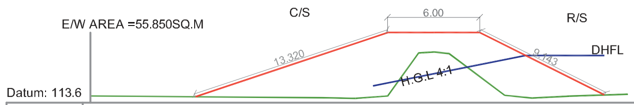
CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

J.E./A.E.

A.E.E.

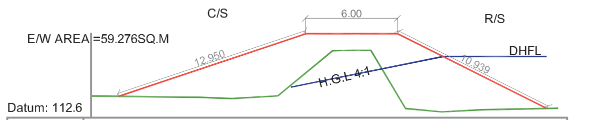
E.E.

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



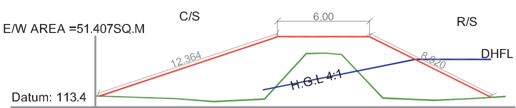
FL	118.200
DHFL	116.700
EGL	114.039 113.926 113.881 114.041 116.867 116.920 116.824 114.083 113.903 114.037 114.162
Offset	22.524 15.637 7.312 5.130 4.000 3.000/3.000 1.000 0.000 1.000 3.000 4.640 6.000/6.440 8.895 11.178

XSection at Ch.0m



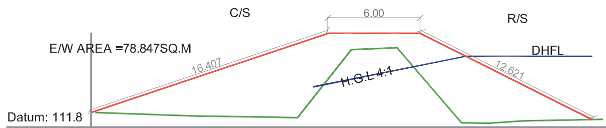
FL	118.093
DHFL	116.593
EGL	114.021 113.934 113.846 114.026 116.979 117.005 116.993 113.196 112.976 113.110 113.216
Offset	17.114 15.285 10.032 7.850 4.850 4.000 3.000 1.250 0.000 1.250 3.000/3.530 5.820/6.000 8.385 12.784

XSection at Ch.500m



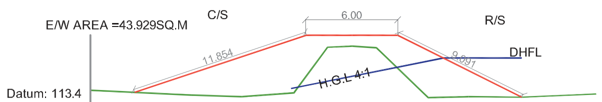
FL	118.039
DHFL	116.539
EGL	114.138 113.970 113.774 113.942 116.926 116.952 116.868 113.998 113.858 113.970 114.110
Offset	14.992/14.729 9.821 7.182 4.000/3.000 1.150 0.000 1.150 3.000 3.894 6.000 7.268 9.717 10.978

XSection at Ch.750m



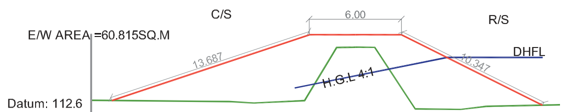
FL	117.943
DHFL	116.443
EGL	112.755 112.523 112.490 112.424 116.870 116.928/116.929 116.990 112.093 112.073 112.207 112.313
Offset	18.565/18.508 11.512 8.190 5.028 3.999 3.000 1.500 0.000/0.038 1.500 3.000 5.730/6.000 7.530 9.712 14.289

XSection at Ch.1200m



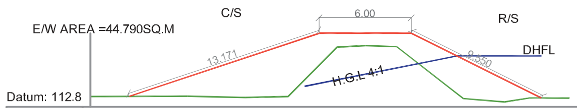
FL	117.878
DHFL	116.378
EGL	114.268 113.952 113.847 114.092 117.085 117.151 117.055 113.777 113.847 113.812 114.022
Offset	17.152 14.246 10.513 7.210 3.898/3.000 1.600 0.000 1.600 3.000 4.991 6.001 7.654 11.132/11.193

XSection at Ch.1500m



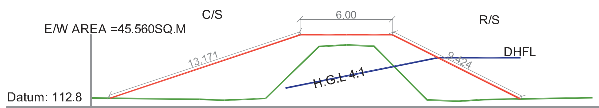
FL	117.771
DHFL	116.271
EGL	113.455 113.374 113.286 113.446 116.932 116.945 116.933 112.902 112.862 113.062 113.169
Offset	17.343 15.985 8.286 6.650 4.000 3.250/3.000 1.250 0.000 1.250 3.000 3.910 6.000 6.910 8.546 12.255

XSection at Ch.2000m



FL	117.664
DHFL	116.164
EGL	113.487 113.517 113.419 113.484 116.743 116.841/116.842 116.776 113.350 113.130 113.397 113.385
Offset	18.052 15.495 11.678 7.863 5.065 4.000 3.000 1.854 0.000/0.022 2.056 3.000 6.000/6.430 9.130 10.766 11.542

XSection at Ch.2500m



FL	117.556
DHFL	116.056
EGL	113.406 113.320 113.254 113.374 116.786 116.891 116.807 113.276 113.196 113.296 113.432
Offset	16.779 15.495 9.636 8.000 5.300 4.000 3.000 1.800 0.000 1.800 3.000 5.300 6.000 7.400 9.036 11.429

XSection at Ch.3000m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (LHS SLOPE), 2:1 SLOPE IN RIVER SIDE (RHS SLOPE)
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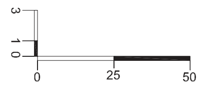
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



SCALE IN METRE

GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

Crosssections of Embankment
Embankment: E17, EXTENSION OF SASSONI TINGKHONG BUND PHII

CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

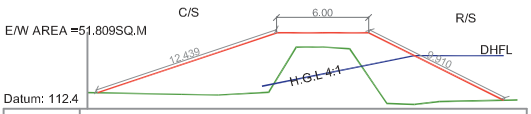
CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

J.E./A.E.

A.E.E.

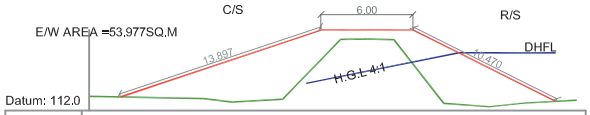
E.E.

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



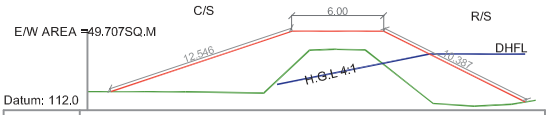
FL	117.395													
DHFL	115.895													
EGL	113.474	113.474	113.354	113.310	113.490	116.447	116.460	116.340	112.749	112.689	112.889	112.979		
Offset	15.453	14.600	9.305	6.850	4.000	1.750	0.000	1.750	3.000	4.200	6.000	7.636	11.864	12.769

XSection at Ch.3750m



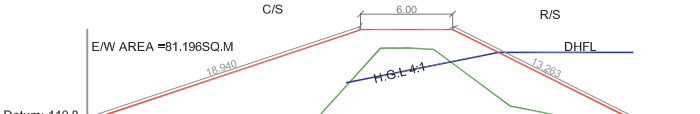
FL	117.288													
DHFL	115.788													
EGL	112.935	112.935	112.785	112.563	112.743	116.665	116.691	116.655	112.471	112.251	112.484	112.684		
Offset	18.235	16.184	10.759	8.850	5.550	4.000	3.000	1.750	0.000	1.750	3.000	5.030	6.000	8.030	10.212	12.365

XSection at Ch.4250m



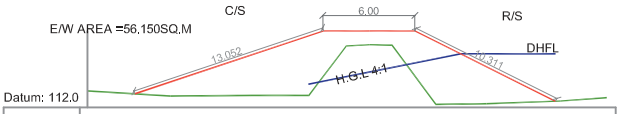
FL	117.181													
DHFL	115.681													
EGL	113.214	113.214	113.214	113.207	113.123	115.930	115.961	115.961	112.440	112.260	112.393	112.646		
Offset	16.438	14.902	12.720	10.000	4.868	4.000	3.000	1.864	0.000	1.794	3.000	6.250	8.950	11.405	12.291

XSection at Ch.4750m



FL	117.074													
DHFL	115.574													
EGL	111.085	111.085	111.121	111.157	111.157	115.843	115.869	115.773	112.056	111.049	111.157	111.121		
Offset	20.968	19.702	15.166	10.314	5.989	3.999	3.000	1.750	0.000	1.750	3.000	6.001	6.775	11.838	14.863	15.319

XSection at Ch.5250m



FL	117.020													
DHFL	115.520													
EGL	113.083	113.083	112.749	112.798	112.798	116.038	116.117	116.081	112.205	112.241	112.422	112.644		
Offset	18.490	15.382	13.024	7.753	4.000	3.000	1.500	0.000	1.500	3.000	4.373	6.000	7.699	12.363	12.363

XSection at Ch.5500m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (LHS SLOPE), 2:1 SLOPE IN RIVER SIDE (RHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

NOTE:

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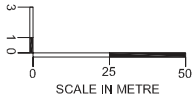
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

J.E./A.E.

A.E.E.

E.E.

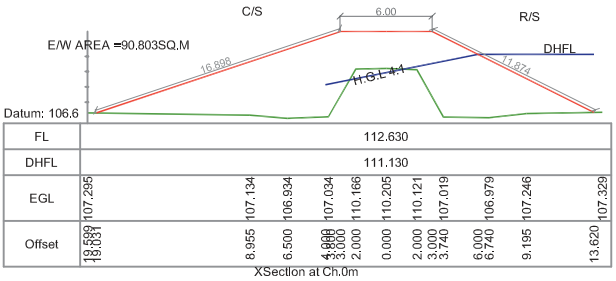
GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

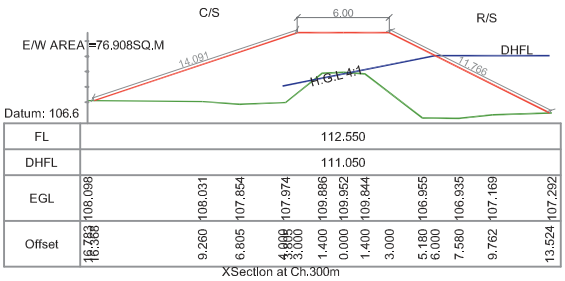
Crosssections of Embankment
Embankment: E17, EXTENSION OF SASSONI TINGKHONG BUND PHII

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



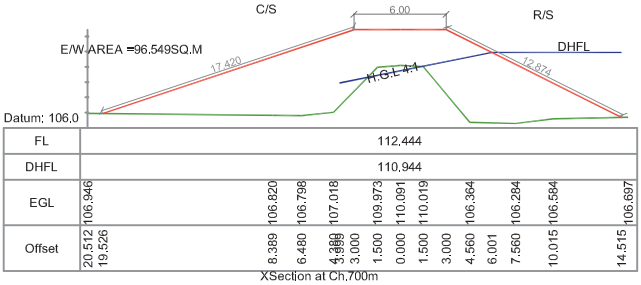
FL	112.630												
DHFL	111.130												
EGL	107.295	107.134	106.934	107.034	107.034	110.166	110.205	110.121	107.019	106.979	107.246		107.329
Offset	19.598 19.031	8.955	6.500	4.000	3.000	2.000	0.000	2.000	3.000	3.740	6.000	6.740	9.195	13.620

XSection at Ch.0m



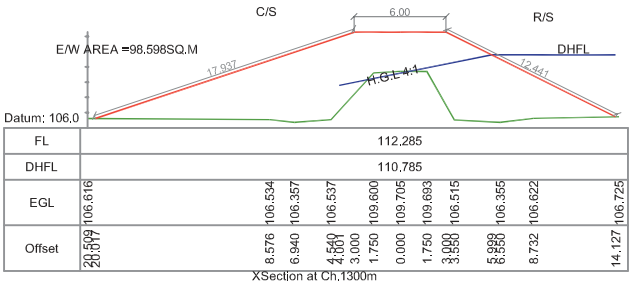
FL	112.550												
DHFL	111.050												
EGL	108.098	108.031	107.854	107.974	107.974	109.886	109.952	109.844		106.955	106.935	107.169	107.292
Offset	16.783 16.368	9.260	6.805	4.000	3.000	1.400	0.000	1.400	3.000	5.180	6.000	7.580	9.762	13.524

XSection at Ch.300m



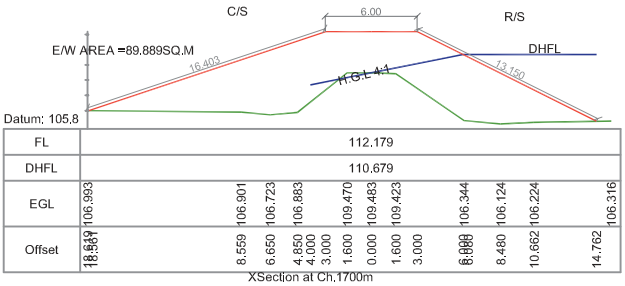
FL	112.444												
DHFL	110.944												
EGL	106.946	106.820	106.798	107.018	107.018	109.973	110.091	110.019	106.364	106.284	106.584		106.697
Offset	20.512 19.526	8.389	6.480	4.000	3.000	1.500	0.000	1.500	3.000	4.560	6.001	7.560	10.015	14.515

XSection at Ch.700m



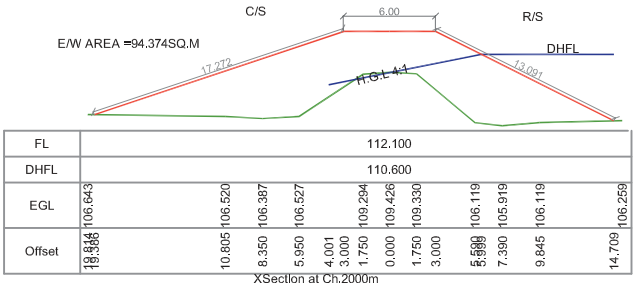
FL	112.285												
DHFL	110.785												
EGL	106.616	106.534	106.357	106.537	106.537	109.600	109.705	109.693	106.515	106.355	106.622		106.725
Offset	20.509 20.017	8.576	6.940	4.000	3.000	1.750	0.000	1.750	3.000	5.930	6.550	8.732	14.127

XSection at Ch.1300m



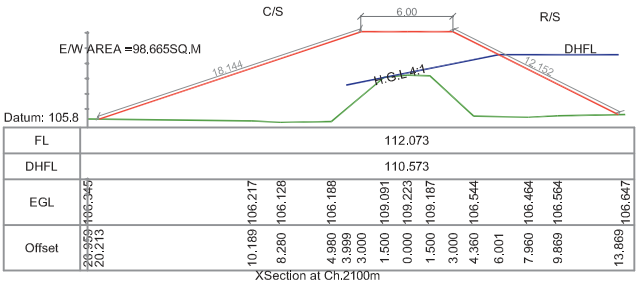
FL	112.179												
DHFL	110.679												
EGL	106.993	106.901	106.723	106.883	109.470	109.483	109.423		106.344	106.124	106.224		106.316
Offset	18.641 18.581	8.559	6.650	4.850	4.000	3.000	1.600	0.000	1.600	3.000	6.000	8.480	10.662	14.762

XSection at Ch.1700m



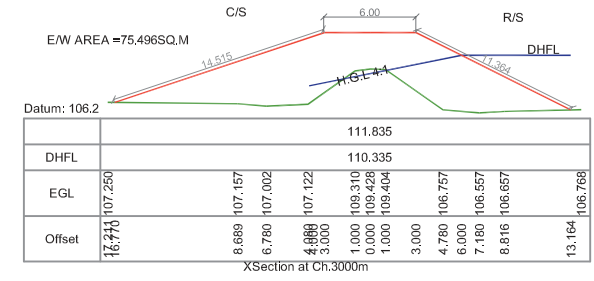
FL	112.100												
DHFL	110.600												
EGL	106.643	106.520	106.387	106.527		109.294	109.426	109.330		106.119	105.919	106.119	106.259
Offset	19.814 19.388	10.805	8.350	5.950	4.001	3.000	1.750	0.000	1.750	3.000	5.500	7.390	9.845	14.709

XSection at Ch.2000m



FL	112.073												
DHFL	110.573												
EGL	106.345	106.217	106.128	106.188	109.091	109.223	109.187	106.544	106.464	106.564			106.647
Offset	20.950 20.213	10.189	8.280	4.980	3.999	3.000	1.500	0.000	1.500	3.000	4.360	6.001	7.960	9.869	13.869

XSection at Ch.2100m



	111.835												
DHFL	110.335												
EGL	107.250	107.157	107.002	107.122	109.310	109.428	109.404		106.757	106.557	106.657		106.768
Offset	17.711 16.710	8.689	6.780	4.000	3.000	1.000	0.000	1.000	3.000	4.780	6.000	7.180	8.816	13.164

XSection at Ch.3000m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (LHS SLOPE), 2:1 SLOPE IN RIVER SIDE (RHS SLOPE)
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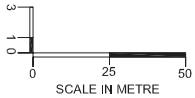


CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

J.E./A.E.

A.E.E.

E.E.

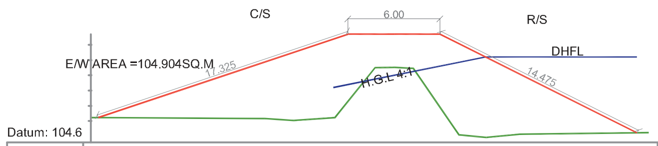
GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

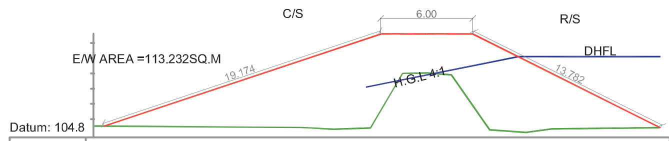
Crosssections of Embankment
Embankment: E19, DEHING BUND 1ST SECTION FROM AGHUNIBARI TO SESSUGHAT

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



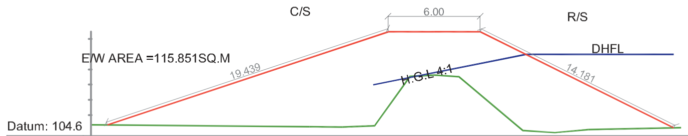
FL	111.702
DHFL	110.202
EGL	106.226, 106.156, 106.045, 106.225, 109.502, 109.515, 109.455, 105.092, 104.932, 105.132, 105.238
Offset	19.920, 19.436, 8.499, 6.590, 4.001, 3.890, 3.000, 1.250, 0.000, 1.250, 3.000, 4.260, 5.988, 6.080, 8.242, 15.947

XSection at Ch.3500m



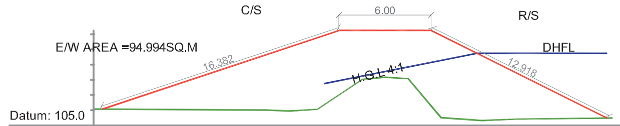
FL	111.596
DHFL	110.096
EGL	105.537, 105.451, 105.340, 105.420, 108.996, 109.022, 108.902, 105.297, 105.117, 105.351, 105.433
Offset	21.885, 21.190, 8.282, 6.100, 3.988, 3.700, 3.000, 1.600, 0.000, 1.600, 3.000, 4.120, 6.001, 6.520, 8.156, 15.256, 15.327

XSection at Ch.3900m



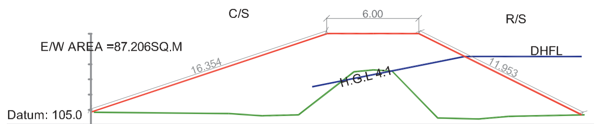
FL	111.490
DHFL	109.990
EGL	105.352, 105.227, 105.205, 105.285, 108.541, 108.633, 108.525, 104.978, 104.838, 105.038, 105.158
Offset	22.517, 21.441, 8.192, 6.010, 4.000, 3.910, 3.000, 1.600, 0.000, 1.600, 3.000, 5.800, 6.000, 7.900, 10.082, 15.684

XSection at Ch.4300m



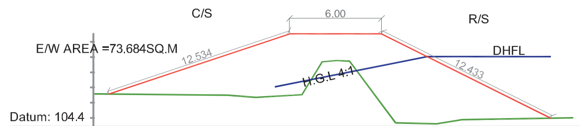
FL	111.252
DHFL	109.752
EGL	106.075, 106.010, 105.944, 106.064, 108.037, 108.169, 108.073, 105.510, 105.310, 105.410, 105.479
Offset	19.132, 18.541, 7.876, 6.240, 4.440, 4.000, 3.000, 1.500, 0.000, 1.500, 3.000, 3.660, 6.000, 6.380, 8.542, 14.554

XSection at Ch.5200m



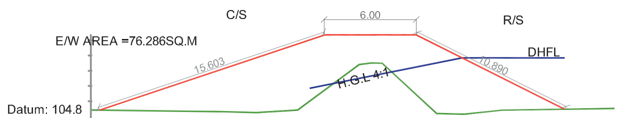
FL	111.013
DHFL	109.513
EGL	105.842, 105.757, 105.602, 105.662, 108.496, 108.628, 108.556, 105.450, 105.390, 105.557, 105.672
Offset	18.515, 18.329, 9.472, 7.290, 4.890, 3.999, 3.000, 1.250, 0.000, 1.250, 3.000, 4.250, 6.001, 6.950, 8.859, 13.691

XSection at Ch.6100m



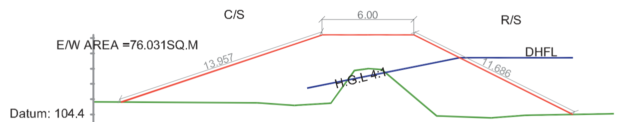
FL	110.536
DHFL	109.036
EGL	106.582, 106.499, 106.344, 106.524, 108.691, 108.770, 108.734, 104.668, 104.608, 104.875, 105.002
Offset	15.920, 14.891, 7.129, 5.220, 3.999, 3.000, 2.220, 0.900, 0.000, 0.900, 3.000, 3.940, 6.001, 6.640, 8.276, 14.121

XSection at Ch.7900m



FL	110.350
DHFL	108.850
EGL	105.423, 105.315, 105.248, 105.428, 108.404, 108.509, 108.497, 105.187, 105.147, 105.414, 105.533
Offset	18.368, 17.802, 9.935, 7.480, 4.780, 4.000, 3.000, 0.750, 0.000, 0.750, 3.000, 4.350, 6.000, 6.150, 8.605, 12.740

XSection at Ch.8600m



FL	110.218
DHFL	108.718
EGL	105.816, 105.751, 105.596, 105.736, 107.878, 108.010, 107.938, 104.892, 104.772, 104.939, 105.037
Offset	18.050, 16.241, 7.295, 4.840, 4.000, 3.000, 2.440, 0.900, 0.000, 0.900, 3.000, 4.500, 6.000, 8.100, 10.282, 13.452

XSection at Ch.9100m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (LHS SLOPE), 2:1 SLOPE IN RIVER SIDE (RHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

NOTE:

1. SECTIONAL AREA INDICATED IS AREA BETWEEN EXISTING GROUND AND FINISHED GROUND PROFILES ONLY AND NOT INCLUSIVE OF AREA FOR GRABBING
2. GRABBING TO BE CONSIDERED FOR ENTIRE WIDTH BETWEEN TOES OF FINISHED PROFILE ON EXISTING GROUND FOR A DEPTH OF 0.15M
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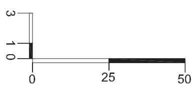
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



SCALE IN METRE

GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

Crosssections of Embankment
Embankment: E19, DEHING BUND 1ST SECTION FROM AGHUNIBARI TO SESSUGHAT

CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

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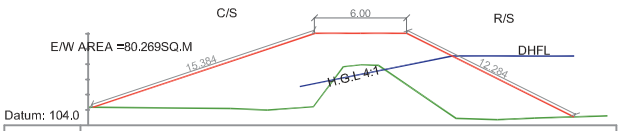
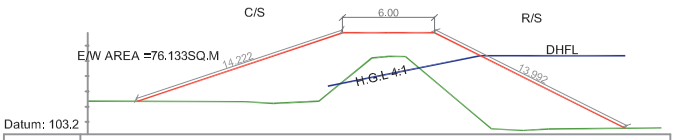
EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



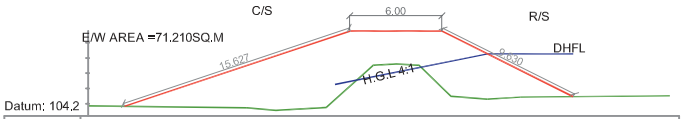
FL	110.032													
DHFL	108.532													
EGL	105.169	105.099	104.988	105.208	107.826	107.958	107.922	104.443	104.363	104.463	104.603			
Offset	17.888 17.888	8.565	6.110	3.999 3.000	1.150	0.000	1.150	3.000	6.000 6.250	8.950	11.405	13.987		

XSection at Ch.9800m



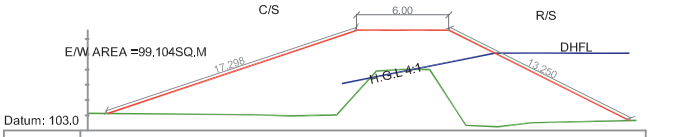
FL	109.847													
DHFL	108.347													
EGL	105.358	105.332	105.221	105.361	108.198	108.303	108.291	103.544	103.444	103.544	103.611			
Offset	19.741	16.492	9.489	7.580	4.580 4.001	3.000	1.100	0.000	1.100	3.000	5.999 6.740	8.840	10.476	15.515

XSection at Ch.10500m



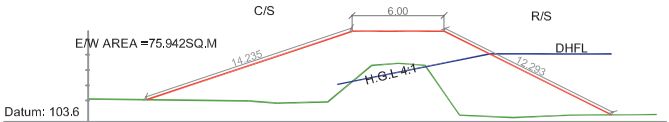
FL	109.767													
DHFL	108.267													
EGL	104.856	104.721	104.565	104.745	107.524	107.603	107.519	105.478	105.298	105.432	105.514			
Offset	20.198	17.825	9.789	7.880	4.580 4.000	3.000	1.500	0.000	1.500	3.000 3.600	6.000	8.182	11.613	17.970

XSection at Ch.10800m



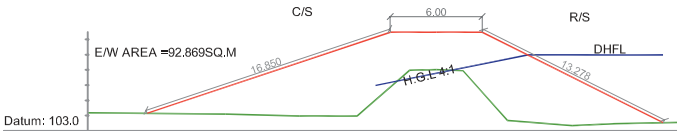
FL	109.582													
DHFL	108.082													
EGL	104.123	104.032	103.965	104.025	106.896	107.014	107.002	103.340	103.240	103.507	103.667			
Offset	20.680 19.410	9.815	7.360	4.360 3.999	3.000	1.750	0.000	1.750	3.000	4.130	6.000 6.250	8.412	14.851	

XSection at Ch.11500m



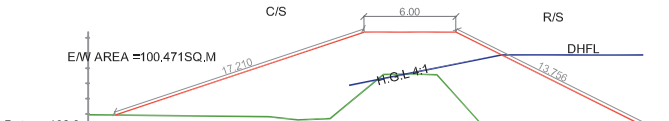
FL	109.555													
DHFL	108.055													
EGL	105.097	104.978	104.823	104.903	107.305	107.437	107.317	104.039	103.883	104.039	104.078			
Offset	20.344	16.505	9.839	7.930	4.630 3.999	3.000	1.750	0.000	1.750	3.000	4.024	6.001	7.524	11.251	13.995

XSection at Ch.11600m



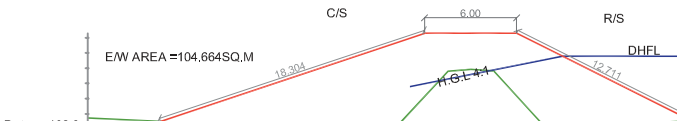
FL	109.476													
DHFL	107.976													
EGL	104.190	104.092	103.968	103.968	106.975	107.014	106.942	103.680	103.351	103.474	103.582			
Offset	22.870	18.985	13.853	9.005	5.198	4.000	3.000	1.750	0.000	1.750	3.000	4.660	6.000	8.908	11.713	14.876

XSection at Ch.11900m



FL	109.370													
DHFL	107.870													
EGL	103.949	103.811	103.611	103.691	106.591	106.617	106.569	103.068	102.888	103.022	103.245			
Offset	21.121	19.327	9.269	7.360	5.260	4.000	3.000	1.750	0.000	1.750	3.000	4.900	6.000	7.000	9.455	15.304

XSection at Ch.12300m



FL	109.290													
DHFL	107.790													
EGL	103.726	103.247	102.942	103.160	106.793	106.925	106.817	103.377	103.247	103.508	103.907			
Offset	25.132	20.365	14.937	9.372	4.869 3.999	3.000	1.500	0.000	1.500	3.000	4.647	6.001	8.088	13.464 14.369

XSection at Ch.12600m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (LHS SLOPE), 2:1 SLOPE IN RIVER SIDE (RHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

NOTE:

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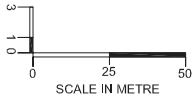
2. GRABBING TO BE CONSIDERED FOR ENTIRE WIDTH BETWEEN TOES OF FINISHED PROFILE ON EXISTING GROUND FOR A DEPTH OF 0.15M
3. RIVER SIDE SLOPE OF EMBANKMENT = 2H:1V, COUNTRY SIDE SLOPE OF EMBANKMENT = 3H:1V
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

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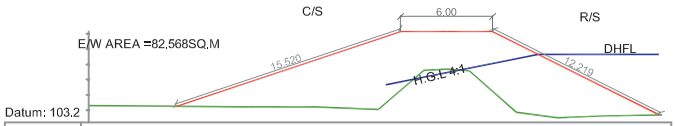
GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

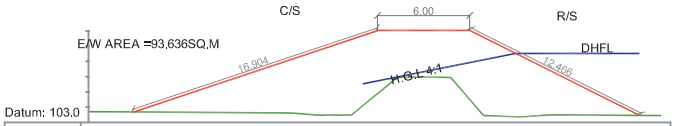
Crosssections of Embankment
Embankment: E19, DEHING BUND 1ST SECTION FROM AGHUNIBARI TO SESSUGHAT

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



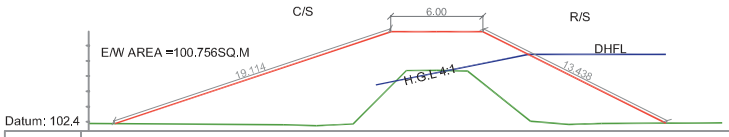
FL	109.157												
DHFL	107.657												
EGL	104.301		104.207	104.207	104.049	106.606	106.685	106.577	103.852	103.497	103.615		103.697
Offset	23.489	17.724	13.016	8.711	4.482 4.001	3.000	1.500	0.000	1.500	3.000	4.586	5.999	7.291	10.148	13.929

XSection at Ch.13100m



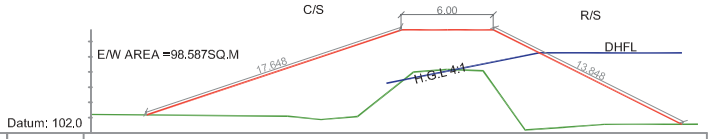
FL	109.025												
DHFL	107.525												
EGL	103.700		103.608	103.475	103.495	105.940	105.979	105.943	103.450	103.350	103.484		103.442
Offset	22.019	19.036	8.749	6.840	4.740 4.000	3.000	1.750	0.000	1.750	3.000	3.910	6.000	8.219	14.150

XSection at Ch.13600m



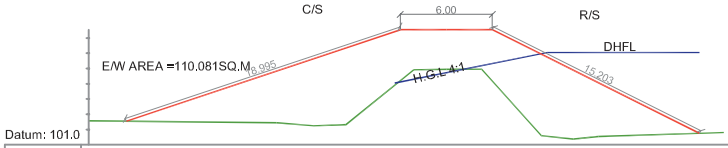
FL	108.919												
DHFL	107.419												
EGL	102.886		102.803	102.737	102.857	106.361	106.374	106.326	103.033	102.819	102.891		102.926
Offset	22.849	21.133	10.082	7.900	5.500	4.000 3.000	2.000	0.000	2.000	3.000	6.000 6.194	8.668	10.796	15.020

XSection at Ch.14000m



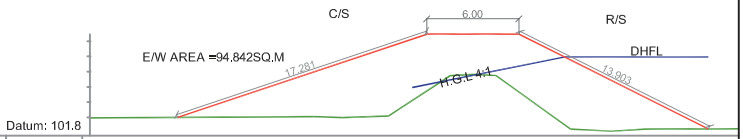
FL	108.760												
DHFL	107.260												
EGL	103.210		103.100	102.878	103.078	105.993	106.158	106.075	102.202	102.367	102.564		102.568
Offset	23.387	19.742	10.482	8.300	5.900	4.000 3.000	2.230	0.000	2.331 3.000	5.092 6.000	7.573	10.285	15.386

XSection at Ch.14600m



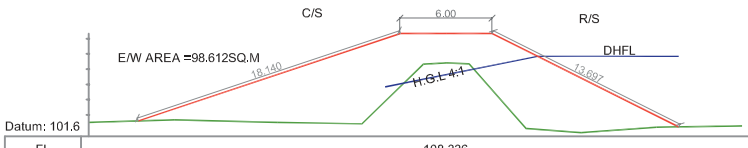
FL	108.548												
DHFL	107.048												
EGL	102.566		102.442	102.242	102.322	105.913	105.948	105.956	101.594	101.374	101.541		101.799
Offset	23.478	21.020	11.155	8.700	6.600	3.402 3.000	2.158	0.000	2.296 3.000	6.230 6.398	8.330	9.966	16.598

XSection at Ch.15400m



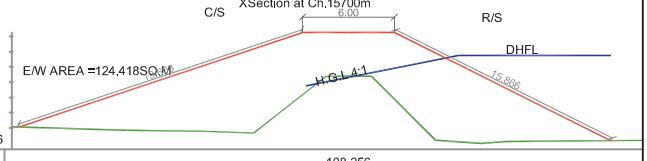
FL	108.468												
DHFL	106.968												
EGL	102.971		103.054	102.988	103.088	105.746	105.825	105.753	102.236	102.096	102.230		
Offset	25.150	19.394	10.459	8.550	5.550	4.001 3.000	1.500	0.000	1.500	3.000	5.998 6.400	9.100	11.282	15.435

XSection at Ch.15700m



FL	108.336												
DHFL	106.836												
EGL	102.497		102.674	102.497	102.409	106.329	106.408	106.348	102.099	101.834	102.188		102.276
Offset	23.456	20.209	17.856	11.093	5.536	3.999 3.000	1.500	0.000	1.500	3.000	5.234 6.001	8.852	13.806	15.251

XSection at Ch.16200m



FL	108.256												
DHFL	106.756												
EGL	102.073		101.832	101.789	101.662	105.375	105.401	105.389	101.192	100.972	101.106		
Offset	22.096 21.597		14.514	9.880	6.240	3.000 2.800	1.500	0.000	1.500	3.000	5.700	7.191	8.700	10.336	17.191

XSection at Ch.16500m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (LHS SLOPE), 2:1 SLOPE IN RIVER SIDE (RHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

NOTE:

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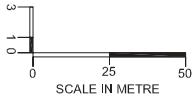
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

J.E./A.E.

A.E.E.

E.E.

GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

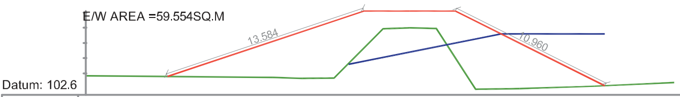
OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

Crosssections of Embankment
Embankment: E19, DEHING BUND 1ST SECTION FROM AGHUNIBARI TO SESSUGHAT

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH

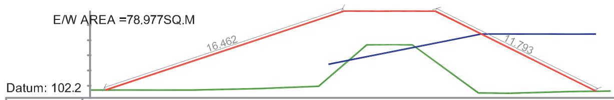
E/W AREA =59.554SQ.M



FL	108.097
DHFL	106.597
EGL	103.848 103.741 103.675 103.695 106.934 107.000 106.952 102.962 103.003 103.164 103.407
Offset	21.252 15.887 8.959 7.050 4.950 4.000 3.000 1.750 0.000 1.750 3.000 4.333 6.000 7.230 12.122 12.803

XSection at Ch.17100m

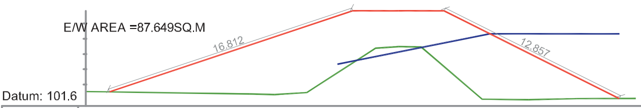
E/W AREA =78.977SQ.M



FL	107.912
DHFL	106.412
EGL	102.705 102.715 102.823 102.968 105.688 105.701 105.689 102.528 102.497 102.606 102.654
Offset	19.627 18.617 12.845 8.321 4.639 4.000 3.000 1.500 0.000 1.500 3.000 5.840 6.000 7.915 11.597 13.548

XSection at Ch.17800m

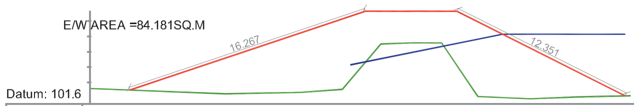
E/W AREA =87.649SQ.M



FL	107.832
DHFL	106.332
EGL	102.539 102.378 102.334 102.474 105.379 105.484 105.460 102.037 101.999 102.075 102.085
Offset	20.511 18.949 9.736 8.100 6.000 4.000 3.000 1.500 0.000 1.500 3.000 5.511 6.000 8.563 11.725 14.500

XSection at Ch.18100m

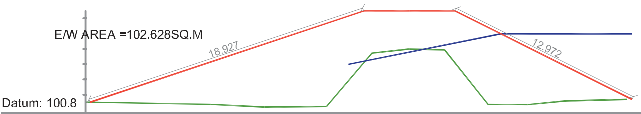
E/W AREA =84.181SQ.M



FL	107.647
DHFL	106.147
EGL	102.603 102.263 102.349 102.549 105.506 105.580 105.580 105.580 102.077 101.928 102.040 102.133
Offset	21.065 18.432 12.170 7.200 4.500 3.999 3.000 1.987 0.030 0.000 1.999 3.000 4.391 6.001 7.870 10.733 14.047

XSection at Ch.18800m

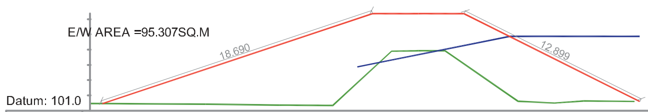
E/W AREA =102.628SQ.M



FL	107.487
DHFL	105.987
EGL	101.507 101.361 101.178 101.215 104.723 104.979 104.977 104.942 101.361 101.341 101.575 101.686
Offset	21.252 20.956 13.064 9.505 5.447 3.999 3.000 2.457 0.107 0.000 2.313 3.000 5.161 6.001 7.750 10.205 14.288 14.603

XSection at Ch.19400m

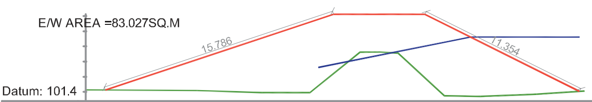
E/W AREA =95.307SQ.M



FL	107.368
DHFL	105.868
EGL	101.461 101.429 101.354 101.340 104.898 104.937 104.925 101.617 101.497 101.630 101.600
Offset	21.534 20.731 13.942 9.131 5.600 3.999 3.000 1.750 0.000 1.750 3.000 6.001 6.550 8.950 10.859 14.185 14.537

XSection at Ch.19850m

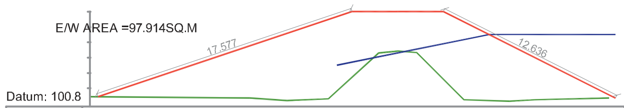
E/W AREA =83.027SQ.M



FL	107.116
DHFL	105.616
EGL	102.132 102.086 101.946 101.946 104.616 104.629 104.557 101.736 101.701 101.841 102.062
Offset	19.274 17.976 11.963 7.696 4.546 4.001 3.000 1.250 0.000 1.250 3.000 4.294 5.999 6.664 10.356 13.155

XSection at Ch.20800m

E/W AREA =97.914SQ.M



FL	107.010
DHFL	105.510
EGL	101.456 101.371 101.193 101.313 104.298 104.430 104.334 101.247 101.147 101.247 101.359
Offset	20.205 19.675 9.705 7.250 4.550 4.000 3.000 1.250 0.000 1.250 3.000 4.350 6.000 7.350 8.986 13.878 14.302

XSection at Ch.21200m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (LHS SLOPE), 2:1 SLOPE IN RIVER SIDE (RHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

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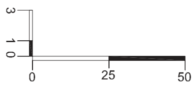

SCALE IN METRE

GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

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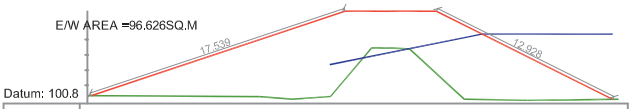
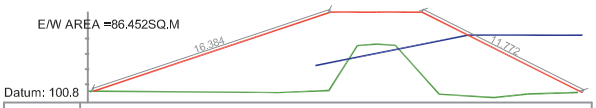
DIBRUGARH W R DIVISION
DIBRUGARH



Datum: 100.8

FL	106.865												
DHFL	105.365												
EGL	101.320	101.320	101.264	101.086	101.276	104.445	104.458	104.386	101.093	101.019	101.056	101.088	
Offset	19.899	19.899	8.602	6.420	4.001	3.000	1.250	0.000	1.250	3.000	4.835	5.999	8.974	12.293	14.563

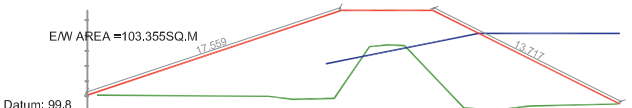
XSection at Ch.21750m



Datum: 100.8

FL	106.732												
DHFL	105.232												
EGL	101.554	101.554	101.481	101.459	101.599	104.548	104.640	104.568	101.355	101.135	101.369	101.467	
Offset	18.820	18.820	8.319	6.410	4.001	3.000	1.250	0.000	1.250	3.000	4.130	5.999	7.730	9.912	13.229

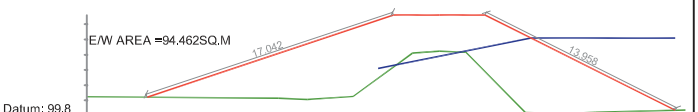
XSection at Ch.22250m



Datum: 99.8

FL	106.639												
DHFL	105.139												
EGL	101.086	101.086	101.009	100.809	100.869	104.262	104.380	104.344	100.246	100.106	100.373	100.505	
Offset	19.658	19.026	7.796	6.160	3.999	3.000	1.150	0.000	1.150	3.000	5.050	6.001	7.150	9.332	15.167

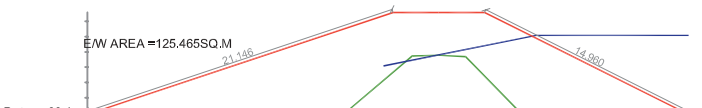
XSection at Ch.22600m



Datum: 99.8

FL	106.599														
DHFL	105.099														
EGL	101.239		101.148	101.059	101.259	104.112	104.230	104.158	100.195	100.135	100.235	100.373			
Offset	23.124	19.167	10.559	8.650	5.650	4.000	3.000	1.750	0.000	1.750	3.000	5.650	6.000	8.350	10.259	15.484

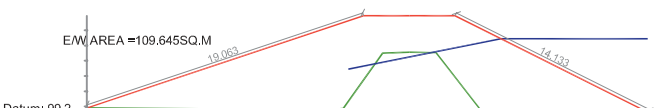
XSection at Ch.22750m



Datum: 99.4

FL	106.586											
DHFL	105.086											
EGL	99.899	99.899	99.791	99.635	99.755	103.732	103.785	103.689	99.708	99.668	99.802	99.896
Offset	23.882	23.882	11.612	9.430	6.430	3.619	3.000	1.750	0.000	1.750	3.000	5.650	6.381	8.050	9.686	15.927	16.381

XSection at Ch.22800m



Datum: 99.2

FL	105.950													
DHFL	104.450													
EGL	99.922		99.799	99.666	99.866	103.504	103.570	103.534	99.641	99.441	99.675	99.630		
Offset	21.381	21.381	8.622	6.440	4.366	3.000	1.750	0.000	1.750	3.000	4.790	6.001	8.390	10.572	15.377	15.841

XSection at Ch.25200m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (LHS SLOPE), 2:1 SLOPE IN RIVER SIDE (RHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
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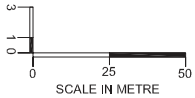

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Crosssections of Embankment
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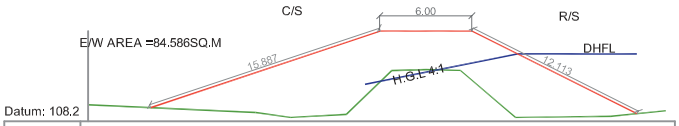
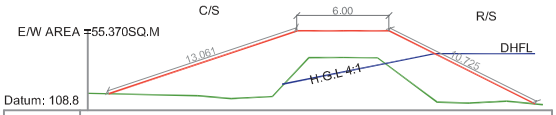
EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



Datum: 108.2

FL	114.110												
DHFL	112.610												
EGL	109.279		108.763	108.445	108.643	111.513	111.579	111.531	108.445	108.484	108.524		108.882
Offset	22.184	18.072	11.197	8.876	5.239	4.000	3.000	2.250	0.000	2.250	3.000	9.501	12.131	13.834

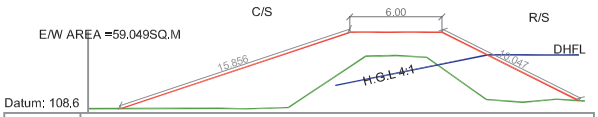
XSection at Ch.0m



Datum: 108.8

FL	114.007												
DHFL	112.507												
EGL	109.906		109.750	109.550	109.690	112.243	112.256	112.232		109.323	109.263	109.397	109.160
Offset	16.763	15.391	9.532	7.350	4.650	4.000	3.000	2.250	0.000	2.250	3.000	8.270	10.725	12.593

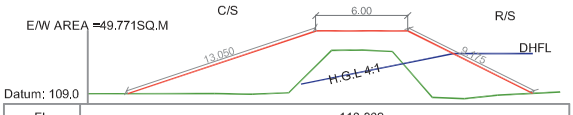
XSection at Ch.500m



Datum: 108.6

FL	113.904												
DHFL	112.404												
EGL	108.887		108.899	108.876	108.956	112.322	112.361	112.253		109.482	109.302	109.502	109.387
Offset	20.220	18.042	11.679	9.770	7.070	4.000	3.000	2.000	0.000	2.000	3.000	8.320	10.502	11.986

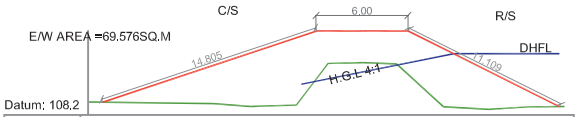
XSection at Ch.1000m



Datum: 109.0

FL	113.802												
DHFL	112.302												
EGL	109.672		109.682	109.638	109.738	112.515	112.541	112.445	109.428	109.348	109.582		109.791
Offset	17.999	15.380	9.655	7.200	4.800	4.000	3.000	2.000	0.000	2.000	3.000	4.610	6.000	6.710	8.892	11.206

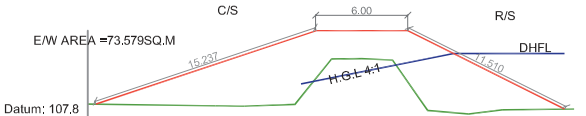
XSection at Ch.1500m



Datum: 108.2

FL	113.719												
DHFL	112.219												
EGL	109.048		108.955	108.755	108.855	111.584	111.637	111.553	108.743	108.563	108.730		108.754
Offset	18.000	17.045	9.785	7.330	4.800	4.000	3.000	2.250	0.000	2.250	3.000	5.330	6.000	8.330	10.785	12.936

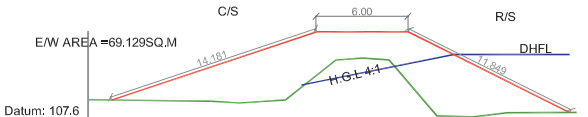
XSection at Ch.1900m



Datum: 107.8

FL	113.596												
DHFL	112.096												
EGL	108.785		108.666	108.644	108.764	111.734	111.760	111.664	108.354	108.134	108.401		108.456
Offset	18.000	17.455	9.609	7.700	4.800	4.000	3.000	2.000	0.000	2.000	3.000	4.310	6.001	7.010	9.192	13.295

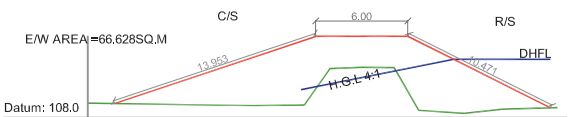
XSection at Ch.2500m



Datum: 107.6

FL	113.452												
DHFL	111.952												
EGL	108.987		108.886	108.775	108.975	111.588	111.720	111.600	107.930	107.870	108.137		108.155
Offset	18.000	16.453	9.947	8.038	5.038	4.000	3.000	1.750	0.000	1.750	3.000	4.900	6.000	7.300	9.482	13.598

XSection at Ch.3200m



Datum: 108.0

FL	113.329												
DHFL	111.829												
EGL	108.944		108.810	108.788	108.828	111.212	111.304	111.280	108.478	108.278	108.545		108.661
Offset	18.000	16.237	9.262	7.080	4.788	4.000	3.000	2.100	0.000	2.100	3.000	3.720	6.001	6.720	9.175	12.366

XSection at Ch.3800m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (LHS SLOPE), 2:1 SLOPE IN RIVER SIDE (RHS SLOPE)
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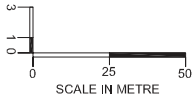

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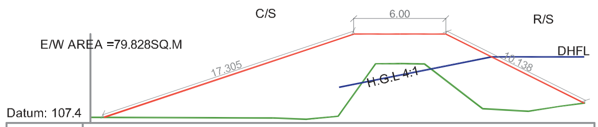
OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

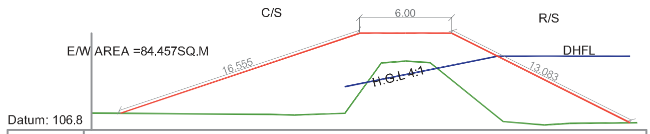
Crosssections of Embankment
Embankment: E22, TIEBUND OF GELA DESAM

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



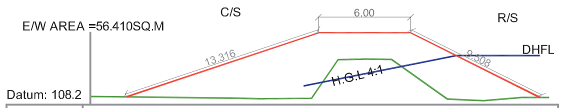
FL	113.236
DHFL	111.736
EGL	107.767, 107.726, 107.638, 107.838, 111.284, 111.297, 111.273, 108.332, 108.172, 108.472, 108.712
Offset	20.293, 19.417, 8.332, 6.150, 4.050, 4.000, 3.000, 1.600, 0.000, 1.600, 3.000, 5.422, 6.000, 8.422, 10.331, 12.068

XSection at Ch.4250m



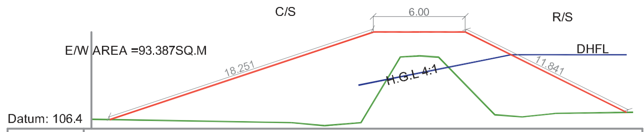
FL	113.123
DHFL	111.623
EGL	107.903, 107.813, 107.768, 107.888, 111.177, 111.295, 111.199, 107.344, 107.124, 107.224, 107.278
Offset	20.602, 18.705, 8.916, 7.280, 4.000, 3.980, 3.000, 1.600, 0.000, 1.600, 3.000, 6.000, 6.400, 9.100, 10.736, 14.702

XSection at Ch.4800m



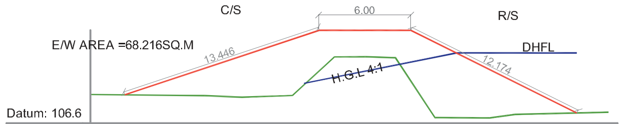
FL	112.928
DHFL	111.428
EGL	108.746, 108.631, 108.586, 108.626, 111.152, 111.205, 111.181, 108.572, 108.472, 108.672, 108.678
Offset	18.000, 15.633, 8.695, 6.786, 4.000, 3.486, 3.000, 1.750, 0.000, 1.750, 3.000, 5.425, 6.000, 7.825, 10.280, 11.504

XSection at Ch.5750m



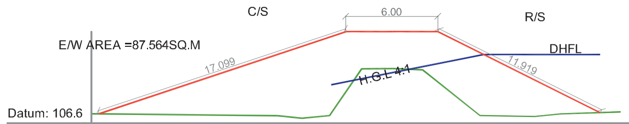
FL	112.774
DHFL	111.274
EGL	107.023, 106.804, 106.604, 106.804, 111.131, 111.210, 111.114, 107.321, 107.181, 107.415, 107.485
Offset	21.526, 20.315, 8.412, 6.230, 3.999, 3.830, 3.000, 1.250, 0.000, 1.250, 3.000, 4.950, 6.001, 6.750, 8.932, 13.591

XSection at Ch.6500m



FL	112.723
DHFL	111.223
EGL	108.493, 108.421, 108.310, 108.430, 110.967, 110.980, 110.920, 106.971, 106.951, 107.185, 107.327
Offset	18.000, 15.756, 10.505, 8.050, 4.750, 3.999, 3.000, 2.000, 0.000, 2.000, 3.000, 4.590, 6.001, 8.190, 9.826, 13.889

XSection at Ch.6750m



FL	112.630
DHFL	111.130
EGL	107.228, 107.099, 106.921, 107.101, 110.179, 110.205, 110.121, 107.103, 107.043, 107.210, 107.345
Offset	19.728, 19.222, 7.536, 5.900, 4.199, 3.999, 3.000, 2.000, 0.000, 2.000, 3.000, 5.770, 6.001, 9.370, 11.006, 13.661

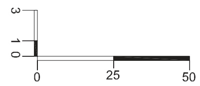
XSection at Ch.7200m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (LHS SLOPE), 2:1 SLOPE IN RIVER SIDE (RHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

NOTE:

1. SECTIONAL AREA INDICATED IS AREA BETWEEN EXISTING GROUND AND FINISHED GROUND PROFILES ONLY AND NOT INCLUSIVE OF AREA FOR GRABBING
2. GRABBING TO BE CONSIDERED FOR ENTIRE WIDTH BETWEEN TOES OF FINISHED PROFILE ON EXISTING GROUND FOR A DEPTH OF 0.15M
3. RIVER SIDE SLOPE OF EMBANKMENT = 2H:1V, COUNTRY SIDE SLOPE OF EMBANKMENT = 3H:1V
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



SCALE IN METRE

GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

Crosssections of Embankment
Embankment: E22, TIEBUND OF GELA DESAM

CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

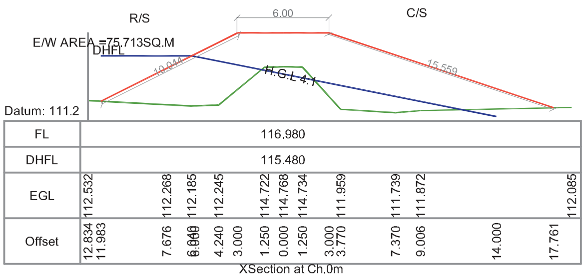
CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

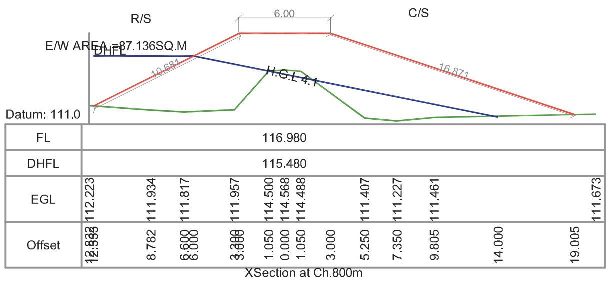
J.E./A.E.

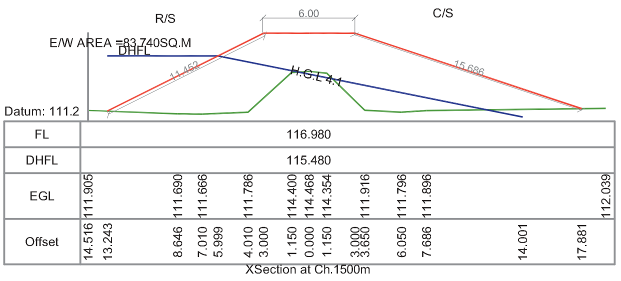
A.E.E.

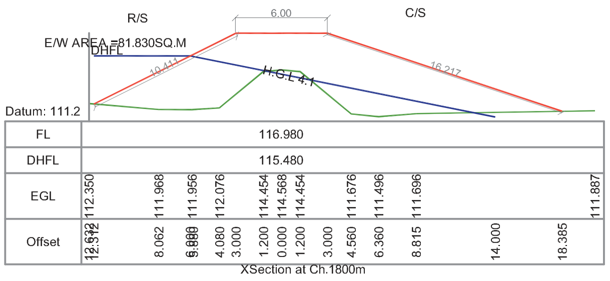
E.E.

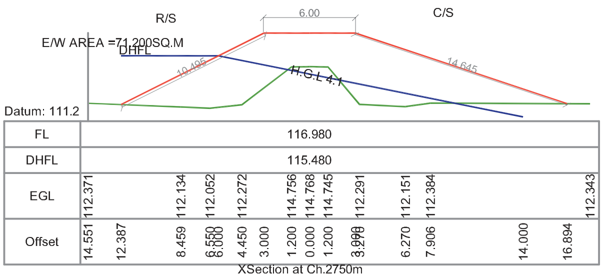
EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH

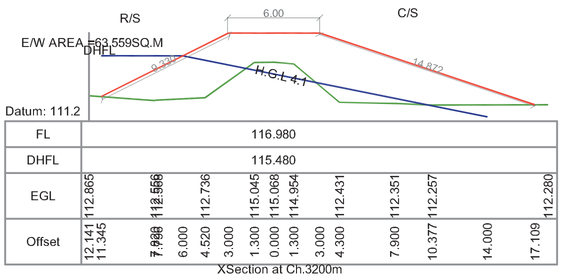












LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (RHS SLOPE), 2:1 SLOPE IN RIVER SIDE (LHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

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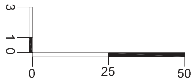
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



SCALE IN METRE

GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

Crosssections of Embankment
Embankment: E23, RECLAIMATION OF LOWLYING AREA NEAR TINGRAIMUKH IN KHEREMIA MOUZA (R/B OF AMILGURI T.E. TO TINGRAIMUKH)

CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

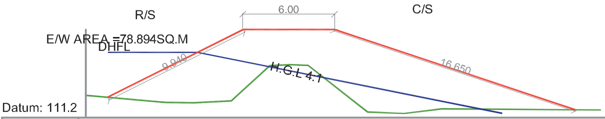
CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

J.E./A.E.

A.E.E.

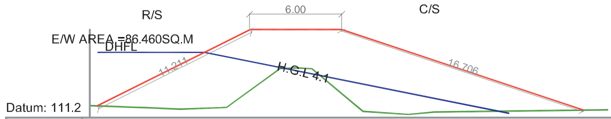
E.E.

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



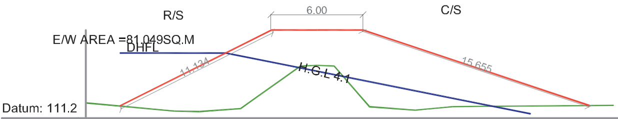
FL	116.980																
DHFL	115.480																
EGL	112.664		112.190	112.166	112.306		114.611	114.668	114.634		111.572	111.472	111.772			111.704
Offset	13.323	11.891	8.089	6.180 6.000	3.780	3.000	1.250	0.000	1.250	3.000	5.170	7.570	10.025	14.000	18.796	

XSection at Ch.3300m

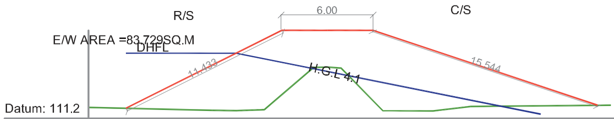


FL	116.980															
DHFL	115.480															
EGL	111.985	111.857	111.751		111.871		114.411	114.468	114.411		111.606	111.406	111.572			111.718
Offset	13.533 13.028	10.005	7.550	6.001	4.550	3.000	1.050	0.000	1.050	3.000	4.410	7.410	9.046	13.999	18.849	

XSection at Ch.4300m



FL	116.980																
DHFL	115.480																
EGL	112.206		111.668	111.632		111.832		114.622	114.668	114.622	111.947	111.727	111.961			112.042
Offset	15.179	12.959	9.356	7.720	6.000	5.020	3.000	1.100	0.000	1.100	3.000 3.440	6.440	8.895	14.000	17.852	



FL	116.980															
DHFL	115.480															
EGL	111.925		111.734	111.711	111.771		114.545	114.568	114.511	111.704	111.684	111.984			112.073
Offset	15.675	13.226	7.576	6.000 5.940	4.140	3.000	0.900	0.000	0.900	3.000 3.650	6.950	9.405	14.000	17.746	

XSection at Ch.5400m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (RHS SLOPE), 2:1 SLOPE IN RIVER SIDE (LHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

NOTE:

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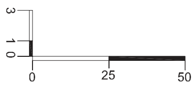
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



SCALE IN METRE

GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

Crosssections of Embankment
Embankment: E23, RECLAIMATION OF LOWLYING AREA NEAR TINGRAIMUKH IN KHEREMIA MOUZA (R/B OF AMILGURI T.E. TO TINGRAIMUKH)

CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

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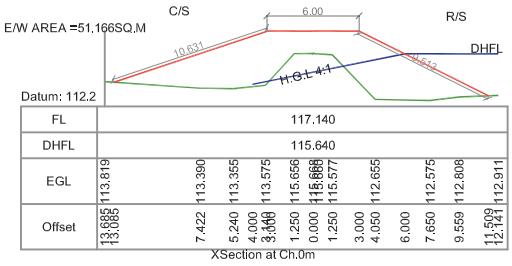
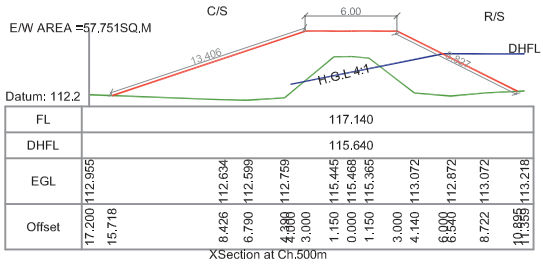
DIBRUGARH W R DIVISION
DIBRUGARH



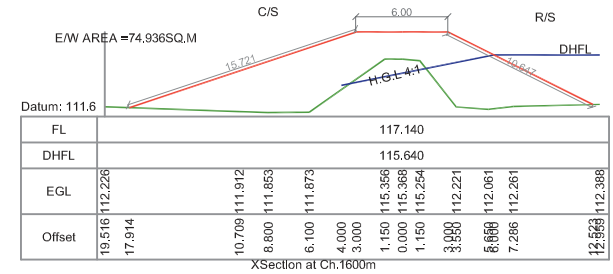
FL	117.140												
DHFL	115.640												
EGL	113.819	113.390	113.355	113.575	115.656	115.577	112.655	112.575	112.808	112.911			
Offset	13.685	7.422	5.240	4.000	1.250	0.000	1.250	3.000	4.050	6.000	7.650	9.559	11.509

XSection at Ch.0m



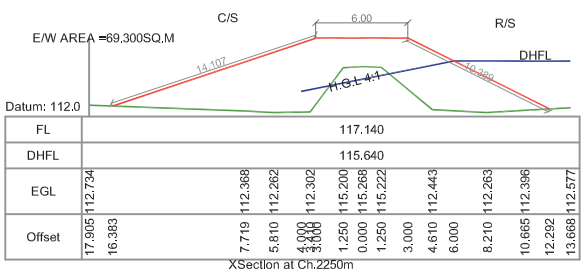
FL	117.140												
DHFL	115.640												
EGL	112.955	112.634	112.599	112.759	115.445	115.468	115.365	113.072	112.872	113.072	113.218		
Offset	17.200	15.718	8.426	6.790	4.000	3.000	1.150	0.000	1.150	3.000	4.140	6.540	8.722

XSection at Ch.500m



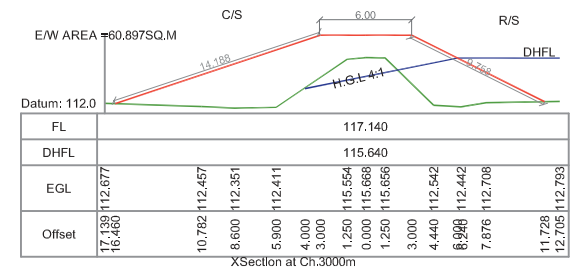
FL	117.140												
DHFL	115.640												
EGL	112.226	111.912	111.853	111.873	115.356	115.368	115.254	112.221	112.061	112.261	112.388		
Offset	19.516	17.914	10.709	8.800	6.100	4.000	3.000	1.150	0.000	1.150	3.000	5.000	7.286

XSection at Ch.1600m



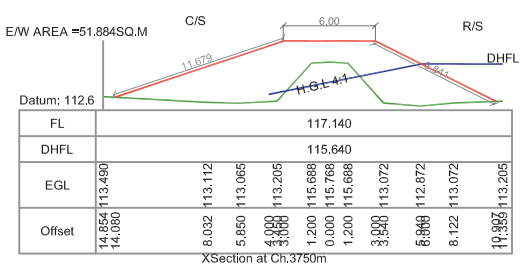
FL	117.140												
DHFL	115.640												
EGL	112.734	112.368	112.262	112.302	115.200	115.268	115.222	112.443	112.263	112.396	112.577		
Offset	17.905	16.383	7.719	5.810	4.000	3.000	1.250	0.000	1.250	3.000	4.610	6.000	8.210

XSection at Ch.2250m



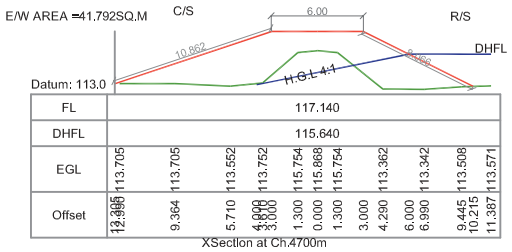
FL	117.140												
DHFL	115.640												
EGL	112.677	112.457	112.351	112.411	115.554	115.668	115.656	112.542	112.442	112.708	112.793		
Offset	17.139	16.460	10.782	8.600	5.900	4.000	3.000	1.250	0.000	1.250	3.000	4.440	6.000

XSection at Ch.3000m



FL	117.140												
DHFL	115.640												
EGL	113.490	113.112	113.065	113.205	115.688	115.768	115.688	113.072	112.872	113.072	113.205		
Offset	14.854	14.080	8.032	5.850	4.000	3.000	1.200	0.000	1.200	3.000	5.000	6.000	8.122

XSection at Ch.3750m



FL	117.140												
DHFL	115.640												
EGL	113.705	113.705	113.552	113.752	115.754	115.868	115.754	113.362	113.342	113.508	113.571		
Offset	12.305	9.364	5.710	4.000	3.000	1.300	0.000	1.300	3.000	4.290	6.000	6.990	9.445

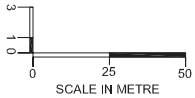
XSection at Ch.4700m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (LHS SLOPE), 2:1 SLOPE IN RIVER SIDE (RHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

NOTE:

1. SECTIONAL AREA INDICATED IS AREA BETWEEN EXISTING GROUND AND FINISHED GROUND PROFILES ONLY AND NOT INCLUSIVE OF AREA FOR GRABBING
2. GRABBING TO BE CONSIDERED FOR ENTIRE WIDTH BETWEEN TOES OF FINISHED PROFILE ON EXISTING GROUND FOR A DEPTH OF 0.15M
3. RIVER SIDE SLOPE OF EMBANKMENT = 2H:1V, COUNTRY SIDE SLOPE OF EMBANKMENT = 3H:1V
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



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CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

J.E./A.E.

A.E.E.

E.E.

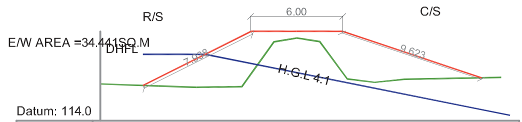
GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

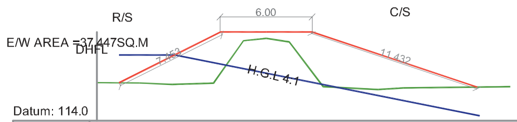
Crosssections of Embankment
Embankment: E24, TINGRAI L/B DYKE FROM BALIJAN TO TINGRAIMUKH

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



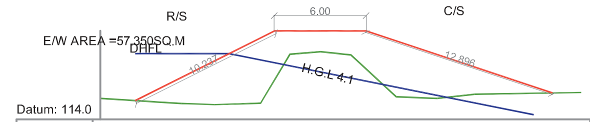
FL	119.870
DHFL	118.370
EGL	116.425, 116.281, 116.211, 116.251, 119.187, 119.437, 119.204, 116.750, 116.530, 116.730, 116.851
Offset	12.899, 10.100, 9.055, 6.600, 6.000, 3.600, 3.000, 1.500, 0.000, 1.500, 3.000, 3.320, 5.120, 7.029, 12.129, 13.409

XSection at Ch.0m



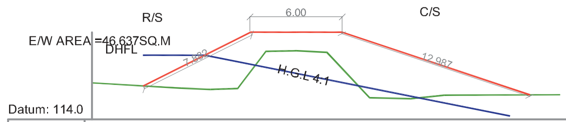
FL	119.829
DHFL	118.329
EGL	116.506, 116.487, 116.393, 116.473, 119.253, 119.420, 119.187, 116.241, 116.061, 116.161, 116.238
Offset	11.106, 9.666, 8.342, 6.160, 6.000, 3.460, 3.000, 1.500, 0.000, 1.500, 3.000, 3.740, 7.340, 8.976, 13.845, 14.000

XSection at Ch.200m



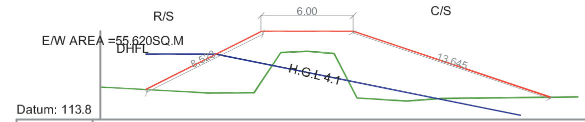
FL	119.808
DHFL	118.308
EGL	115.375, 115.037, 114.966, 115.066, 118.270, 118.437, 118.228, 115.475, 115.375, 115.642, 115.762
Offset	14.449, 12.156, 9.102, 6.920, 6.000, 3.920, 3.000, 2.000, 0.000, 2.000, 3.000, 4.970, 7.670, 10.125, 14.000, 15.234

XSection at Ch.300m



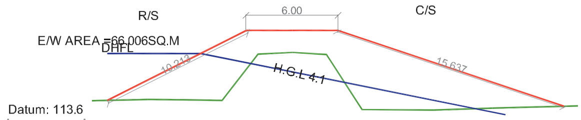
FL	119.716
DHFL	118.216
EGL	116.393, 116.039, 115.969, 116.029, 118.467, 118.495, 118.402, 115.415, 115.355, 115.588, 115.617
Offset	13.389, 10.050, 7.549, 6.020, 6.000, 3.840, 3.000, 2.000, 0.000, 2.000, 3.000, 4.800, 7.500, 9.682, 14.000, 15.320

XSection at Ch.750m



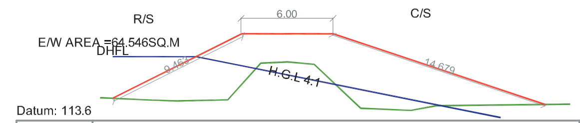
FL	119.562
DHFL	118.062
EGL	115.912, 115.616, 115.522, 115.542, 118.166, 118.249, 118.110, 115.199, 114.999, 115.166, 115.267
Offset	13.596, 10.623, 8.136, 6.500, 6.000, 3.500, 3.000, 1.750, 0.000, 1.750, 3.000, 3.250, 6.550, 8.732, 14.000, 15.945

XSection at Ch.1500m



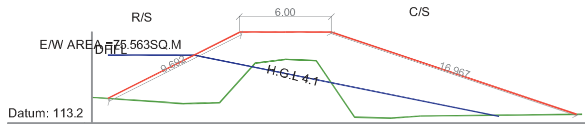
FL	119.408
DHFL	117.908
EGL	114.815, 114.911, 114.879, 114.847, 117.865, 117.976, 117.837, 114.243, 114.211, 114.338, 114.487
Offset	13.131, 12.135, 9.481, 7.192, 6.000, 4.594, 3.000, 2.250, 0.000, 2.250, 3.000, 4.592, 9.294, 13.130, 14.000, 17.835

XSection at Ch.2250m



FL	119.306
DHFL	117.806
EGL	115.113, 114.951, 114.892, 114.972, 117.379, 117.462, 117.299, 114.419, 114.279, 114.579, 114.684
Offset	12.296, 11.464, 8.846, 7.210, 6.000, 3.910, 3.000, 1.750, 0.000, 1.750, 3.000, 4.830, 8.130, 9.766, 14.000, 16.926

XSection at Ch.2750m



FL	119.152
DHFL	117.652
EGL	114.886, 114.600, 114.483, 114.543, 117.128, 117.378, 117.285, 113.598, 113.538, 113.671, 113.790
Offset	12.704, 11.669, 8.376, 6.740, 6.000, 4.340, 3.000, 2.000, 0.000, 2.000, 3.000, 4.520, 6.920, 8.829, 14.000, 19.096

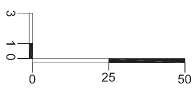
XSection at Ch.3500m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (RHS SLOPE), 2:1 SLOPE IN RIVER SIDE (LHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

NOTE:

1. SECTIONAL AREA INDICATED IS AREA BETWEEN EXISTING GROUND AND FINISHED GROUND PROFILES ONLY AND NOT INCLUSIVE OF AREA FOR GRABBING
2. GRABBING TO BE CONSIDERED FOR ENTIRE WIDTH BETWEEN TOES OF FINISHED PROFILE ON EXISTING GROUND FOR A DEPTH OF 0.15M
3. RIVER SIDE SLOPE OF EMBANKMENT = 2H:1V, COUNTRY SIDE SLOPE OF EMBANKMENT = 3H:1V
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



SCALE IN METRE

GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

Crosssections of Embankment
Embankment: E25, TRIBUTARY DYKE FROM BHEKULAJAN TO TIPLING

CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

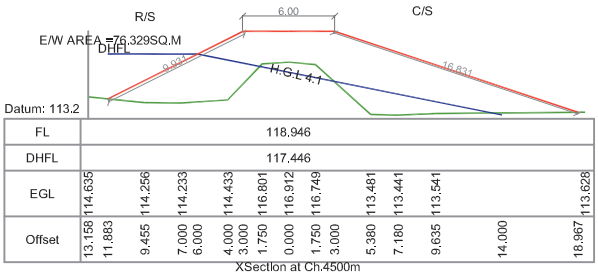
CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

J.E./A.E.

A.E.E.

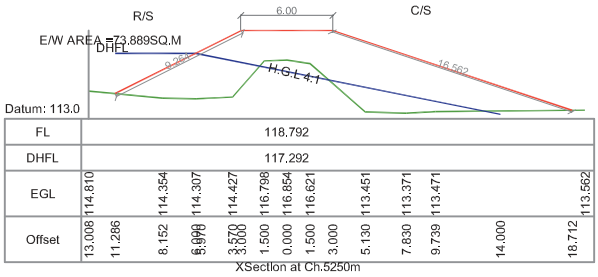
E.E.

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



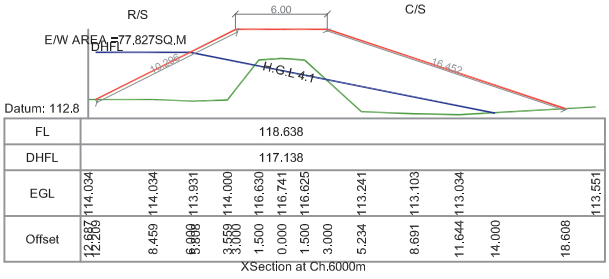
FL	118.946													
DHFL	117.446													
EGL	114.635	114.256	114.233	114.433	116.801	116.912	116.749	113.481	113.441	113.541				113.628
Offset	13.158	11.883	9.455	7.000	6.000	4.000	3.000	1.750	0.000	1.750	3.000	5.380	7.180	9.635	14.000	18.967

XSection at Ch.4500m



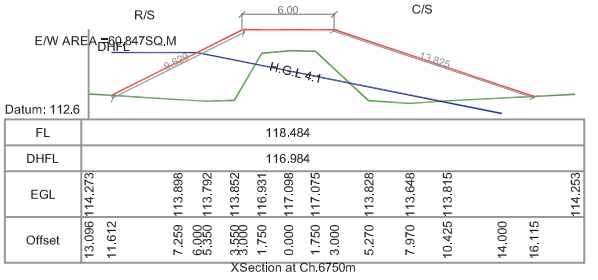
FL	118.792													
DHFL	117.292													
EGL	114.810	114.354	114.307	114.427	116.798	116.854	116.621	113.451	113.371	113.471				113.562
Offset	13.008	11.286	8.152	6.000	5.570	3.000	1.500	0.000	1.500	3.000	5.130	7.830	9.739	14.000	18.712

XSection at Ch.5250m



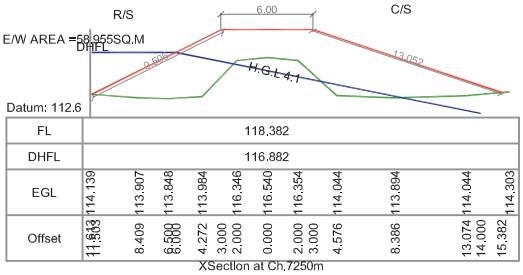
FL	118.638													
DHFL	117.138													
EGL	114.034	114.034	113.931	114.000	116.630	116.741	116.625	113.241	113.103	113.034				113.551
Offset	12.687	12.000	8.459	6.000	5.559	3.000	1.500	0.000	1.500	3.000	5.234	8.691	11.644	14.000	18.608

XSection at Ch.6000m



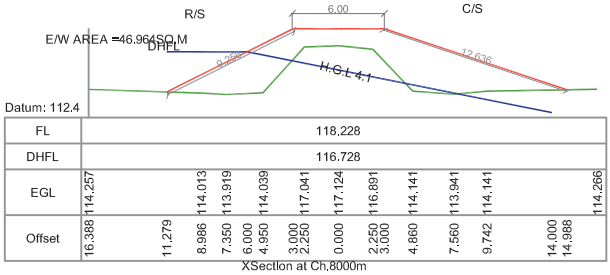
FL	118.484													
DHFL	116.984													
EGL	114.273	113.898	113.792	113.852	116.931	117.098	117.075	113.828	113.648	113.815				114.253
Offset	13.096	11.612	7.259	6.000	5.550	3.000	1.750	0.000	1.750	3.000	5.270	7.970	10.425	14.000	16.115

XSection at Ch.6750m



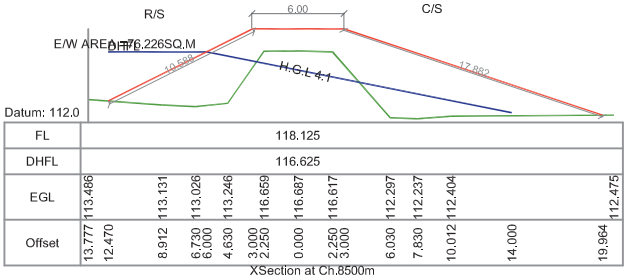
FL	118.382										
DHFL	116.882										
EGL	114.139	113.907	113.848	113.984	116.346	116.540	116.354	114.044	113.894		114.044	114.303
Offset	11.613	8.409	6.500	4.272	3.000	2.000	0.000	2.000	3.000	4.576	8.386	13.074	14.000	15.382

XSection at Ch.7250m



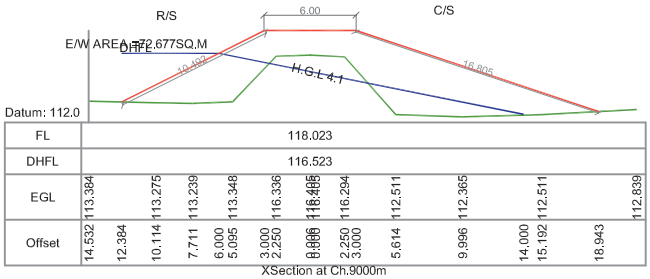
FL	118.228													
DHFL	116.728													
EGL	114.257		114.013	113.919	114.039	117.041	117.124	116.891	114.141	113.941	114.141			114.266
Offset	16.388	11.279	8.986	7.350	6.000	4.950	3.000	2.250	0.000	2.250	3.000	4.860	7.560	9.742	14.000	14.988

XSection at Ch.8000m



FL	118.125													
DHFL	116.625													
EGL	113.486	113.131	113.026	113.246	116.659	116.687	116.617	112.297	112.237	112.404				112.475
Offset	13.777	12.470	8.912	6.730	6.000	4.630	3.000	2.250	0.000	2.250	3.000	6.030	7.830	10.012	14.000	19.964

XSection at Ch.8500m



FL	118.023													
DHFL	116.523													
EGL	113.384	113.275	113.239	113.348	116.336	116.485	116.294	112.511		112.365			112.511	112.839
Offset	14.532	12.384	10.114	7.711	6.000	5.095	3.000	2.250	0.000	2.250	3.000	5.614	9.996	14.000	15.192	18.943

XSection at Ch.9000m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (RHS SLOPE), 2:1 SLOPE IN RIVER SIDE (LHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

NOTE:

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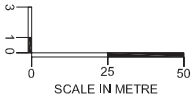
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

J.E./A.E.

A.E.E.

E.E.

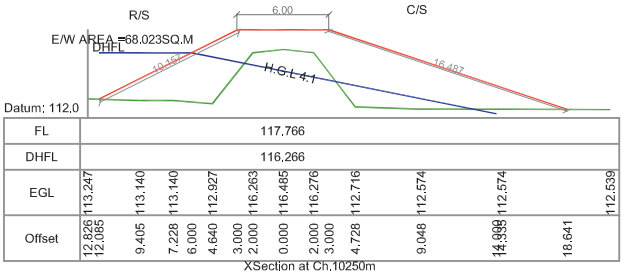
GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

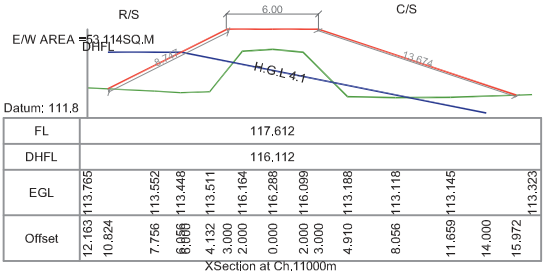
Crosssections of Embankment
Embankment: E25, TRIBUTARY DYKE FROM BHEKULAJAN TO TIPLING

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



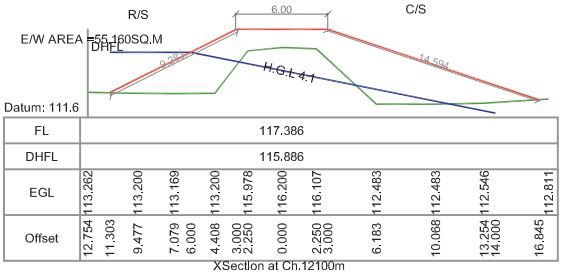
FL	117.766												
DHFL	116.266												
EGL	113.247	113.140	113.140	112.927	116.263	116.485	116.276	112.716	112.574	112.574			112.539
Offset	12.826 12.085	9.405	7.228	6.000	4.640	3.000 2.000	0.000	2.000 3.000	4.728	9.048	14.000 14.335		18.641

XSection at Ch.10250m



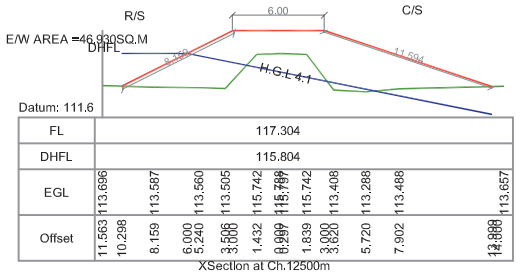
FL	117.612												
DHFL	116.112												
EGL	113.765		113.552	113.448	113.511	116.164	116.288	116.099	113.188	113.118	113.145		113.323
Offset	12.163	10.824	7.756	6.000 6.000	4.132	3.000 2.000	0.000	2.000 3.000	4.910	8.056	11.659	14.000	15.972

XSection at Ch.11000m



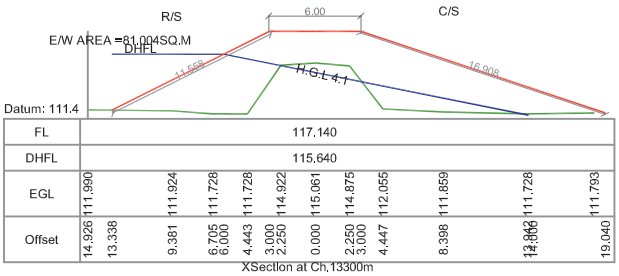
FL	117.386												
DHFL	115.886												
EGL	113.262	113.200	113.169	113.200	115.978	116.200	116.107	112.483	112.483	112.546			112.811
Offset	12.754	11.303	9.477	7.079 6.000	4.408	3.000 2.250	0.000	2.250 3.000	6.183	10.066	13.254 14.000		16.845

XSection at Ch.12100m



FL	117.304												
DHFL	115.804												
EGL	113.696	113.587	113.560	113.505	115.742	116.788	115.742	113.408	113.288	113.488			113.657
Offset	11.563	10.298	8.159	6.000 5.240	3.506 3.000	1.432	0.000 0.297	1.839	3.000 3.620	5.720	7.902	13.880 14.000	

XSection at Ch.12500m



FL	117.140												
DHFL	115.640												
EGL	111.990		111.924	111.728	111.728	114.922	115.061	114.875	112.055	111.859		111.728		111.793
Offset	14.926	13.338	9.381	6.705 6.000	4.443	3.000 2.250	0.000	2.250 3.000	4.447	8.398	13.842 14.000		19.040

XSection at Ch.13300m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (RHS SLOPE), 2:1 SLOPE IN RIVER SIDE (LHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

NOTE:

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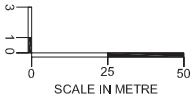
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

J.E./A.E.

A.E.E.

E.E.

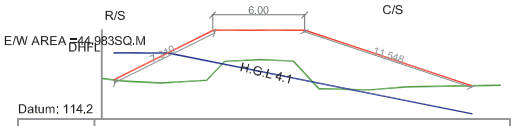
GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

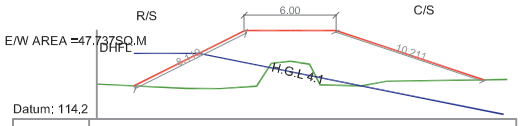
Crosssections of Embankment
Embankment: E25, TRIBUTARY DYKE FROM BHEKULAJAN TO TIPLING

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



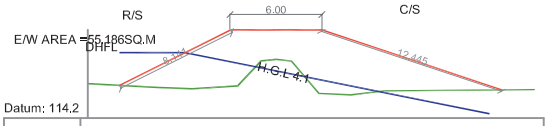
FL	120.040										
DHFL	118.540										
EGL	116.867	116.688	116.570	116.750	117.988	118.099	118.006	116.196	116.116	116.316	116.421
Offset	10.306	9.539	8.875	6.420	6.000	3.400	2.250	0.000	2.250	3.000	3.950	7.250	9.705	12.855	14.000

XSection at Ch.0m



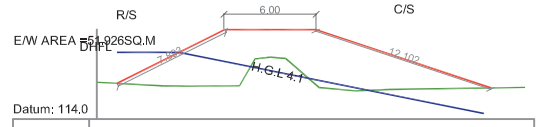
FL	120.012										
DHFL	118.512										
EGL	116.497		116.215	116.204	116.364	117.854	117.993	117.807	116.446	116.386	116.686		116.807
Offset	12.696	10.262	6.792	6.000	4.610	3.000	2.210	1.250	0.000	1.250	1.970	3.000	4.670	6.306	12.687	14.000

XSection at Ch.250m



FL	119.983										
DHFL	118.483										
EGL	116.461		116.196	116.126	116.306	117.941	118.052	117.936	115.814	115.714	115.981		116.066
Offset	12.358	10.281	7.712	6.000	5.530	3.000	2.550	1.000	0.000	1.000	3.000	4.900	7.082	14.000	14.807

XSection at Ch.500m



FL	119.870										
DHFL	118.370										
EGL	116.410		116.174	116.163	116.183	117.941	118.052	117.982	116.065	115.845	115.945		116.076
Offset	11.378	10.060	6.929	6.000	5.020	3.000	2.020	1.000	0.000	1.000	3.000	5.600	7.782	14.000	14.481

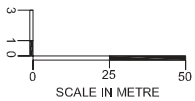
XSection at Ch.1500m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (RHS SLOPE), 2:1 SLOPE IN RIVER SIDE (LHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

NOTE:

1. SECTIONAL AREA INDICATED IS AREA BETWEEN EXISTING GROUND AND FINISHED GROUND PROFILES ONLY AND NOT INCLUSIVE OF AREA FOR GRABBING
2. GRABBING TO BE CONSIDERED FOR ENTIRE WIDTH BETWEEN TOES OF FINISHED PROFILE ON EXISTING GROUND FOR A DEPTH OF 0.15M
3. RIVER SIDE SLOPE OF EMBANKMENT = 2H:1V, COUNTRY SIDE SLOPE OF EMBANKMENT = 3H:1V
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

J.E./A.E.

A.E.E.

E.E.

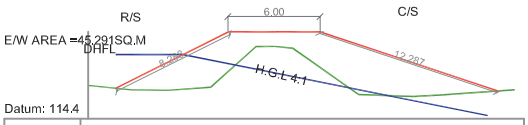
GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

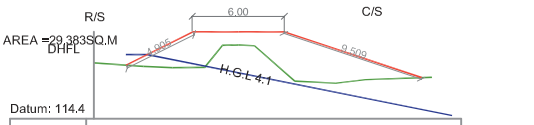
Crosssections of Embankment
Embankment: E26, CONSTRUCTION OF T/DYKE ALONG THE R/B OF BURIDEHING RIVER FROM DEOCHALI TO TIPLING GHAT FROM NOWJAN TO RLY LINE PHIII

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



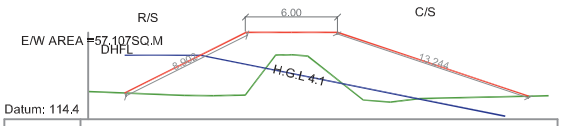
FL	120.100													
DHFL	118.600													
EGL	116.577	116.283	116.259	116.459	119.127	119.138	119.025	115.975	115.855	115.955	116.295			
Offset	12.214	10.413	9.325	6.870	6.000	4.170	3.000	1.200	0.000	1.200	3.000	5.540	9.140	11.049	14.000	14.857

XSection at Ch.0m



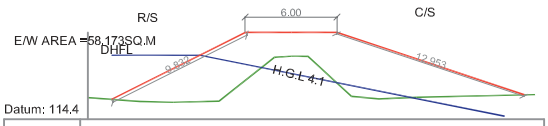
FL	120.100													
DHFL	118.600													
EGL	118.050	117.827	117.745	117.765	119.216	119.238	119.181	116.862	116.722	116.955	117.118			
Offset	9.486	7.387	6.228	4.320	3.000	2.220	1.050	0.000	1.050	3.000	3.690	6.390	8.299	12.021	12.685

XSection at Ch.250m



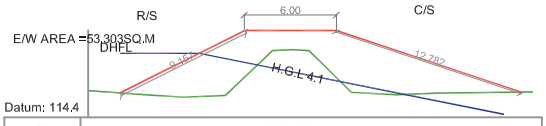
FL	120.100													
DHFL	118.600													
EGL	116.216	115.961	115.949	115.989	118.616	118.638	118.547	115.662	115.522	115.755	115.940			
Offset	13.359	10.962	7.059	5.999	5.150	3.860	3.000	1.050	0.000	1.050	3.000	4.690	6.490	8.399	14.001	15.564

XSection at Ch.500m



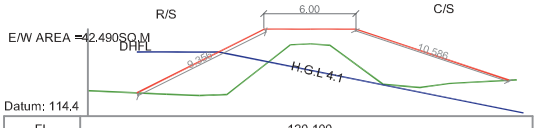
FL	120.100													
DHFL	118.600													
EGL	115.822	115.561	115.513	115.593	118.470	118.538	118.527	115.903	115.743	115.843	116.020			
Offset	13.341	11.794	9.922	7.740	6.000	4.740	3.000	1.100	0.000	1.100	3.000	3.960	5.760	8.215	14.000	15.288

XSection at Ch.1000m



FL	120.100													
DHFL	118.600													
EGL	116.157	115.838	115.721	115.841	118.770	118.838	118.781	116.039	115.879	115.979	116.069			
Offset	13.286	11.190	8.889	6.980	6.000	4.280	3.000	1.200	0.000	1.200	3.000	4.000	7.000	9.455	14.000	15.126

XSection at Ch.1250m



FL	120.100													
DHFL	118.600													
EGL	116.064	115.827	115.745	115.805	119.070	119.138	119.047	116.484	116.264	116.531	116.781			
Offset	14.577	11.368	9.442	7.260	6.000	5.460	3.000	1.300	0.000	1.300	3.000	4.800	7.200	9.109	13.053	13.358

XSection at Ch.1350m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (RHS SLOPE), 2:1 SLOPE IN RIVER SIDE (LHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

NOTE:

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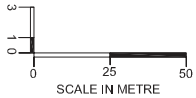
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

J.E./A.E.

A.E.E.

E.E.

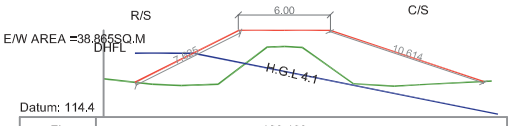
GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

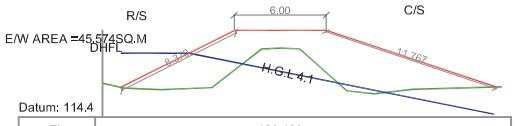
Crosssections of Embankment
Embankment: E27, CONSTRUCTION OF AN EMBANKMENT ALONG THE TIPLING BRIDGE TO TIPLING T.E.

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



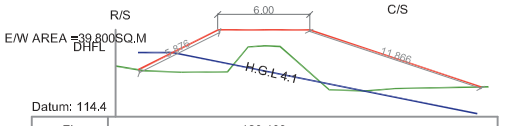
FL	120.100												
DHFL	118.600												
EGL	116.923	116.561	116.478	116.558	119.004	119.038	118.970	116.591	116.431	116.531		116.769	
Offset	11.886	9.820	8.679	6.770	6.000	4.370	3.000	1.150	0.000	1.150	3.000	4.510	7.210	8.846	13.069	13.577

XSection at Ch.1750m



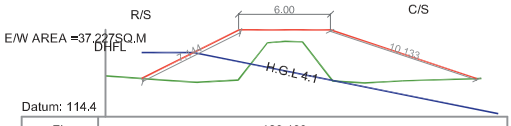
FL	120.100												
DHFL	118.600												
EGL	116.621	116.305	116.199	116.339	118.870	118.938	118.881	116.131	115.931	116.231		116.389	
Offset	11.668	10.487	10.255	7.800	6.000	4.500	3.000	1.250	0.000	1.250	3.000	4.370	6.170	8.625	14.108	14.108

XSection at Ch.2250m



FL	120.100												
DHFL	118.600												
EGL	117.721	117.405	117.311	117.331	118.970	119.038	119.004	116.156	116.076	116.243		116.356	
Offset	9.741	8.555	7.655	6.000	5.400	3.000	2.400	1.050	0.000	1.050	3.000	4.290	6.690	8.599	14.289	14.289

XSection at Ch.2750m



FL	120.100												
DHFL	118.600												
EGL	117.077		116.761	116.655	116.795	119.247	119.338	119.304	116.730	116.610	116.743		116.905
Offset	11.759	9.390	7.406	6.000	5.700	3.870	3.600	1.150	0.000	1.150	3.000	5.250	7.705	12.613	12.904

XSection at Ch.3800m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (RHS SLOPE), 2:1 SLOPE IN RIVER SIDE (LHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

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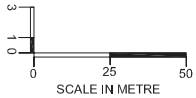


CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

J.E./A.E.

A.E.E.

E.E.

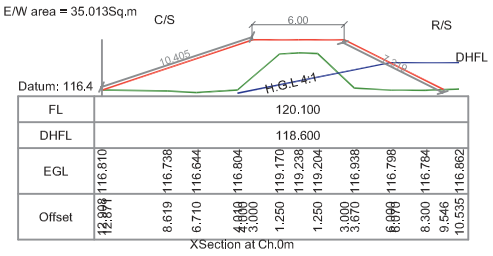
GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

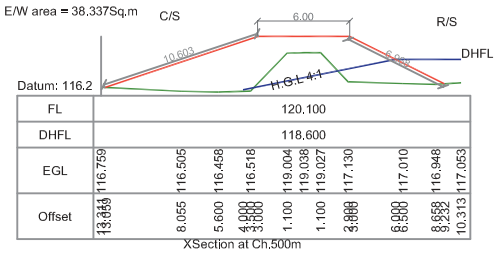
Crosssections of Embankment
Embankment: E27, CONSTRUCTION OF AN EMBANKMENT ALONG THE TIPLING BRIDGE TO TIPLING T.E.

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



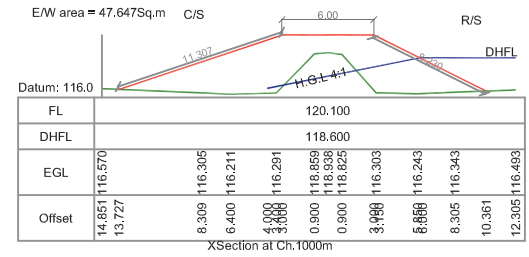
FL	120.100										
DHFL	118.600										
EGL	116.810	116.738	116.644	116.804	119.170	119.238	119.204	116.938	116.798	116.784	116.862
Offset	12.894	8.619	6.710	4.000	3.000	1.250	1.250	3.000	6.000	8.300	9.546	10.535

XSection at Ch.0m



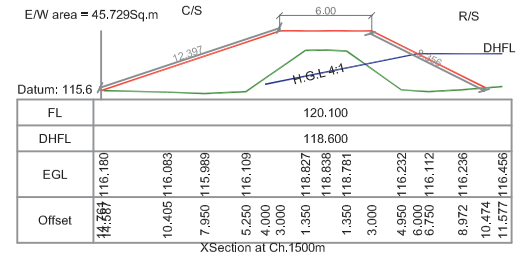
FL	120.100										
DHFL	118.600										
EGL	116.759	116.505	116.458	116.518	119.004	119.038	119.027	117.130	117.010	116.948	117.053
Offset	13.331	8.055	5.600	4.000	3.000	1.100	1.100	3.000	6.000	8.658	9.232	10.313

XSection at Ch.500m



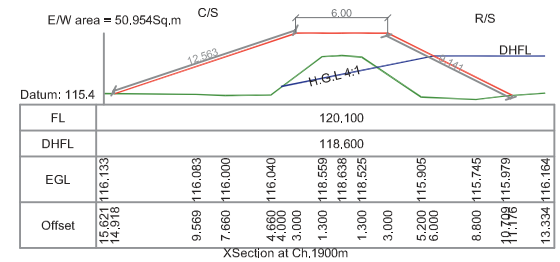
FL	120.100										
DHFL	118.600										
EGL	116.570	116.305	116.211	116.291	118.859	118.938	118.825	116.303	116.243	116.343	116.493
Offset	14.851	13.727	8.309	6.400	4.000	3.000	0.900	0.900	3.000	5.850	8.305	10.361	12.305

XSection at Ch.1000m



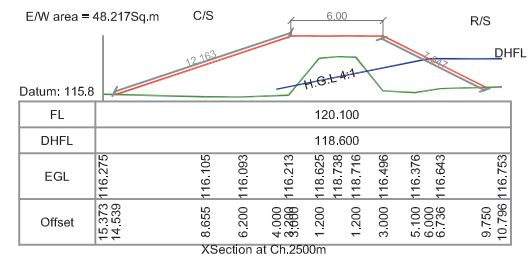
FL	120.100										
DHFL	118.600										
EGL	116.180	116.083	115.989	116.109	118.827	118.838	118.781	116.232	116.112	116.236	116.456
Offset	14.761	14.587	10.405	7.950	5.250	4.000	3.000	1.350	1.350	3.000	4.950	6.000	6.750	8.972	10.474	11.577

XSection at Ch.1500m



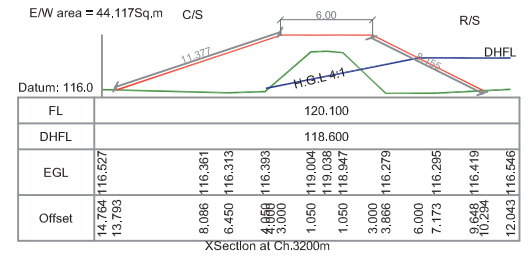
FL	120.100										
DHFL	118.600										
EGL	116.133	116.083	116.000	116.040	118.559	118.638	118.525	115.905	115.745	115.979	116.164
Offset	15.621	14.918	9.569	7.660	4.660	4.000	3.000	1.300	1.300	3.000	5.200	6.000	8.800	10.709	11.176	13.334

XSection at Ch.1900m



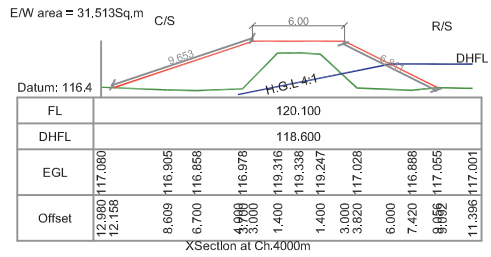
FL	120.100										
DHFL	118.600										
EGL	116.275	116.105	116.093	116.213	118.625	118.738	118.716	116.496	116.376	116.643	116.753
Offset	15.373	14.539	8.655	6.200	4.000	3.000	1.200	1.200	3.000	5.100	6.000	6.736	9.750	10.796

XSection at Ch.2500m



FL	120.100										
DHFL	118.600										
EGL	116.527	116.361	116.313	116.393	119.004	119.038	118.947	116.279	116.295	116.419	116.546
Offset	14.764	13.793	8.086	6.450	4.000	3.000	1.050	1.050	3.000	3.866	6.000	7.173	9.648	10.294	12.043

XSection at Ch.3200m



FL	120.100										
DHFL	118.600										
EGL	117.080	116.905	116.858	116.978	119.316	119.338	119.247	117.028	116.888	117.055	117.001
Offset	12.980	12.158	8.609	6.700	4.000	3.000	1.400	1.400	3.000	3.620	6.000	7.420	9.066	9.692	11.396

XSection at Ch.4000m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (LHS SLOPE), 2:1 SLOPE IN RIVER SIDE(RHS SLOPE)
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- H.G. LINE (INCLINED PORTION)

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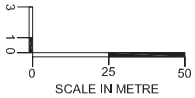

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CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

J.E./A.E.

A.E.E.

E.E.

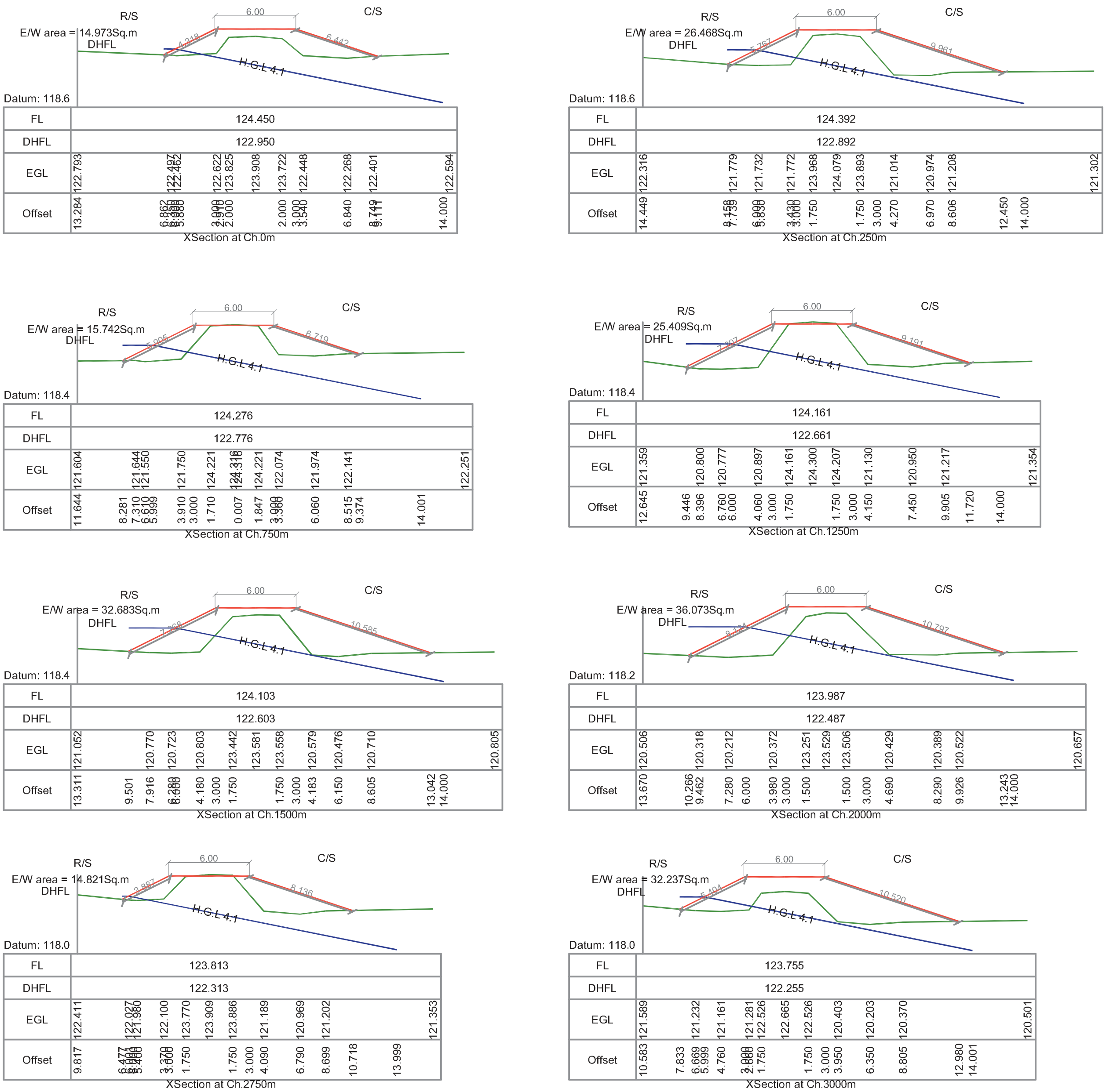
GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

Crosssections of Embankment
Embankment: E28, CONSTRUCTION OF AN EMBANKMENT ALONG THE L/B OF TIPLING RIVER

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



LEGEND

EXISTING GROUND PROFILE

FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (RHS SLOPE), 2:1 SLOPE IN RIVER SIDE(LHS SLOPE)

DHFL LINE (HORIZONTAL PORTION)

H.G. LINE (INCLINED PORTION)

NOTE:

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4. FREEBOARD ABOVE D.H.F.L. = 1.5M

3 1 0

0 25 50

SCALE IN METRE

GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

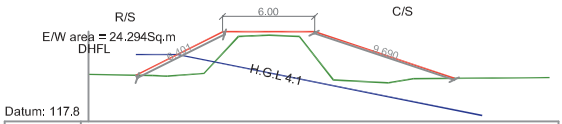
Crosssections of Embankment
Embankment: E29, CONSTRUCTION OF AN EMBANKMENT ALONG THE R/B OF BURIDEHING RIVER FROM DEOCHALI HILL TO TIPLING GHAT PH-I (FAKIAL GRAZING)

CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

J.E./A.E.   A.E.E.   E.E.

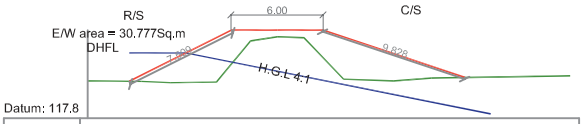
EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



Datum: 117.8

FL	123.698													
DHFL	122.198													
EGL	120.894	120.815	120.780	120.960	123.388	123.471	123.378	120.525	120.345	120.612				120.684
Offset	11.839	8.725	7.649	6.601	4.250	3.000	2.000	2.000	3.000	4.240	7.840	9.476	12.193	13.999

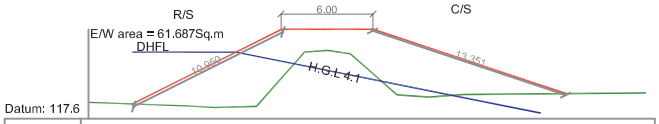
XSection at Ch.3250m



Datum: 117.8

FL	123.582													
DHFL	122.082													
EGL	120.254	120.215	120.132	120.172	122.870	123.148	123.078	120.361	120.241	120.441				120.578
Offset	12.446	9.716	8.899	6.990	6.000	3.990	3.000	1.750	1.750	3.000	4.350	7.650	10.105	12.324	14.000

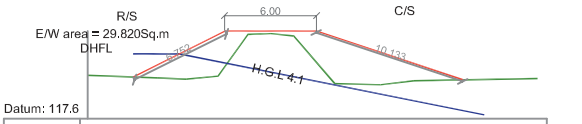
XSection at Ch.3750m



Datum: 117.6

FL	123.466													
DHFL	121.966													
EGL	118.673		118.441	118.335	118.415	121.963	122.074	121.865	119.164	119.024	119.191			119.285
Offset	15.673	12.794	9.259	7.350	5.999	4.650	3.000	1.500	1.500	3.000	4.580	6.680	8.862	14.001	15.666

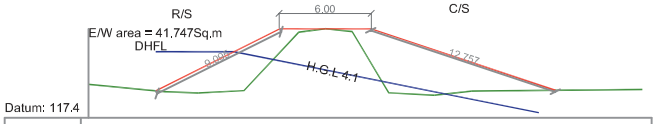
XSection at Ch.4250m



Datum: 117.6

FL	123.350													
DHFL	121.850													
EGL	120.437		120.274	120.192	120.392	123.129	123.185	123.022	119.903	119.823	120.090			120.231
Offset	12.025	9.039	7.469	6.000	5.000	3.460	3.000	1.500	1.500	3.000	4.200	7.200	9.382	12.613	14.000

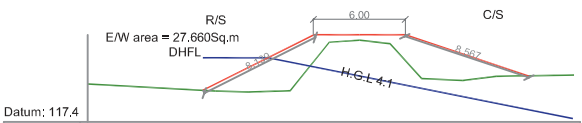
XSection at Ch.4750m



Datum: 117.4

FL	123.235													
DHFL	121.735													
EGL	119.589		119.110	119.027	119.187		123.021	123.243	123.057	119.041	118.881	119.148		119.257
Offset	15.555	11.135	10.332	8.350	6.000	5.350	3.000	1.750	1.750	3.000	4.150	7.150	9.605	14.000	15.102

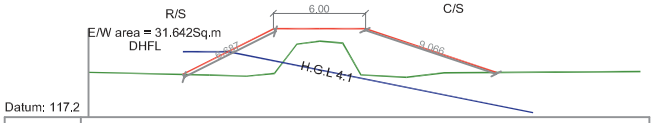
XSection at Ch.5250m



Datum: 117.4

FL	123.119													
DHFL	121.619													
EGL	119.894		119.433	119.374	119.454	122.627	122.766	122.533	120.248	120.128	120.395			120.479
Offset	17.851	10.280	9.442	7.260	6.000	4.560	3.000	2.000	2.000	3.000	4.070	6.770	8.952	11.127	14.000

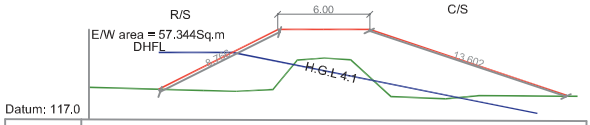
XSection at Ch.5750m



Datum: 117.2

FL	123.003													
DHFL	121.503													
EGL	120.145		119.975	119.893	120.073	121.992	122.186	122.070	119.975	119.815	120.115			120.195
Offset	15.175	8.981	7.225	6.001	4.770	3.000	1.500	1.500	3.000	5.700	8.155	11.601	13.999		

XSection at Ch.6250m



Datum: 117.0

FL	122.887													
DHFL	121.387													
EGL	119.102		118.881	118.834	118.954	120.875	121.014	120.898	118.483	118.343	118.543			118.626
Offset	15.424	10.841	7.932	6.000	3.000	1.750	1.750	3.000	4.390	7.990	10.172	14.000	15.904	

XSection at Ch.6750m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (RHS SLOPE), 2:1 SLOPE IN RIVER SIDE(LHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

NOTE:

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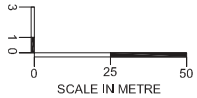
3. RIVER SIDE SLOPE OF EMBANKMENT = 2H:1V, COUNTRY SIDE SLOPE OF EMBANKMENT = 3H:1V
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

J.E./A.E.

A.E.E.

E.E.

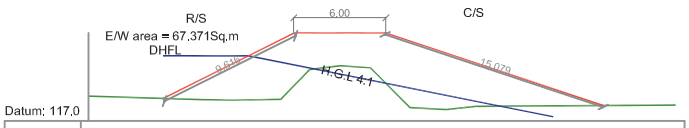
GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

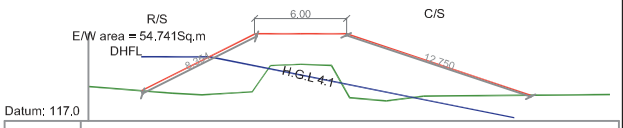
Crosssections of Embankment
Embankment: E29, CONSTRUCTION OF AN EMBANKMENT ALONG THE R/B OF BURIDEHING RIVER FROM DEOCHALI HILL TO TIPLING GHAT PH-I (FAKIAL GRAZING)

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



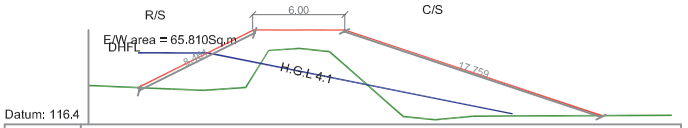
FL	122.772													
DHFL	121.272													
EGL	118.632	118.389	118.365	118.425	120.372	120.622	120.483	117.871	117.751	117.951				118.033
Offset	16.505	11.601	9.072	6.890	6.000	3.890	3.000	2.000	2.000	3.000	4.600	7.000	8.909	14.000	17.305

XSection at Ch.7250m



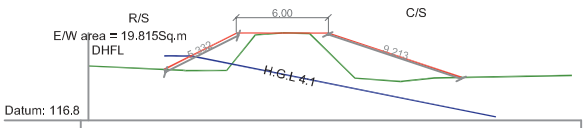
FL	122.714													
DHFL	121.214													
EGL	119.251	118.815	118.709	118.909	120.632	120.715	120.645	118.520	118.320	118.620				118.728
Offset	13.947	10.472	8.399	6.490	6.000	3.190	3.000	2.000	2.000	3.000	3.200	5.600	8.055	14.000	15.096

XSection at Ch.7500m



FL	122.598													
DHFL	121.098													
EGL	118.954	118.720	118.638	118.838	121.259	121.398	121.189	116.925	116.705	116.939				117.006
Offset	13.822	10.568	8.382	6.200	6.000	3.500	3.000	2.000	2.000	3.000	6.840	8.940	11.395	14.000	19.848

XSection at Ch.8000m



FL	122.540													
DHFL	121.040													
EGL	120.375	120.198	120.088	120.085	122.412	122.548	122.514	119.580	119.360	119.593				119.761
Offset	12.744	7.769	6.579	6.000	3.670	3.000	1.788	0.025	1.772	3.000	4.750	7.750	9.932	11.740	13.999

XSection at Ch.8250m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (RHS SLOPE), 2:1 SLOPE IN RIVER SIDE(LHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

NOTE:

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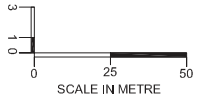
3. RIVER SIDE SLOPE OF EMBANKMENT = 2H:1V, COUNTRY SIDE SLOPE OF EMBANKMENT = 3H:1V
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

J.E./A.E.

A.E.E.

E.E.

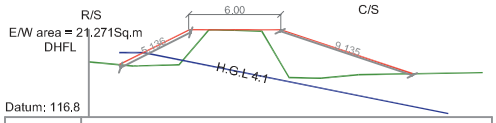
GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

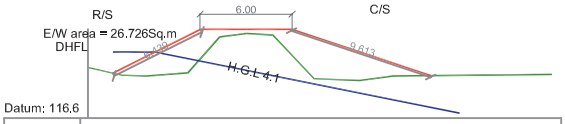
Crosssections of Embankment
Embankment: E29, CONSTRUCTION OF AN EMBANKMENT ALONG THE R/B OF BURIDEHING RIVER FROM DEOCHALI HILL TO TIPLING GHAT PH-I (FAKIAL GRAZING)

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



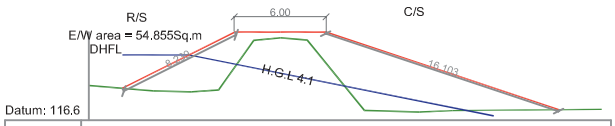
FL	122.540													
DHFL	121.040													
EGL	120.433	120.167	120.235	122.529	122.442	119.400	119.360	119.593			119.727			
Offset	9.601	7.594	3.670	3.000	1.726	0.028	1.755	3.000	5.650	8.105	11.666	14.000		

XSection at Ch.0m



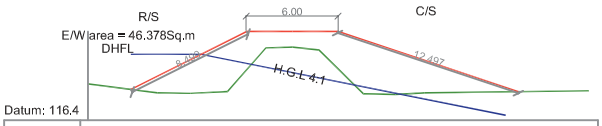
FL	122.435													
DHFL	120.935													
EGL	119.927	119.421	119.362	119.582	121.932	122.154	122.061	119.191	119.071	119.371			119.472	
Offset	10.387	8.759	6.630	3.830	1.750		1.750	3.000	4.450	7.450	9.632	12.120	13.999	

XSection at Ch.500m



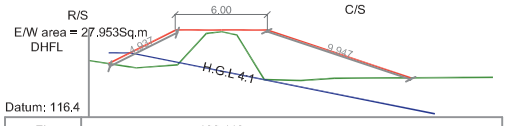
FL	122.382													
DHFL	120.882													
EGL	118.886	118.522	118.463	118.583	121.833	122.000	121.861	117.249	117.129	117.229			117.314	
Offset	12.582	10.369	8.315	6.000	4.060	3.000	1.750	1.750	3.000	5.510	9.110	11.292	14.000	18.277

XSection at Ch.750m



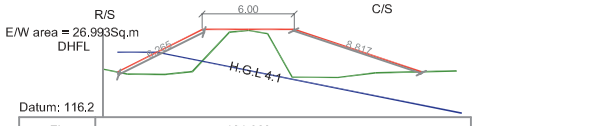
FL	122.224													
DHFL	120.724													
EGL	118.783	118.199	118.164	118.284	121.143	121.199	121.013	118.132	118.092	118.192			118.331	
Offset	13.414	10.602	8.852	6.670	4.270	3.000	1.750	1.750	3.000	4.650	6.750	8.659	14.000	14.856

XSection at Ch.1500m



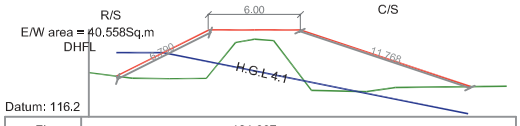
FL	122.118													
DHFL	120.618													
EGL	120.114	119.829	119.829	121.889	122.000	121.791	118.867	118.807	118.941				119.006	
Offset	8.717	7.416	6.000	3.000	1.000	1.000	3.000	5.200	7.382		12.436	14.000		

XSection at Ch.2000m



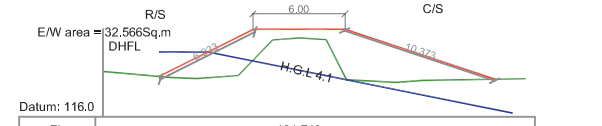
FL	121.960													
DHFL	120.460													
EGL	119.343	119.027	118.992	119.192	121.772	121.883	121.674	118.820	118.800	119.100			119.226	
Offset	9.546	7.935	5.280	3.000	1.250		1.250	3.000	5.870	8.325	11.365		13.660	

XSection at Ch.2750m



FL	121.907													
DHFL	120.407													
EGL	119.101	118.737	118.702	118.722	121.071	121.200	117.935	117.855	118.122				118.217	
Offset	10.886	9.073	6.000	3.000	1.250	1.250	3.000	7.330	9.239		14.000			

XSection at Ch.3000m



FL	121.749													
DHFL	120.249													
EGL	118.970	118.573	118.514	118.714	121.045	121.184	121.068	118.435	118.255	118.389			118.502	
Offset	12.881	9.201	6.700	4.000	3.000	1.750	1.750	3.000	6.400	8.036	12.841	14.000		

XSection at Ch.3750m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (RHS SLOPE), 2:1 SLOPE IN RIVER SIDE(LHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

NOTE:

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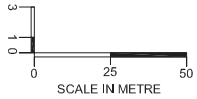
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

J.E./A.E.

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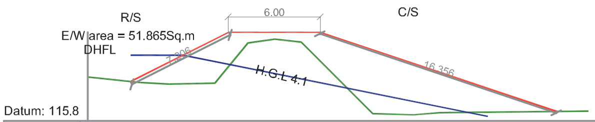
GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

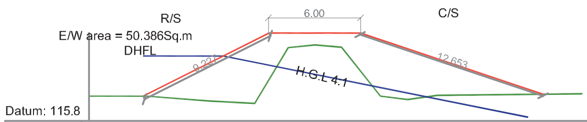
Crosssections of Embankment
Embankment: E30, CONSTRUCTION OF AN EMBANKMENT ALONG THE R/B OF BURIDEHING RIVER FROM DEOCHALI HILL TO TIPLING GHAT PH-II (FAKIAL GRAZING)

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



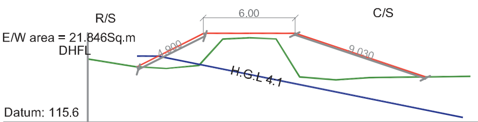
FL	121.591
DHFL	120.091
EGL	118.666, 118.302, 118.196, 118.256, 120.885, 121.135, 120.949, 116.275, 116.195, 116.328, 116.444
Offset	12.259, 9.445, 8.819, 6.910, 6.000, 3.910, 3.000, 1.750, 1.750, 3.000, 6.450, 9.150, 10.786, 14.000, 18.517

XSection at Ch.4500m



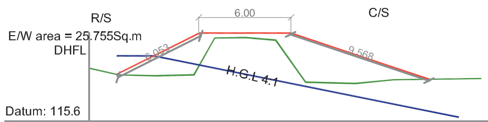
FL	121.538
DHFL	120.038
EGL	117.412, 117.412, 117.089, 116.945, 120.586, 120.753, 120.614, 117.411, 117.191, 117.458, 117.565
Offset	14.809, 11.253, 11.035, 6.770, 6.000, 3.939, 3.000, 1.750, 1.750, 3.000, 4.310, 6.110, 8.019, 14.000, 15.004

XSection at Ch.4750m



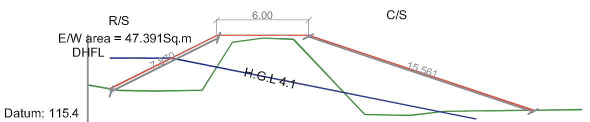
FL	121.438
DHFL	119.938
EGL	119.756, 119.252, 119.135, 119.337, 121.052, 121.140, 121.066, 118.574, 118.392, 118.532, 118.622
Offset	10.614, 7.476, 7.383, 6.001, 5.450, 3.313, 3.000, 1.750, 1.750, 3.000, 3.303, 5.673, 7.841, 11.566, 13.999

XSection at Ch.5225m



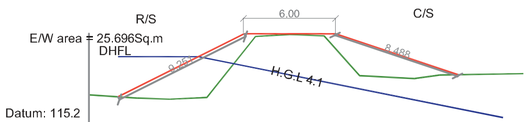
FL	121.369
DHFL	119.869
EGL	119.063, 118.623, 118.576, 118.636, 121.035, 121.075, 120.895, 118.152, 118.073, 118.308, 118.394
Offset	10.227, 8.414, 8.238, 6.000, 5.783, 3.353, 3.000, 2.000, 2.000, 3.000, 3.964, 7.249, 9.690, 12.077, 14.000

XSection at Ch.5550m



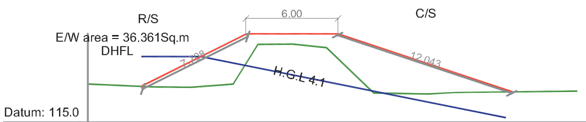
FL	121.169
DHFL	119.669
EGL	117.902, 117.545, 117.498, 117.558, 120.700, 120.978, 120.908, 115.964, 115.904, 116.171, 116.290
Offset	11.491, 10.039, 9.435, 6.980, 6.000, 3.980, 3.000, 2.000, 2.000, 3.000, 6.700, 9.700, 11.882, 14.000, 17.762

XSection at Ch.6500m



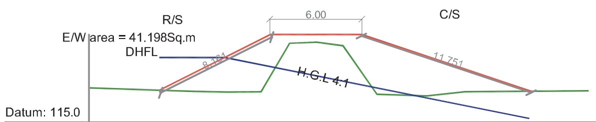
FL	121.063
DHFL	119.563
EGL	117.056, 116.841, 116.771, 116.891, 120.880, 121.019, 120.926, 118.306, 118.126, 118.360, 118.448
Offset	13.190, 11.274, 10.032, 7.850, 6.000, 5.450, 3.000, 2.250, 2.250, 3.000, 4.590, 8.190, 9.826, 11.052, 14.000

XSection at Ch.7000m



FL	120.800
DHFL	119.300
EGL	117.495, 117.318, 117.294, 117.494, 120.101, 120.129, 119.896, 116.906, 116.846, 116.946, 117.042
Offset	13.402, 9.894, 9.025, 6.570, 6.000, 3.870, 3.000, 2.250, 2.250, 3.000, 5.350, 8.950, 10.586, 14.000, 14.425

XSection at Ch.8250m



FL	120.747
DHFL	119.247
EGL	117.241, 117.023, 116.976, 116.996, 120.173, 120.256, 120.023, 116.830, 116.730, 116.997, 117.060
Offset	14.921, 10.299, 7.892, 6.000, 5.710, 3.610, 3.000, 1.750, 1.750, 3.000, 3.990, 7.290, 9.745, 14.000, 14.148

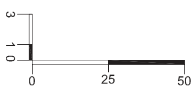
XSection at Ch.8500m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (RHS SLOPE), 2:1 SLOPE IN RIVER SIDE(LHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

NOTE:

1. SECTIONAL AREA INDICATED IS AREA BETWEEN EXISTING GROUND AND FINISHED GROUND PROFILES ONLY AND NOT INCLUSIVE OF AREA FOR GRABBING
2. GRABBING TO BE CONSIDERED FOR ENTIRE WIDTH BETWEEN TOES OF FINISHED PROFILE ON EXISTING GROUND FOR A DEPTH OF 0.15M
3. RIVER SIDE SLOPE OF EMBANKMENT = 2H:1V, COUNTRY SIDE SLOPE OF EMBANKMENT = 3H:1V
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



SCALE IN METRE

GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

Crosssections of Embankment
Embankment: E30, CONSTRUCTION OF AN EMBANKMENT ALONG THE R/B OF BURIDEHING RIVER FROM DEOCHALI HILL TO TIPLING GHAT PH-II (FAKIAL GRAZING)

CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

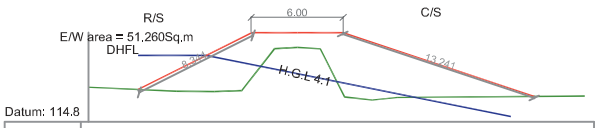
CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

J.E./A.E.

A.E.E.

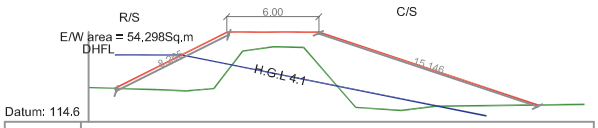
E.E.

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



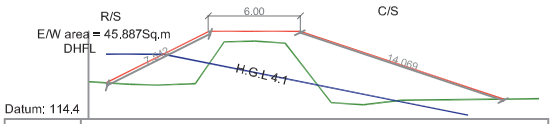
FL	120.642													
DHFL	119.142													
EGL	117.059		116.794	116.783	116.843	119.589	119.672	119.579	116.422	116.222	116.389			116.479
Offset	13.706	10.463	7.915	6.000	3.660	3.000	1.500	1.500	3.000	4.900	6.536		14.000	15.562

XSection at Ch.9000m



FL	120.483													
DHFL	118.983													
EGL	116.839		116.703	116.621	116.781	119.236	119.514	119.468	115.540	115.340	115.607			115.733
Offset	12.108	10.392	7.599	6.000	3.890	3.000	2.000	2.000	3.000	5.420	8.420	10.602	14.000	17.369

XSection at Ch.9750m



FL	120.150													
DHFL	118.650													
EGL	116.848	116.681	116.622	116.722	119.458	119.514	119.375	115.471	115.331	115.631				115.725
Offset	10.894	9.746	8.199	6.000	3.890	3.000	2.000	2.000	3.000	5.040	7.140	9.595	14.000	16.347

XSection at Ch.11330m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (RHS SLOPE), 2:1 SLOPE IN RIVER SIDE(LHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

NOTE:

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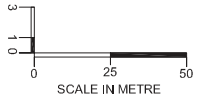
2. GRABBING TO BE CONSIDERED FOR ENTIRE WIDTH BETWEEN TOES OF FINISHED PROFILE ON EXISTING GROUND FOR A DEPTH OF 0.15M
3. RIVER SIDE SLOPE OF EMBANKMENT = 2H:1V, COUNTRY SIDE SLOPE OF EMBANKMENT = 3H:1V
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

J.E./A.E.

A.E.E.

E.E.

GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

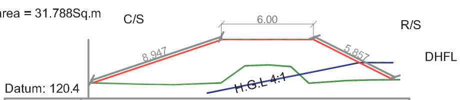
OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

Crosssections of Embankment
Embankment: E30, CONSTRUCTION OF AN EMBANKMENT ALONG THE R/B OF BURIDEHING RIVER FROM DEOCHALI HILL TO TIPLING GHAT PH-II (FAKIAL GRAZING)

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH

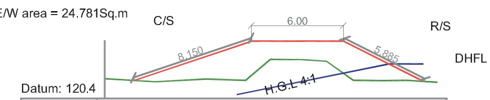
E/W area = 31.788Sq.m



FL	124.240
DHFL	122.740
EGL	121.417 121.319 121.297 121.417 122.524 122.590 122.482 121.400 121.554 121.602 121.626
Offset	11.758 11.489 7.696 6.060 3.999 3.060 3.000 1.500 1.500 2.700 3.000 5.100 6.001 6.589 8.239

XSection at Ch.0m

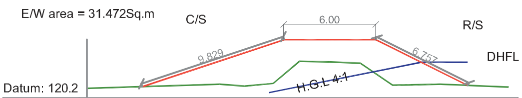
E/W area = 24.781Sq.m



FL	124.148
DHFL	122.648
EGL	121.687 121.485 121.662 121.586 122.949 122.935 122.933 122.832 121.586 121.561 121.586 121.460
Offset	12.665 10.732 9.312 6.057 4.000 3.414 3.000 1.799 0.210 1.891 3.000 3.659 5.738 6.000 7.109 8.264

XSection at Ch.250m

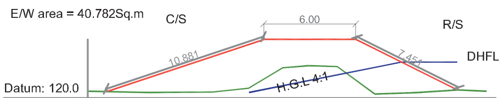
E/W area = 31.472Sq.m



FL	124.057
DHFL	122.557
EGL	120.835 121.108 120.987 121.168 122.621 122.591 122.500 121.047 121.077 121.108 120.926
Offset	15.960 12.325 7.236 5.600 4.000 3.721 3.000 2.000 2.000 3.000 4.114 5.330 6.000 7.239 9.043

XSection at Ch.500m

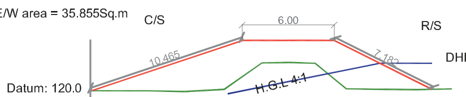
E/W area = 40.782Sq.m



FL	123.873
DHFL	122.373
EGL	120.458 120.374 120.402 120.653 121.996 122.136 122.131 122.080 120.262 120.374 120.541 120.458
Offset	14.592 13.323 10.490 6.361 4.025 4.000 3.000 1.797 0.168 1.788 3.000 4.260 6.000 7.140 9.664 9.888

XSection at Ch.1000m

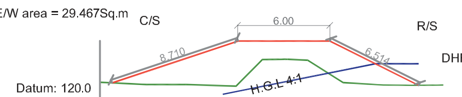
E/W area = 35.855Sq.m



FL	123.782
DHFL	122.282
EGL	120.473 120.473 120.422 120.575 122.301 122.340 122.280 120.600 120.575 120.549 120.600
Offset	13.012 12.928 9.486 6.798 4.209 4.000 3.000 1.750 1.750 3.000 3.805 6.000 6.248 8.490 9.424

XSection at Ch.1250m

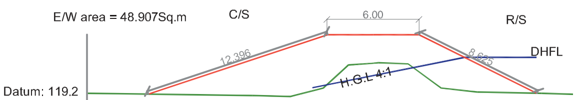
E/W area = 29.467Sq.m



FL	123.745
DHFL	122.245
EGL	121.029 120.879 120.879 120.780 122.524 122.545 122.549 122.475 121.004 120.854 120.830 120.854
Offset	12.053 11.263 9.002 6.435 4.000 3.141 3.000 1.422 0.249 1.557 3.000 3.882 6.000 6.522 8.653 8.828

XSection at Ch.1350m

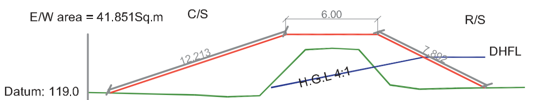
E/W area = 48.907Sq.m



FL	123.598
DHFL	122.098
EGL	119.731 119.589 119.524 120.078 121.598 121.716 121.739 121.671 120.078 119.808 119.735 119.662
Offset	18.787 14.760 7.947 5.435 4.000 3.283 3.000 1.627 0.316 2.278 3.000 4.452 6.000 6.823 10.715 11.048

XSection at Ch.1750m

E/W area = 41.851Sq.m



FL	123.415
DHFL	121.915
EGL	119.585 119.429 119.296 119.376 122.408 122.500 122.416 120.073 119.807 119.863 119.918
Offset	16.015 14.586 9.032 6.850 4.750 4.000 3.000 1.750 1.750 3.000 3.820 5.761 6.000 8.195 10.059

XSection at Ch.2250m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (LHS SLOPE), 2:1 SLOPE IN RIVER SIDE(RHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

NOTE:

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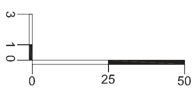
3. RIVER SIDE SLOPE OF EMBANKMENT = 2H:1V, COUNTRY SIDE SLOPE OF EMBANKMENT = 3H:1V
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



SCALE IN METRE

GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

Crosssections of Embankment
Embankment: E31, T/DYKE ALONG THE L/B OF BURIDEHING RIVER FROM JOYPUR TO NAHARKATIA

CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

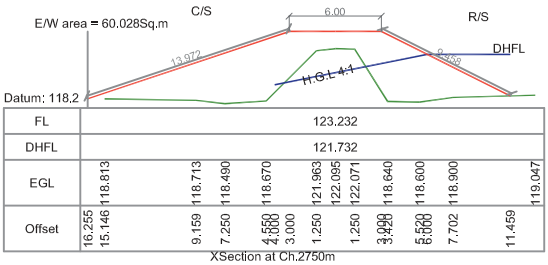
CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

J.E./A.E.

A.E.E.

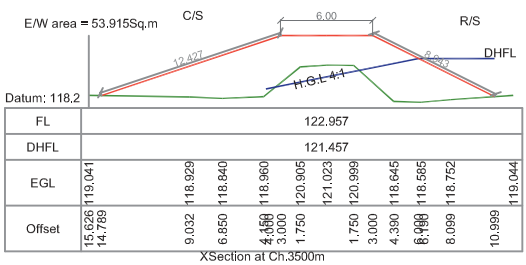
E.E.

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



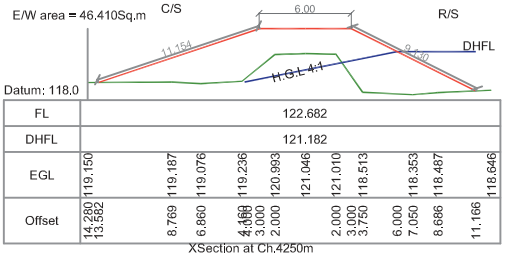
FL	123.232													
DHFL	121.732													
EGL	118.813		118.713	118.490	118.670	121.963	122.095	122.071	118.640	118.600	118.900		119.047	
Offset	16.255	15.146	9.159	7.250	4.550	3.000	1.250	1.250	3.000	5.500	7.702		11.459	

XSection at Ch.2750m



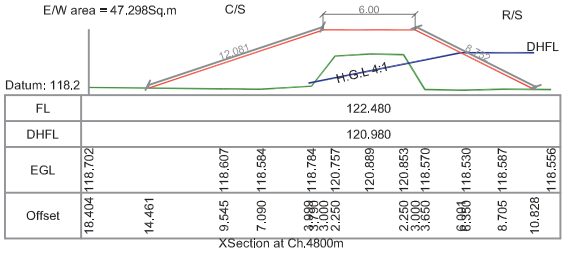
FL	122.957													
DHFL	121.457													
EGL	119.041		118.929	118.840	118.960	120.905	121.023	120.999	118.645	118.585	118.752		119.044	
Offset	15.626	14.789	9.032	6.850	4.150	3.000	1.750	1.750	3.000	4.390	8.099		10.999	

XSection at Ch.3500m



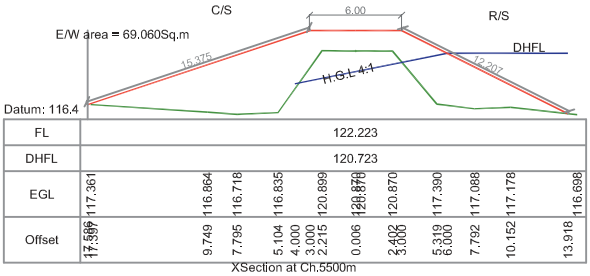
FL	122.682													
DHFL	121.182													
EGL	119.150		119.187	119.076	119.236	120.993	121.046	121.010	118.513	118.353	118.487		118.646	
Offset	14.280	13.582	8.769	6.860	4.150	3.000	2.000	2.000	3.000	3.750	6.000	7.050	8.686	11.166

XSection at Ch.4250m



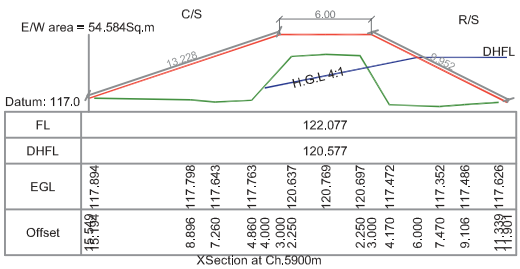
FL	122.480													
DHFL	120.980													
EGL	118.702		118.607	118.584	118.784	120.757	120.889	120.853	118.570	118.530	118.587		118.556	
Offset	18.404	14.461	9.545	7.090	4.900	3.000	2.250	2.250	3.000	3.650	6.081	8.355	8.705	10.828

XSection at Ch.4800m



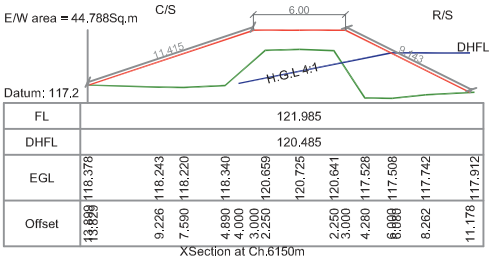
FL	122.223													
DHFL	120.723													
EGL	117.361		116.864	116.718	116.835	120.899	120.870	120.870	117.390	117.088	117.178		116.698	
Offset	17.586	17.357	9.749	7.795	5.104	4.000	3.000	2.215	0.006	3.000	6.000	7.792	10.152	13.918

XSection at Ch.5500m



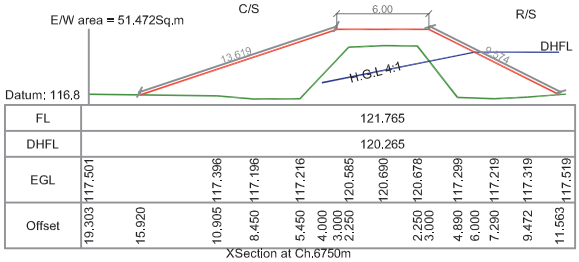
FL	122.077													
DHFL	120.577													
EGL	117.894		117.798	117.643	117.763	120.637	120.769	120.697	117.472		117.352	117.486	117.626	
Offset	15.541	15.797	8.896	7.260	4.860	4.000	3.000	2.250	2.250	3.000	4.170	6.000	7.470	9.106	11.339	11.901

XSection at Ch.5900m



FL	121.985													
DHFL	120.485													
EGL	118.378		118.243	118.220	118.340	120.659	120.725	120.641	117.528	117.508	117.742		117.912	
Offset	13.899	13.923	9.226	7.590	4.890	4.000	3.000	2.250	3.000	4.280	6.000	8.262	11.178	

XSection at Ch.6150m



FL	121.765													
DHFL	120.265													
EGL	117.501		117.396	117.196	117.216	120.585	120.690	120.678	117.299	117.219	117.319		117.519	
Offset	19.303	15.920	10.905	8.450	5.450	4.000	3.000	2.250	2.250	3.000	4.890	6.000	7.290	9.472	11.563	

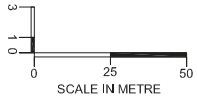
XSection at Ch.6750m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (LHS SLOPE), 2:1 SLOPE IN RIVER SIDE(RHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

NOTE:

1. SECTIONAL AREA INDICATED IS AREA BETWEEN EXISTING GROUND AND FINISHED GROUND PROFILES ONLY AND NOT INCLUSIVE OF AREA FOR GRABBING
2. GRABBING TO BE CONSIDERED FOR ENTIRE WIDTH BETWEEN TOES OF FINISHED PROFILE ON EXISTING GROUND FOR A DEPTH OF 0.15M
3. RIVER SIDE SLOPE OF EMBANKMENT = 2H:1V, COUNTRY SIDE SLOPE OF EMBANKMENT = 3H:1V
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

J.E./A.E.

A.E.E.

E.E.

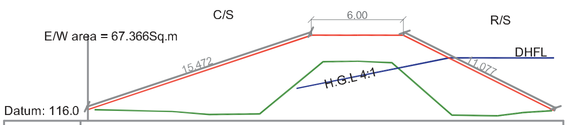
GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

Crosssections of Embankment
Embankment: E31, T/DYKE ALONG THE L/B OF BURIDEHING RIVER FROM JOYPUR TO NAHARKATIA

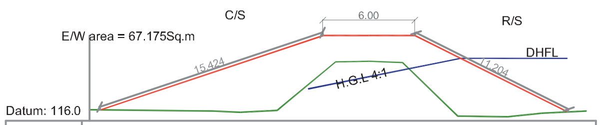
EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



FL	121.628
DHFL	120.128

Offset	EGL
17.678 / 17.254	116.736
12.165	116.616
9.710	116.416
6.410	116.456
4.000	
3.000	
2.250	119.884
	119.910
2.250	119.814
3.000	
6.000 / 6.210	116.379
9.210	116.339
10.846	116.539
12.773 / 12.908	116.674

XSection at Ch.7125m



FL	121.600
DHFL	120.100

Offset	EGL
18.349 / 17.633	116.730
10.349	116.651
8.440	116.562
6.040	116.682
3.999	
3.000	
2.200	119.871
	119.910
2.200	119.826
3.000	
5.830 / 6.001	116.310
9.130	116.270
11.312	116.503
13.021	
	116.654

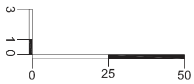
XSection at Ch.7200m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (LHS SLOPE), 2:1 SLOPE IN RIVER SIDE(RHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

NOTE:

1. SECTIONAL AREA INDICATED IS AREA BETWEEN EXISTING GROUND AND FINISHED GROUND PROFILES ONLY AND NOT INCLUSIVE OF AREA FOR GRABBING
2. GRABBING TO BE CONSIDERED FOR ENTIRE WIDTH BETWEEN TOES OF FINISHED PROFILE ON EXISTING GROUND FOR A DEPTH OF 0.15M
3. RIVER SIDE SLOPE OF EMBANKMENT = 2H:1V, COUNTRY SIDE SLOPE OF EMBANKMENT = 3H:1V
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



SCALE IN METRE

GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

Crosssections of Embankment
Embankment: E31, T/DYKE ALONG THE L/B OF BURIDEHING RIVER FROM JOYPUR TO NAHARKATIA

CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

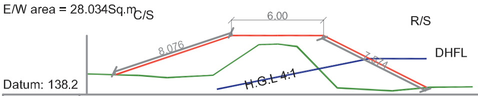
CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

J.E./A.E.

A.E.E.

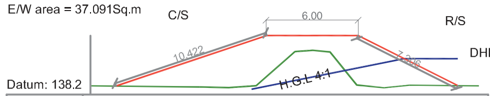
E.E.

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



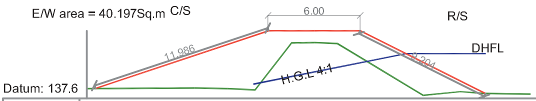
FL	142.040
DHFL	140.540
EGL	139.533 139.448 139.292 139.452 141.448 141.485 141.335 138.617 138.437 138.671 138.695
Offset	12.521 10.662 9.159 7.250 4.250 4.000 3.000 1.250 1.250 3.000 3.910 6.000 7.510 9.775 9.965

XSection at Ch.0m



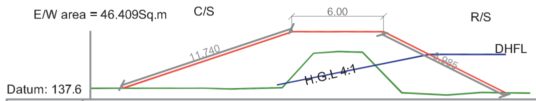
FL	142.040
DHFL	140.540
EGL	138.761 138.690 138.645 138.765 140.993 141.072 140.976 138.814 138.634 138.801 138.761
Offset	14.571 12.887 7.389 5.480 4.000 3.000 1.150 1.150 3.000 4.710 6.000 9.535

XSection at Ch.500m



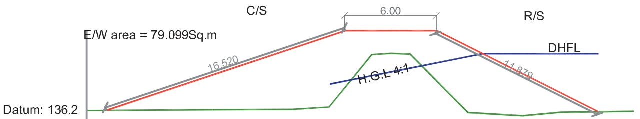
FL	142.040
DHFL	140.540
EGL	138.247 138.279 138.240 138.165 141.249 141.262 141.202 137.807 138.043 137.925 137.890
Offset	14.928 14.371 7.882 5.700 4.000 3.000 1.500 1.500 3.000 6.000 7.140 9.540 11.176 11.232

XSection at Ch.1600m



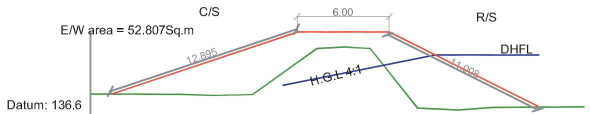
FL	142.040
DHFL	140.540
EGL	138.326 138.331 138.286 138.366 140.618 140.736 140.688 138.035 137.875 138.041 138.004
Offset	16.265 14.137 8.879 6.970 4.000 3.000 1.600 1.600 3.000 4.200 6.000 7.200 9.382 11.036

XSection at Ch.2250m



FL	142.040
DHFL	140.540
EGL	136.809 136.855 136.879 137.039 140.482 140.561 140.513 136.676 136.456 136.689 136.763
Offset	19.960 18.672 11.697 6.450 4.000 3.000 1.250 1.250 3.000 5.050 6.001 8.650 11.105 13.625

XSection at Ch.2500m



FL	142.040
DHFL	140.540
EGL	137.968 137.946 137.880 137.940 140.960 141.052 140.968 137.046 136.926 137.093 137.140
Offset	16.606 15.233 10.805 8.350 5.950 4.000 3.000 1.750 1.750 3.000 4.870 6.000 7.570 9.752 12.846

XSection at Ch.2700m

LEGEND

EXISTING GROUND PROFILE

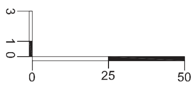
FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (LHS SLOPE), 2:1 SLOPE IN RIVER SIDE(RHS SLOPE)

DHFL LINE (HORIZONTAL PORTION)

H.G. LINE (INCLINED PORTION)

NOTE:

1. SECTIONAL AREA INDICATED IS AREA BETWEEN EXISTING GROUND AND FINISHED GROUND PROFILES ONLY AND NOT INCLUSIVE OF AREA FOR GRABBING
2. GRABBING TO BE CONSIDERED FOR ENTIRE WIDTH BETWEEN TOES OF FINISHED PROFILE ON EXISTING GROUND FOR A DEPTH OF 0.15M
3. RIVER SIDE SLOPE OF EMBANKMENT = 2H:1V, COUNTRY SIDE SLOPE OF EMBANKMENT = 3H:1V
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



SCALE IN METRE

GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

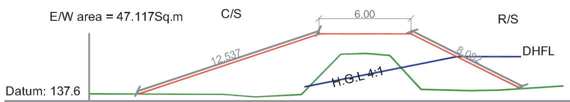
Crosssections of Embankment
Embankment: E39, T/DYKE ALONG THE L/B OF BURIDEHING RIVER FROM CHIPPIBASTI TO MOLONG GAON

CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

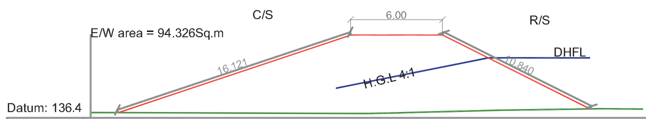
J.E./A.E.　　A.E.E.　　E.E.

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



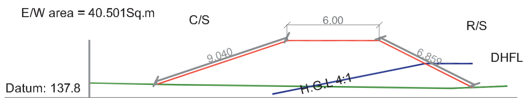
FL	142.030
DHFL	140.530
EGL	138.080, 138.041, 137.875, 138.035, 140.688, 140.736, 140.618, 138.366, 138.286, 138.331, 138.591
Offset	18.135, 14.894, 9.382, 7.200, 4.200, 4.001, 3.000, 1.600, 1.600, 3.000, 3.670, 5.999, 6.970, 8.879, 10.228

XSection at Ch.0m



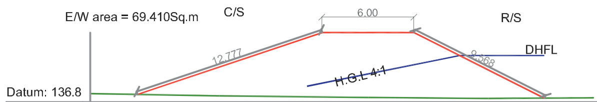
FL	141.829
DHFL	140.329
EGL	136.737, 136.676, 136.721, 136.879, 136.990, 136.964
Offset	20.094, 18.294, 4.000, 3.000, 1.831, 3.000, 6.000, 6.450, 12.595, 13.245

XSection at Ch.300m



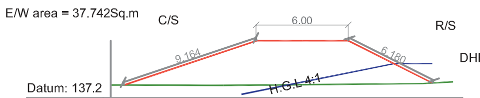
FL	141.560
DHFL	140.060
EGL	138.787, 138.671, 138.540, 138.437, 138.585
Offset	16.005, 11.576, 9.965, 4.000, 3.000, 3.000, 6.000, 7.768, 9.135

XSection at Ch.700m



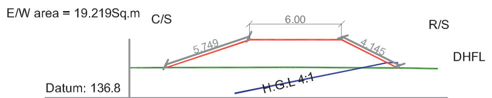
FL	141.342
DHFL	139.842
EGL	137.358, 137.205, 137.110, 137.034, 137.089
Offset	18.237, 15.121, 9.767, 4.000, 3.000, 3.000, 6.000, 7.884, 11.558

XSection at Ch.1025m



FL	140.954
DHFL	139.454
EGL	138.058, 138.045, 138.089, 138.156, 138.262
Offset	12.580, 11.694, 5.169, 4.000, 3.000, 3.000, 6.000, 7.882, 8.528

XSection at Ch.1602m



FL	140.620
DHFL	139.120
EGL	138.783, 138.801, 138.814, 138.807, 138.765, 138.734
Offset	10.907, 9.440, 8.454, 3.998, 3.000, 1.102, 3.000, 6.002, 6.708, 6.909

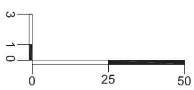
XSection at Ch.2100m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (LHS SLOPE), 2:1 SLOPE IN RIVER SIDE(RHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

NOTE:

1. SECTIONAL AREA INDICATED IS AREA BETWEEN EXISTING GROUND AND FINISHED GROUND PROFILES ONLY AND NOT INCLUSIVE OF AREA FOR GRABBING
2. GRABBING TO BE CONSIDERED FOR ENTIRE WIDTH BETWEEN TOES OF FINISHED PROFILE ON EXISTING GROUND FOR A DEPTH OF 0.15M
3. RIVER SIDE SLOPE OF EMBANKMENT = 2H:1V, COUNTRY SIDE SLOPE OF EMBANKMENT = 3H:1V
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



SCALE IN METRE

GOVT OF ASSAM

WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

Crosssections of Embankment
Embankment: E40, EXTENSION OF T/DYKE ALONG THE L/B OF BURIDEHING FROM CHIPPIBASTI TO MOLONG GAON

CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

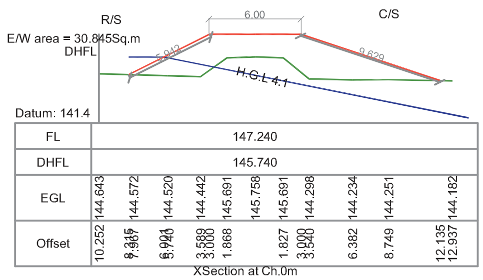
CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

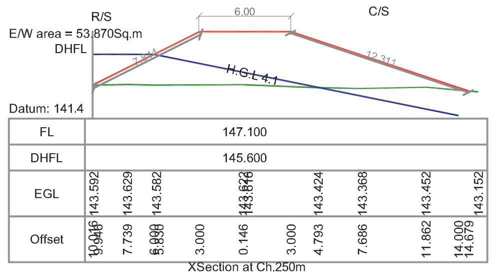
J.E./A.E.

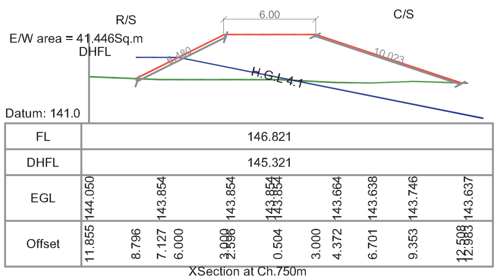
A.E.E.

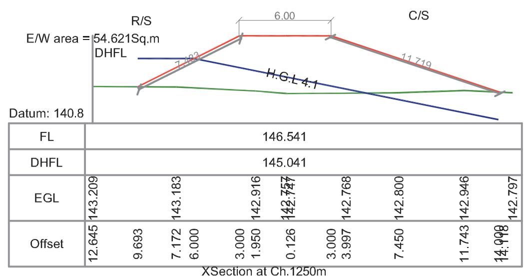
E.E.

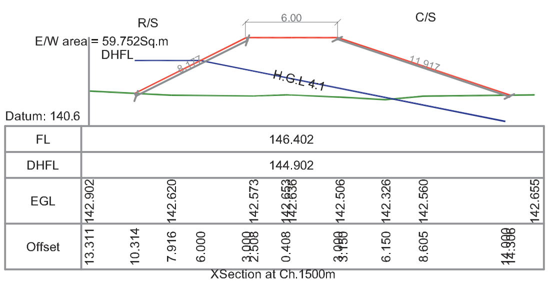
EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH

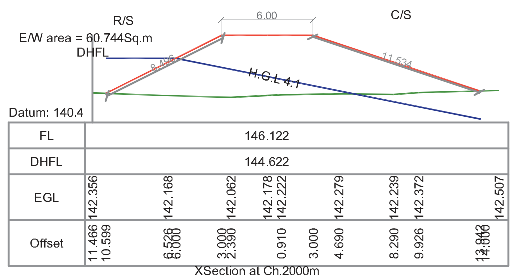


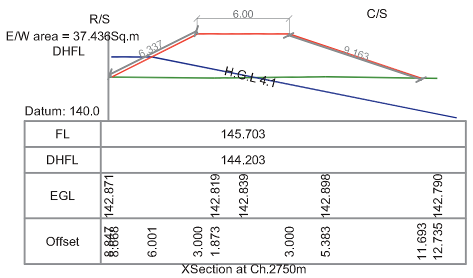


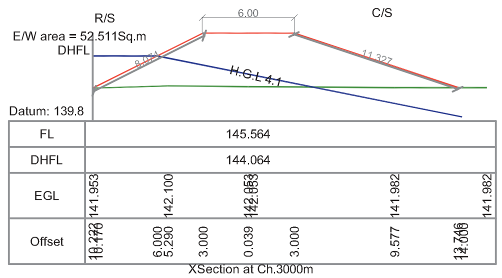










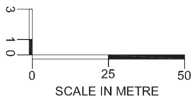


LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (RHS SLOPE), 2:1 SLOPE IN RIVER SIDE(LHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

NOTE:

1. SECTIONAL AREA INDICATED IS AREA BETWEEN EXISTING GROUND AND FINISHED GROUND PROFILES ONLY AND NOT INCLUSIVE OF AREA FOR GRABBING
2. GRABBING TO BE CONSIDERED FOR ENTIRE WIDTH BETWEEN TOES OF FINISHED PROFILE ON EXISTING GROUND FOR A DEPTH OF 0.15M
3. RIVER SIDE SLOPE OF EMBANKMENT = 2H:1V, COUNTRY SIDE SLOPE OF EMBANKMENT = 3H:1V
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

Crosssections of Embankment
Embankment: E41, PROPOSED EMBANKMENT AT MAICHANG PATHAR

CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

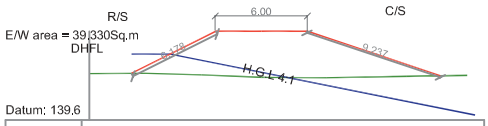
CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

J.E./A.E.

A.E.E.

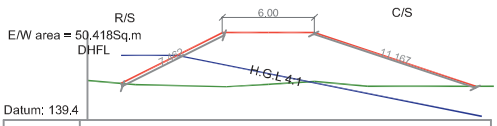
E.E.

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



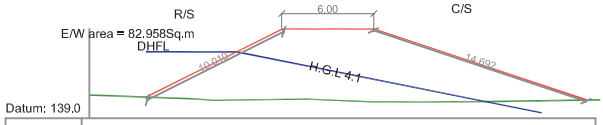
FL	145.424								
DHFL	143.924								
EGL	142.647	142.665	142.562	142.411	142.393	142.375	142.462	142.534	
Offset	11.310	8.526	7.649	6.000	3.930	3.000	0.477	3.000	4.240	9.476	11.763	13.488

XSection at Ch.3250m



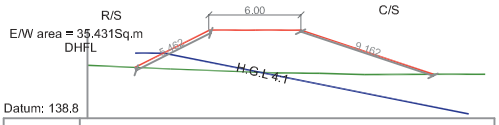
FL	145.144								
DHFL	143.644								
EGL	141.988	141.728	141.584	141.749	141.930	141.613	141.613		
Offset	11.885	9.674	8.706	6.000	3.000	3.000	3.000	6.513	12.787	13.594

XSection at Ch.3750m



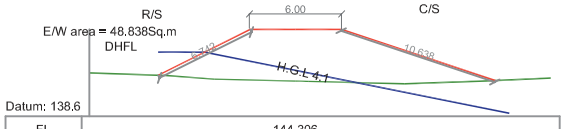
FL	144.865									
DHFL	143.365									
EGL	140.523	140.291	140.185	140.265	140.206	140.079	140.079	140.114	140.219	
Offset	15.673	11.953	9.259	7.350	6.000	3.000	1.382	3.000	7.135	11.187	14.000	16.938

XSection at Ch.4250m



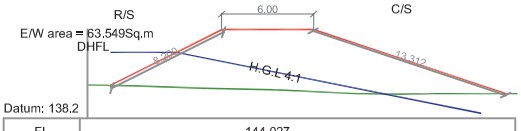
FL	144.586									
DHFL	143.086									
EGL	142.287	142.124	142.042	141.832	141.776	141.753	141.673	141.689	141.689	
Offset	11.008	7.885	5.980	3.000	1.478	3.000	4.200	7.200	11.572	14.001

XSection at Ch.4750m



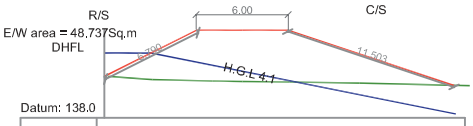
FL	144.306								
DHFL	142.806								
EGL	141.439	141.276	141.037	140.911	140.891	140.731	140.918	141.107	
Offset	13.555	9.030	8.355	6.000	5.350	3.000	0.847	3.000	7.150	12.556	13.092	14.000

XSection at Ch.5250m



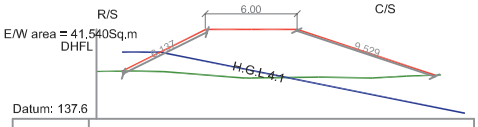
FL	144.027								
DHFL	142.527								
EGL	140.387	140.335	140.171	140.079	140.062	139.817	139.789	139.817	139.817	
Offset	11.843	10.334	8.895	6.000	3.947	3.000	0.710	3.000	5.791	8.886	10.818	13.358	15.629

XSection at Ch.5750m



FL	143.747							
DHFL	142.247							
EGL	140.711	140.510	140.410	140.384	140.343	140.276	140.109	
Offset	8.873	6.000	3.000	1.963	3.000	7.691	13.334	13.973

XSection at Ch.6250m



FL	143.468								
DHFL	141.968								
EGL	140.702	140.731	140.684	140.333	140.267	140.393	140.468		
Offset	10.175	8.483	6.981	3.000	0.487	3.000	4.390	7.928	10.172	12.040

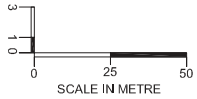
XSection at Ch.6750m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (RHS SLOPE), 2:1 SLOPE IN RIVER SIDE(LHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

NOTE:

1. SECTIONAL AREA INDICATED IS AREA BETWEEN EXISTING GROUND AND FINISHED GROUND PROFILES ONLY AND NOT INCLUSIVE OF AREA FOR GRABBING
2. GRABBING TO BE CONSIDERED FOR ENTIRE WIDTH BETWEEN TOES OF FINISHED PROFILE ON EXISTING GROUND FOR A DEPTH OF 0.15M
3. RIVER SIDE SLOPE OF EMBANKMENT = 2H:1V, COUNTRY SIDE SLOPE OF EMBANKMENT = 3H:1V
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



CERTIFIED THAT THE SURVEY WAS DONE BY ME AND CORRECT TO THE BEST OF MY KNOWLEDGE

CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

J.E./A.E.

A.E.E.

E.E.

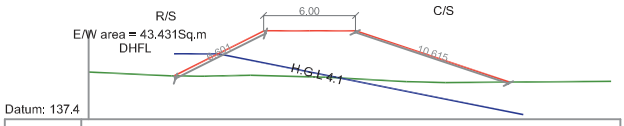
GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

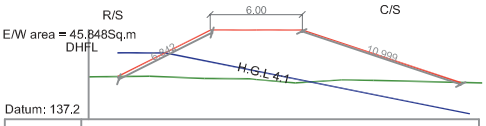
Crosssections of Embankment
Embankment: E41, PROPOSED EMBANKMENT AT MAICHANG PATHAR

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH



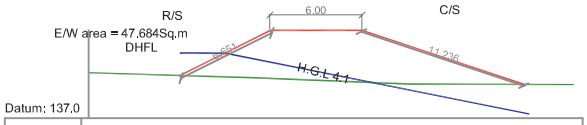
FL	143.189												
DHFL	141.689												
EGL	140.482	140.239	140.215	140.275	140.173	140.146	139.857	139.801					139.883
Offset	14.505	8.972	8.904	6.890	6.000	3.890	3.000	1.015	3.000	6.329	8.909	13.070	14.000

XSection at Ch.7250m



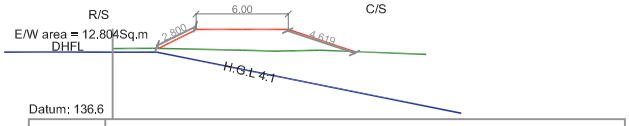
FL	143.049												
DHFL	141.549												
EGL	139.973		140.007		139.873	139.839	139.795	139.571	139.772	139.739		139.571	
Offset	11.008	9.120	7.020	6.000	3.421	3.000	0.502	2.545	3.000	5.561	7.668	11.527	13.435

XSection at Ch.7500m



FL	142.769							
DHFL	141.269							
EGL	139.979			139.647	139.483		139.241	139.205
Offset	14.920	8.949	6.001	4.173	3.000	3.000	6.178	13.659

XSection at Ch.8000m



FL	142.490												
DHFL	140.990												
EGL	141.225	141.247			141.116	141.066	141.126		141.006			140.855	
Offset	8.510	5.924	5.564	3.000		2.273	3.000	4.485	5.064	7.382	7.944	12.057	

XSection at Ch.8500m

LEGEND

- EXISTING GROUND PROFILE
- FINISHED PROFILE OF EMBANKMENT, TOP WIDTH = 6M, 3:1 SLOPE ON COUNTRY SIDE (RHS SLOPE), 2:1 SLOPE IN RIVER SIDE(LHS SLOPE)
- DHFL LINE (HORIZONTAL PORTION)
- H.G. LINE (INCLINED PORTION)

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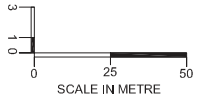
3. RIVER SIDE SLOPE OF EMBANKMENT = 2H:1V, COUNTRY SIDE SLOPE OF EMBANKMENT = 3H:1V
4. FREEBOARD ABOVE D.H.F.L. = 1.5M



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CERTIFIED THAT THE SURVEY HAVE BEEN CHECKED AT RANDOM AND FOUND CORRECT

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GOVT OF ASSAM
WATER RESOURCES DEPARTMENT

OFFICE OF THE EXECUTIVE ENGINEER
DIBRUGARH W.R. DIVISION , DIBRUGARH

NAME OF PROJECT: INTEGRATED WATER RESOURCES MANAGEMENT OF BURIDEHING BASIN

Crosssections of Embankment
Embankment: E41, PROPOSED EMBANKMENT AT MAICHANG PATHAR

EXECUTIVE ENGINEER
DIBRUGARH W R DIVISION
DIBRUGARH

CHAPTER – 13

Annexures

CHAPTER- 13

Annexures for Rate

ANNEXURE-A

सत्यमेव जयते

भारत सरकार

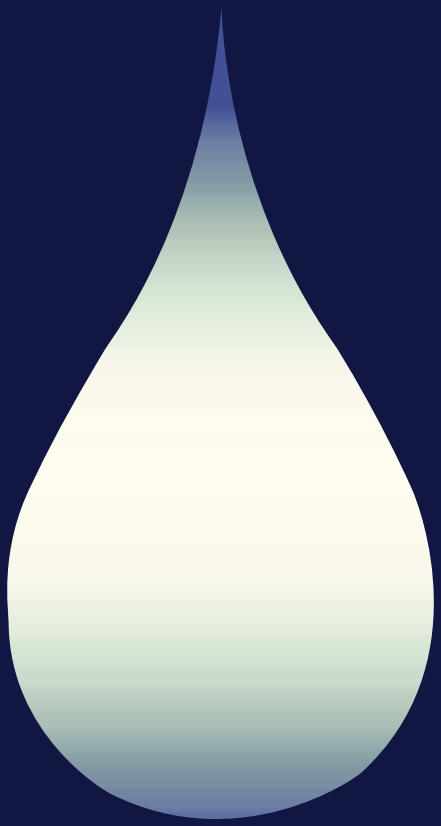
Government of India

जल संसाधन मंत्रालय

Ministry of Water Resources

केन्द्रीय जल आयोग

Central Water Commission



Schedule of Rates - 2012

Code No.	Description	Unit	Rate Rs.
3.2.6	**River cross section survey** and preparation of maps in requisite scales to supply them in both soft and hard formats with four copies complete, including cost of manpower, labour, surveying instruments, camp equipage, transportation, etc, as per directions of engineer-in-charge.		
3.2.6.1	**By wading in very shallow reaches**	Each cross section	
3.2.6.1.1	River span up to 100 m		6,000
3.2.6.1.2	River span from 101 to 1000 m	-do-	8,000
3.2.6.1.3	River span beyond 1000 m	-do-	10,000
3.2.6.2	**By boat in moderate depths**		
3.2.6.2.1	River span up to 100 m	-do-	8,000
3.2.6.2.2	River span from 101 to 1000 m	-do-	10,000
3.2.6.2.3	River span beyond 1000 m	-do-	12,000
3.2.6.3	**By motor launch in deep reaches**		
3.2.6.3.1	River span up to 100 m	-do-	12,000
3.2.6.3.2	River span from 101 to 1000 m	-do-	14,000
3.2.6.3.3	River span beyond 1000 m	-do-	16,000
3.2.7	**Longitudinal river survey** and preparation of maps in requisite scales to supply them in both soft and hard formats with four copies complete, including cost of manpower, labour, surveying instruments, camp equipage, transportation, etc, as per directions of engineer-in-charge.		
3.2.7.1	**By wading in very shallow reaches**		
3.2.7.1.1	Up to 10 km	--	20,000
3.2.7.1.2	Beyond 10 km	Km	600
3.2.7.2	**By boat in moderate depth**		
3.2.7.2.1	Up to 10 km	--	20,000
3.2.7.2.2	Beyond 10 km	Km	600
3.2.7.3	**By motor launch in deep reaches**		
3.2.7.3.1	Up to 10 km	--	40,000
3.2.7.3.2	Beyond 10 km	Km	1,000
3.2.8	**Hydrographic survey** to depict river/reservoir bed profile and preparation of maps in requisite scales to supply them in both soft and hard formats with four copies complete, including cost of manpower, labour, surveying instruments, camp equipage, transportation, etc, as per directions of engineer-in-charge.		
3.2.8.1	At 20 m grid interval	Sq km	20,000
3.2.8.2	At 10 m grid interval	Sq km	40,000
3.2.8.3	At 5 m grid interval	Sq km	80,000
3.2.9	**Inspection of hydraulic structures under water** by remotely operated camera excluding traveling allowance for technical officers	Per Visit	2,20,000

भारत सरकार
GOVERNMENT OF INDIA | वाणिज्य एवं उद्योग मंत्रालय
MINISTRY OF COMMERCE & INDUSTRY

हिंदी संस्करण

आर्थिक सलाहकार का कार्यालय
OFFICE OF THE ECONOMIC ADVISER
DEPARTMENT FOR PROMOTION OF INDUSTRY AND INTERNAL TRADE

Wholesale Price Index (WPI)

Yearly Wholesale Price Index
Name of Commodity : ALL COMMODITIES
Type : Group Item
Weight : 100
Base Year : 2011-12 = 100

Calendar Year	Index	Financial Year	Index
2020	121.8	**2020-21**	123.4
2019	121.2	**2019-20**	121.8
2018	118.9	**2018-19**	119.8
2017	114.1	**2017-18**	114.9
2016	110.3	**2016-17**	111.6
2015	110.3	**2015-16**	109.7
2014	114.8	**2014-15**	113.9
2013	111.1	**2013-14**	112.5
2012		**2012-13**	106.9

1. Figure 0 may be treated as index for particular item not-available.

O/o The Chief Engineer
Water Resources Department
Chandmari, Guwahati-03
(cewrd.assam@yahoo.co.in)

অসম চৰকাৰ

GOVERNMENT OF ASSAM

মুখ্য অভিযন্তাৰ কাৰ্য্যালয়
জলসম্পদ বিভাগ
চান্দমাৰী, গুৱাহাটী-০৩

No: WR(ED)Tech/7728/2021/10 Date: 08.11.2021

CIRCULAR

In pursuance of the meeting of the Committee for revision of Schedule of Rate of Water Resources Department held on 28.10.2021 and in partial revision of the existing SoR of WRD for 2018-19, the rates of following items have been finalised for the year 2021-22. The rates shall be utilised in preparing the estimates under all Head of account with immediate effect and the following rates will be incorporated in the final SoR of WRD for 2021-22, which is under process of revision.

Sl. No.	Item of work	Unit	Rate
1.	Medium jungles: Clearing medium jungles and trees upto 15 cm. girth including cutting, uprooting roots and stumps, removing them from the site of the work, etc. complete as directed. (When 30% to 60 % of the area is covered by shrubs, trees etc.)	Sqm	13.12
2.	Felling trees including uprooting roots and stumps upto 50 cm. below ground, cutting into pieces and removing the same from the site of work as directed. Trees above 0.50m and upto 1m girth:	Each	414.78
3.	Cutting bamboo, uprooting roots & stumps including removing them from the site of work, etc. complete as directed.	Sqm	509.84
4.	Earth work in embankment by truck carriage in ordinary/normal soil excluding sandy and rocky soil free from roots & vegetation and filling in uniform layers not exceeding 25 cm thick including ploughing or roughening or benching the seats, removing all debries, breaking clods up to 4cm cube, dressing as per design section including payment of forest royalty if any, etc. complete as directed. (10% deduction will be made from the section measured quantities of the completed and compacted on account of shrinkage) For initial lead beyond ½ Km and upto 4Km and for all lifts	Cum	335.86
5.	Earth work in embankment by truck carriage in ordinary/normal soil excluding sandy and rocky soil free from roots & vegetation and stacking in regular measurable stacks at suitable places including clearing debries, breaking clods up to 4 cm cube, payment of forest royalty if any, etc. (12.50 % deduction will be made from measured quantities on account of shrinkage) For initial Lead beyond 1/2 Km and upto 4.00 km for all lifts.	Cum	363.58
6.	Earth work in excavation of drainage channel to the proper grade and slopes as required including depositing the excavated debris/soil to a safe distance of minimum 50 m distance as directed. Normal Soil	Cum	199.03
7.	Earthwork in bank trimming to the designed section /slope including removing the soils at a minimum distance of 30 m, complete as directed.	Cum	167.74
8.	Earthwork in grabbing the seat of the embankment upto 0.3 m depth and depositing the soils outside the country side toe of the proposed structures , etc. complete as directed.	Cum	161.55

Sl. No.	Item of work	Unit	Rate
9.	Spreading of earth stacks over the crest and slope of embankment and places as directed in uniform layer of 22 cm. thick including breaking clods, dressing, ramming etc. complete where necessary including dressing the embankment before complete as directed.	Cum	102.80
10.	Turfing with grass sods of largest possible rectangles of 12 cm. minimum thickness placed closely including dressing earth pegging with Jati bamboo split, watering till the grass grows for a lead up to 90m and all lifts.	Sqm	28.83
11.	Carriage of Geo Bags of size 1.03 x 0.70 m including loading & unloading, Stacking, etc. complete and including hire charge of truck with driver and handyman cost of POL etc. completed as directed.	Bag/ Km	0.016
12.	Carriage of 300 gsm Geo sheet of including loading & unloading, Stacking cost of P.O.L., etc. complete and including hire charge of truck with driver and handyman completed as directed.	Sqm/ Km	0.014
13.	Collection and supply of River silt by truck carriage free from debries and other foreign material payment of forest royalty if any, etc.(For initial Lead beyond 1/2 Km and upto 4.00 km for all lifts.)	Cum	346.16
14.	Construction of temporary shed of two roof with mud plinth of minimum plinth height, with Bhaluka bamboo post 1.5 m apart driven at atleast 0.75 m below ground and height above plinth 2.5m. Split Jatti bamboo/tarza wall, 10 cm thick thatched roofing over bamboo rua frame placing at 0.15 m clear apart fitted with bamboo kamies for binding doors and windows with Bamboo Chattai strengthening with Bamboo frame binding with wire etc. complete as directed. (Using Bhaluka Bamboo at the rate of 6.00 nos/ Rm & Jati Bamboo at the rate of 61.00nos / Rm)	Sqm	1797.24
15.	Filling and laying of Geo bags of size 1.03m X 0.70m excluding excavation of specified sand from flood plain or adjacent chars within a distance of 90m of the work site, filling geo bags with sand having minimum weighing 126.00 Kg and minimum volume 0.084 cum after filling , double locking chain stitching the mouth of the filled bags with polypropylene thread by power driven double needle double stitched machine, stacking the same in batches of 100, carrying the same to the dumping site including all handling charges and local carriage within a distance of 150m and laying properly as directed. (sand, Geo Bag and Polypropylene thread will be supplied by the department free of cost) a) Without Boat b) With Boat	Bag	a) 40.58 b) 71.40
16.	Filling and laying of Geo bags of size 1.03m X 0.70m excluding excavation of specified silt from flood plain or adjacent chars within a distance of 90m of the work site, filling geo bags with silt having minimum weighing 126.00 Kg and minimum volume 0.084 cum after filling ,double locking chain stitching the mouth of the filled bags with polypropylene thread by power driven double needle double stitched machine, stacking the same in batches of 100, carrying the same to the dumping site including all handling charges and local carriage within a distance of 150m and laying properly as directed. (Geo Bag and Polypropylene thread will be	Bag	

Sl. No.	Item of work	Unit	Rate
	properly as directed. (Geo Bag and Polypropylene thread will be supplied by the department free of cost) a) Without Boat b) With Boat		a) 40.58 b) 71.40
17.	Filling and laying in cage with silt filled Geo bags of size 1.03m X 0.70m excluding excavation of specified silt from flood plain or adjacent chars within a distance of 90m of the work site, filling geo bags with silt having minimum weighing 126.00 Kg and minimum volume 0.084 cum after filling ,double locking chain stitching the mouth of the filled bags with polypropylene thread by power driven double needle machine, stacking the same in batches of 100, carrying the same to the dumping site including all handling charges and local carriage within a distance of 150m and laying properly. in cages made of wire netting sheets of size 2.57x1.66m of 8G galvanized wire making the cage from 2 nos. of wire netting sheet by tying the projected wires complete as directed. (Geo Bag , Wire Netting Sheets and Polypropylene thread will be supplied by the department free of cost) a) Without Boat b) With Boat	Bag	a) 48.62 b) 63.02
18.	Labour charge for laying Geo fabric sheet as filter bellow pitching including anchoring and complete as directed.	Sqm	37.39
19.	Labour charge for laying of soling stone, brick bats, broken stone metal, sand gravel etc. on approach road including ramming dressing the seat and local carriage of materials up to a distance of 60 m complete as directed	Cum	159.74
20.	Collection and supply of brick bats 20-40 mm size to work site including loading, unloading transportation and stacking in measurable stacks including sale tax, compensation if any, etc. complete as directed	Cum	2523.73
21.	Supply of Pre stressed Cement Concrete (PSC) Porcupine members of size 0.10m X 0.10mX 3.00m with M-30 grade of cement concrete conforming to IS 1343 : 2012 using super-plasticizer @1.2 lit/bag of cement with graded broken coarse aggregates up to 20mm size down conforming to IS 10262:2009 & IS 456:2000 and reinforced with 4 Nos. of 4 mm dia high tensile steel wire cable with necessary cover and 4mm high tensile stirrups at 250mm C/C, in conformity with IS-6403:R2002 and stressed to required strength not exceeding 9.18 N/mm, holes of 16 mm dia at 50 cm inside from both ends in the same face and in either face of post another 2 Nos. of holes of size 16 mm dia at 65mm inside from both ends including properly curing for 21 (twenty one) days and carriage of porcupine members from factory to the stack yard within a distance up to 20 Km including loading, unloading & stacking complete as directed. (Including forest royalty and all taxes as admissible)	Members	784.71
22.	Local carriage of porcupine members by Diesel truck of 10MT capacity including loading at stack yard and unloading and stacking at river bank for all lift complete as directed.	Members/ Km	1.68

Sl. No.	Item of work	Unit	Rate
23.	Labour charge for launching of PSC Porcupine including carriage of PSC porcupine members of size 0.10m × 0.10m × 3.00m from the stack yard to the place of launching ,erection of the Porcupine with 6 (six) members properly, supply & fitting/fixing with 12 mm dia 25 Cm long M.S. Nuts and bolts and launching the porcupine properly as directed. (Lead up to 150 m) a) Without Boat b) With Boat		a) 661.94 b) 954.34

Sd/-
Chief Engineer
Water Resources Department,
Chandmari, Guwahati-3

Memo No: WR(ED)Tech/7728/2021/10-A **Date: 08.11.2021**

Copy to :

1) The PS to the Hon'ble Minister. Water Resources Department, Govt. of Assam, for favour of kind information
2) The PA to the Additional Chief Secretary to the Govt. of Assam, Water Resources Department, Dispur, Ghy-6 for favour of kind information.
3) The Secretary to the Govt. of Assam, water Resources Department, Dispur, Ghy-6 for favour of kind information.
4) The Additional Chief Engineer, All W.R. Zone for information.
5) The Superintending Engineer, All W.R. Circle for information.
6) The Executive Engineer, All W.R. Division for information and necessary action.

Director Design
Water Resources Department,
Chandmari, Guwahati-3

O/o The Chief Engineer
Water Resources Department
Chandmari, Guwahati-03
(cewrd.assam@yahoo.co.in)

মুখ্য অভিযন্তাৰ কাৰ্যালয়
জলসম্পদ বিভাগ
চান্দমাৰী, গুৱাহাটী-০৩

No: - WR(ED)Tech/7728/2021/11

Date: - 29.11.2021

CIRCULAR

The rates of the Geo – textile items and PVC coated netting box have been finalized after evaluation of quotation for fixation of rates vide NIQ: - CE/CC/WR/NIQ/2021 – 22/1030/1, Dated: - 03/11/2021 and these approved rates as given below shall be utilized to prepare the estimates with immediate effect under all Heads of Accounts. These approved rates *(Inclusive of all taxes)* will be incorporated in the final Schedule of Rate of Water Resources Department, Assam, for 2021 – 22, which is under process of revision.

Sl. no.	*Item of work*	*Unit*	*Rate*
1.	Supply of Geo-textile bags of type-A (1.03 × 0.70M) inner to inner made of Geo-textile non-woven fabric sheets of 400 GSM manufactured from 100% virgin Polypropylene (PP) fibre with minimum properties as per ***IS 16653 : 2017*** (i) Wide Tensile strength(MD) ≥20KN/m & Wide Tensile strength(CD) ≥20 KN/m (ii) Elongation (MD) ≥50% & Elongation (CD) ≥50% (iii) Abrasion ≥95% (iv)Trapezoidal Tear Strength (MD) ≥450N & Trapezoidal Tear Strength (CD) ≥450N (v)CBR Puncture strength≥4000N (vi)Permittivity≥1.10s-1 (vii)Permeability≥40l/m2/sec (viii)AOS ≤75micron (ix) UV Resistance @500 hours retained Tensile strength (MD) & (CD) ≥ 80% (x)Mass≥400 gm/m² (xi) Thickness at 2 KPa≥3 mm (xii) Seam strength ≥80 % of actual fabric strength. *Stitching of Bags should be Ring Spun Yarn stitches with 2500-3000 denier double line chain stitch with overlap with stitches along the edge @ minimum 15 stitches per 100mm. (Bags are to be supplied of 100 numbers in a bundle, properly packed with each bag having proper tag with name of Manufacturer, Batch Number, the GSM and type of polymer encrypted and stitched on top corner and each bag is to be marked with "WRD Govt of ASSAM" to be printed distinctly. Test Certificate from approved NABL accredited and ISO (Certified Laboratory should invariably be submitted against each batch of material)*	Each	₹ 198.75
2.	Supply of Geo-textile bags of type-A (1.03 × 0.70M) inner to inner made of Geo-textile non-woven fabric sheets of 300 GSM manufactured from 100% virgin Polypropylene (PP) fibre with minimum properties as per ***IS 16653 : 2017*** (i)Wide Tensile strength(MD) ≥15KN/m & Wide Tensile strength (CD) ≥15KN/m(ii) Elongation (MD) ≥50% & Elongation (CD)	Each	₹ 162.00

Sl. no.	Item of work	Unit	Rate
	≥50%(iii)Abrasion ≥95%(iv)Trapezoidal Tear Strength (MD) ≥340N & Trapezoidal Tear Strength (CD) ≥340N(v)CBR Puncture strength ≥3000N(vi)Permittivity ≥1.25s-1(vii)Permeability ≥60l/m2/sec(viii)AOS ≤75micron(ix)UV Resistance @ 500 hours retained Tensile strength (MD)&(CD) ≥80%(x) Mass ≥300 gm/m²(xi) Thickness at 2 KPa ≥3 mm(xii) Seam strength ≥80 % of actual fabric strength. *Stitching of Bags should be Ring Spun Yarn stitches with 2500-3000denier double line chain stitch with overlap with stitches along the edge @ minimum 15stitches per 100 mm. (Bags are to be supplied of 100 numbers in a bundle, properly packed with each bag having proper tag with name of Manufacturer, Batch Number, the GSM and type of polymer encrypted and stitched on top corner and each bag is to be marked with "WRD Govt of ASSAM" to be printed distinctly. Test Certificate from approved NABL accredited and ISO Certified Laboratory should invariably be submitted against each batch of material).*		
3.	Supply of Geo Bags Type-B (Size 2.00m × 1.50m inner to inner) (Pillow Type) made of composite layers of Polypropylene (PP) fibre as per ***IS 16653 : 2017 for Nonwoven and IS 16654 : 2017 for Woven***: ***Woven Geo-textile for the outer cover (300gsm):*** The woven geo textile is woven with multifilament woven fabric manufactured from ultra violet stabilized polypropylene. Geo-textile used to manufacture geo-textile bags should have high mechanical properties for enhanced durability along with enhanced puncture, abrasion and U.V. resistance characteristics. Geo-textile should be inert to biological degradation and resistant to naturally encountered chemicals, alkalis, and acids. ***Properties*** (i) Tensile strength (MD) ≥80 KN/m & Tensile strength (CD) ≥70 KN/m (ii) Elongation (MD) ≤25% & Elongation (CD) ≤25% (iii) Abrasion ≥75% (iv) Trapezoidal Tear Strength (MD) ≥1500N & Trapezoidal Tear Strength (CD) ≥1300N (v) CBR Puncture strength ≥900N (vi) Permeability ≥18 l/m2/sec (vii) AOS ≤250 micron (viii) UV Resistance @500 hours retained Tensile strength (MD) & (CD) ≥80% (ix) Mass ≥300 gm/m² (x) Seam strength ≥50 % of actual fabric strength. ***Non-Woven Geo-textile for the inner layer (300gsm):*** It is needle punched non-woven geo-textile made of 100% polypropylene staple fibres which are formed into a random network for dimensional stability. It should resist UV degradation, rotting and alkalis. ***Properties*** (i) Wide Tensile strength (MD) ≥15 KN/m & Wide Tensile strength (CD) ≥15 KN/m	Each	₹ 1,250.00

Sl. no.	Item of work	Unit	Rate
	(ii) Elongation (MD) ≥50% & Elongation (CD) ≥50% (iii) Abrasion ≥95% (iv) Trapezoidal Tear Strength (MD) ≥340 N & Trapezoidal Tear Strength (CD) ≥340 N (v) CBR Puncture strength ≥3000 N (vi) Permittivity ≥1.25 s-1 (vii) Permeability ≥60 l/m2/sec (viii) AOS ≤75 micron (ix) UV Resistance @ 500 hours retained Tensile strength (MD) & (CD) ≥80% (x) Mass ≥300 gm/m² (xi) Thickness at 2 KPa ≥3 mm (xii) Seam strength ≥80 % of actual fabric strength. *Stitching of Bags should be Ring Spun Yarn stitches with 2500-3000 denier double line chain stitch with overlap with stitches along the edge. (Bags are to be supplied of 15 numbers in a bundle, properly packed with each bag having proper tag with name of Manufacturer, Batch Number, the GSM and type of polymer encrypted and stitched on top corner and each bag is to be marked with "WRD Govt of ASSAM" to be printed distinctly. Test Certificate from approved NABL accredited and ISO Certified Laboratoryshould invariably be submitted against each batch of material)*		
4.	Supply of Geo-textile Bags Pillow Type of Size 1.20m × 1.00m, inner dimension made of composite layers of geo-textile as per specifications below: ***Woven Geo-textile for the outer cover.*** The woven geo textile is woven with UV resistant slit film tape fibre with MAVR values of the following properties. Geo-textile used to manufacture geo-textile bags should have high mechanical properties for enhanced durability along with enhanced puncture, abrasion and U.V. resistance characteristics. Geo-textile should be inert to biological degradation and resistant to naturally encountered chemicals, alkalis, and acids. • Weight (ISO-9864/ASTMD 5261) ≥250 Gms/Sqm. • Tensile strength(MD) (ASTMD 4595) ≥35 kN/m • Tensile strength(CD) (ASTMD 4595) ≥35 kN/m • Tensile Elongation (ASTMD 4595) ≥5% & ≤30% • Grab Elongation (ASTMD 4632) ≥5% & ≤30% • Tensile strength (ASTMD 4632) = 1.5 KN • UV resistance (ASTMD 4355) = 70%/500 hrs ***Non woven Geo-textile for the inner layer.*** It is needle punched non woven geo-textile made of 100% polypropylene staple fibers which are formed into a random network for dimensional stability. It should resist UV degradation, rotting and alkalis. • Weight (ISO-9864/ASTMD 5261) ≥300 Gms/Sqm. • Tensile strength(MD) (ASTMD 4595) ≥12 kN/m • Tensile strength(CD) (ASTMD 4595) ≥12 kN/m • Tensile Elongation (ASTMD 4595) ≥5% & ≤30%	Each	₹ 504.00

Sl. no.	Item of work	Unit	Rate
	• Grab Elongation (ASTMD 4632) ≥5% & ≤30% • Tensile strength (ASTMD 4632) = 1.5 KN • UV resistance (ASTMD 4355) = 70%/500 hrs *(Bags are to be supplied of 100 numbers or part in a bundle, properly packed with name of Manufacturer and Batch Number is to be marked on each bag with "WRD Govt of ASSAM" to be printed on each bag and mentioning properly the GSM and type of Geo bag polymer. Test Certificate from approved NABL accredited and ISO Certified Laboratory should invariably be submitted against each batch of material)*		
5.	Supply of non-woven Geo-textile fabric sheets of 300 GSM manufactured from 100% virgin Polypropylene (PP) fibre with minimum properties as per **IS 16653: 2017** (i) Wide Tensile strength (MD) ≥15KN/m & Wide Tensile strength (CD) ≥15KN/m (ii) Elongation (MD) ≥50% & Elongation (CD) ≥50% (iii) Abrasion ≥95% (iv) Trapezoidal Tear Strength (MD) ≥340 N & Trapezoidal Tear Strength (CD) ≥340 N (v) CBR Puncture strength ≥3000 N (vi) Permittivity ≥1.25 s-1 (vii)Permeability ≥60l/m2/sec (viii)AOS ≤75micron (ix)UV Resistance @500 hours retained Tensile strength (MD) & (CD) ≥80% (x) Mass ≥ 300gm/m² (xi)Thickness at 2KPa ≥3mm *(Each Roll of Geo Fabric Sheet should be supplied in properly packed Bundles and should be marked with the Name of Manufacturer, Batch Number & its dimensions clearly on each roll with "WRD Govt of ASSAM" to be printed on it and mentioning properly the GSM and type of polymer and Test Certificate from approved NABL accredited and ISO Certified Laboratory should invariably be submitted against each batch of material).*	Cum	₹ 100.00
6.	Supply of G-Mat in double layered composite Geo-textile fabricated to form a three dimensional mattresses , the upper layer of the mattress being heavily woven with polypropylene fabric needle-punched with a mixture of U.V. stabilized green fibres and cut tape yarns with **Upper Layer Properties as** 1) Mass per unit area > 650 GSM, 2) Tensile Strength (MD) ≥ 70kN/m, 3) Tensile Strength (CD) ≥ 70kN/m 4) Tensile Elongation (MD) ≤ 25%, 5) Tensile Elongation (CD) ≤ 25%, 6) Pore Size < 0.35 mm, 7) Abrasion Resistance ≥ 35 %, 8) UV @ 500 hours ≥ 90% 9) Resistance to Oxidation @ 100°C for 28 days) ≥ 80% and **Lower Layer Properties as** 1) Mass per unit area > 400 GSM,	Each	₹ 1,550.00

Sl. no.	Item of work	Unit	Rate
	2) Tensile Strength (MD) ≥ 110kN/m, 3) Tensile Strength (CD) ≥ 90kN/m 4) Tensile Elongation (MD) ≤ 25%, 5) Tensile Elongation(CD) ≤ 25%, 6) Pore Size < 0.35mm, 7) Abrasion Resistance ≥ 60 %, 8) UV @ 500 hours ≥ 90% 9) Resistance to Oxidation @ 100°C for 28 days) ≥ 80% The sewing thread should be of high tenacity polyester and parallel stitches are to be continued positioned at 350 mm apart with a stitch length not exceeding 5 mm. *(Each roll of G-Mat should be supplied in properly packed bundle and should be marked with the Name of Manufacturer & Batch Number & its dimensions clearly on each roll with "WRD Govt of ASSAM" to be printed on it and mentioning properly the GSM(for both upper and lower layer) and types of polymer(for both upper and lower layer) and Test Certificate from approved NABL accredited and ISO Certified Laboratory should invariably be submitted against each batch of material) (inclusive of Custom Duty)*		
7.	Supply of G-Mat in double layered composite Geo-textile fabricated to form a three dimensional mattresses , the upper layer of the mattress being heavily woven with polypropylene fabric needle-punched with a mixture of U.V. stabilized green fibres and cut tape yarns with **Upper Layer Properties as** 1) Mass per unit area > 650 GSM, 2) Tensile Strength (MD) ≥ 70kN/m, 3) Tensile Strength (CD) ≥ 70kN/m 4) Tensile Elongation (MD) ≤ 25%, 5) Tensile Elongation (CD) ≤ 25%, 6) Pore Size < 0.35 mm, 7) Abrasion Resistance ≥ 35 %, 8) UV @ 500 hours ≥ 90% 9) Resistance to Oxidation @ 100°C for 28 days) ≥ 80% and **Lower Layer Properties as** 1) Mass per unit area > 400 GSM, 2) Tensile Strength (MD) ≥ 110kN/m, 3) Tensile Strength (CD) ≥ 90kN/m 4) Tensile Elongation (MD) ≤ 25%, 5) Tensile Elongation(CD) ≤ 25%, 6) Pore Size < 0.35mm, 7) Abrasion Resistance ≥ 60 %, 8) UV @ 500 hours ≥ 90% 9) Resistance to Oxidation @ 100°C for 28 days) ≥ 80% The sewing thread should be of high tenacity polyester and parallel stitches are to be continued positioned at 350 mm apart with a stitch length not exceeding 5 mm *(Each roll of G-Mat should be supplied in properly packed bundle and should be marked with the Name of Manufacturer & Batch Number & its dimensions clearly on each roll with "WRD Govt of*	Each	₹ 1,200.00

Sl. no.	Item of work	Unit	Rate
	ASSAM" to be printed on it and mentioning properly the GSM(for both upper and lower layer) and types of polymer(for both upper and lower layer) and Test Certificate from approved NABL accredited and ISO Certified Laboratory should invariably be submitted against each batch of material) ***Without Custom duty***		
8.	Supply of geo-textile Tube (Mega containers) of fill height of 2.5m and 25m length made of geo-textile with minimum properties as mentioned below. i) Tensile strength of geo-textile materials > 200KN/m in both directions for woven geo-textiles ii) O95 (pore size) of the geo-textile materials <180microns. iii) Seam strength >70% of the material tensile strength. iv) Elongation of the material at the ultimate tensile strength should not be more than 20% v) CBR Brust Strength >10.5 vi) Abrasion resistance (BAW Rotating Drum) >75% of strength retained. vii) UV Resistance (ASTMD4355-500Hrs) >80% of strength retained. viii) The geo-textile mega containers must resist the pressure created by stacking the tubes in3:2:1 manner.	Each	₹ 138,284.60
9.	Supply of woven Geo-textile Tube (Mega containers) of filled height 0.9m made of geo-textile with minimum properties as mentioned below i) Tensile strength of geo-textile materials >65KN/m in both directions ii) O95 (Pore size) of the geo-textile materials < 180 microns, iii) Seam strength > 70% of the materials tensile strength, iv) Elongation of the material at the ultimate tensile strength should not be 65% for v) CBR Brust strength > 10.5, vi) Abrasion resistance (BAW Rotating Drum) > 75% of strength retained, vii) UV Resistance (ASTMD 4355-500 Hrs) > 80% of strength retained. (Including all taxes) (a) 10m Length	Each	₹ 17,579.24
10.	Supply of geo-textile Tube (Mega containers) with minimum properties as mentioned below • Polymer = PP • Tube Circumference= 4.3 / 8.6 / 12.9 / 14.2 / 16 / 17.2 / 21.6 +5% (m) • Fill Port (diameter)= 30 to 45 CM • Tensile Strength (MD) ≥175 KN/m • Tensile Strength (CD) ≥175 KN/m • Elongation – MD ≤ 25% • AOS ≤ 0.180 mm • Permittivity ≥ 0.40 S-1 Length =10/15/20/25/30 m	Each	
10.1.	***Tube Circumference = 4.3 (m)***	Each	₹ 29,561.23

Sl. no.	Item of work	Unit	Rate
10.1.a	Length =10m		
10.1.b	Length=15m	Each	₹ 43,609.92
10.1.c	Length =20m	Each	₹ 57,660.42
10.1.d	Length =25m	Each	₹ 75,304.19
10.1.e	Length =30m	Each	₹ 92,964.20
10.2.	***Tube Circumference = 8.6 (m)***	Each	₹ 54,837.62
10.2.a	Length =10m		
10.2.b	Length =15m	Each	₹ 79,401.54
10.2.c	Length =20m	Each	₹ 103,819.81
10.2.d	Length =25m	Each	₹ 131,917.18
10.2.e	Length =30m	Each	₹ 160,014.56
10.3.	***Tube Circumference = 12.9(m)***	Each	₹ 81,362.97
10.3.a	Length=10m		
10.3.b	Length =15m	Each	₹ 115,705.16
10.3.c	Length =20m	Each	₹ 150,037.26
10.3.d	Length =25m	Each	₹ 187,983.86
10.3.e	Length =30m	Each	₹ 225,922.67
10.4.	***Tube Circumference = 14.2(m)***	Each	₹ 91,617.17
10.4.a	Length =10m		
10.4.b	Length =15m	Each	₹ 129,534.63
10.4.c	Length =20m	Each	₹ 167,456.42
10.4.d	Length =25m	Each	₹ 208,797.44
10.4.e	Length =30m	Each	₹ 250,503.90
10.5.	***Tube Circumference = 16.0(m)***	Each	₹ 104,956.28
10.5.a	Length =10m		
10.5.b	Length =15m	Each	₹ 147,350.40
10.5.c	Length =20m	Each	₹ 189,744.52
10.5.d	Length =25m	Each	₹ 235,744.20
10.5.e	Length =30m	Each	₹ 281,743.88
11.	Supply of geo-textile Tube (Mega containers) with minimum properties as mentioned below • Polymer = PP • Tube Circumference= 4.3/8.6/12.9/14.2/16/17.2/21.6 +5% (m) • Fill Port (diameter)= 30 to 45 CM • Tensile Strength (MD) ≥ 100 KN/m • Tensile Strength (CD) ≥ 100 KN/m • Elongation – MD ≤ 25% • AOS ≤ 0.180 mm • Permittivity ≥ 0.40 S-1 • Length =10/15/20/25/30 m		
11.1.	***Tube Circumference = 4.3 (m)***	Each	₹ 25,000.00
11.1.a	Length =10m		
11.1.b	Length =15m	Each	₹ 35,000.00
11.1.c	Length =20m	Each	₹ 45,000.00
11.1.d	Length =25m	Each	₹ 55,000.00
11.1.e	Length =30m	Each	₹ 65,000.00
11.2.	***Tube Circumference = 8.6 (m)***	Each	₹ 44,000.00
11.2.a	Length =10m		
11.2.b	Length =15m	Each	₹ 60,000.00

Sl. no.	Item of work	Unit	Rate
11.2.c	Length =20m	Each	₹ 78,000.00
11.2.d	Length =25m	Each	₹ 97,000.00
11.2.e	Length =30m	Each	₹ 112,000.00
11.3.	***Tube Circumference = 12.9(m)***	Each	₹ 59,000.00
11.3.a	Length =10m		
11.3.b	Length =15m	Each	₹ 85,000.00
11.3.c	Length =20m	Each	₹ 110,000.00
11.3.d	Length =25m	Each	₹ 140,000.00
11.3.e	Length =30m	Each	₹ 165,000.00
11.4.	***Tube Circumference = 14.2(m)***	Each	₹ 65,000.00
11.4.a	Length =10m		
11.4.b	Length =15m	Each	₹ 95,000.00
11.4.c	Length =20m	Each	₹ 125,000.00
11.4.d	Length =25m	Each	₹ 155,000.00
11.4.e	Length =30m	Each	₹ 180,000.00
11.5.	***Tube Circumference = 16.0(m)***	Each	₹ 74,000.00
11.5.a	Length =10m		
11.5.b	Length =15m	Each	₹ 105,000.00
11.5.c	Length =20m	Each	₹ 135,000.00
11.5.d	Length =25m	Each	₹ 170,000.00
11.5.e	Length =30m	Each	₹ 205,000.00
12.	Supply of geo-textile Tube (Mega containers) with minimum properties as mentioned below • Polymer = Polyster • Tube Circumference= 4.3/8.6/12.9/14.2/16/17.2/21.6 +5% (m) • Fill Port (diameter)= 30 to 45 CM • Tensile Strength (MD) ≥175 KN/m • Tensile Strength (CD) ≥175 KN/m • Elongation – MD ≤ 15% • AOS ≤ 0 .25mm • Permeability ≥ 3x10-3 m/s • Length =10/15/20/25/30 m		
12.1.	***Tube Circumference = 4.3 (m)***	Each	₹ 29,903.04
12.1.a	Length =10m		
12.1.b	Length =15m	Each	₹ 44,106.04
12.1.c	Length =20m	Each	₹ 54,740.99
12.1.d	Length =25m	Each	₹ 76,091.64
12.1.e	Length =30m	Each	₹ 93,917.51
12.2.	***Tube Circumference = 8.6 (m)***	Each	₹ 55,362.58
12.2.a	Length =10m		
12.2.b	Length =15m	Each	₹ 80,151.50
12.2.c	Length =20m	Each	₹ 104,938.97
12.2.d	Length =25m	Each	₹ 133,330.56
12.2.e	Length =30m	Each	₹ 161,719.26
12.3.	***Tube Circumference = 12.9(m)***	Each	₹ 83,764.27
12.3.a	Length =10m		
12.3.b	Length =15m	Each	₹ 119,150.63
12.3.c	Length =20m	Each	₹ 154,535.55
12.3.d	Length =25m	Each	₹ 193,524.59

Sl. no.	Item of work	Unit	Rate
12.3.e	Length =30m	Each	₹ 232,512.18
12.4.	***Tube Circumference = 14.2(m)***		
12.4.a	Length =10m	Each	₹ 92,990.88
12.4.b	Length =15m	Each	₹ 131,575.38
12.4.c	Length =20m	Each	₹ 170,159.15
12.4.d	Length=25m	Each	₹ 212,352.80
12.4.e	Length =30m	Each	₹ 254,542.13
12.5.	***Tube Circumference = 16.0(m)***		
12.5.a	Length =10m	Each	₹ 106,356.33
12.5.b	Length =15m	Each	₹ 149,121.45
12.5.c	Length =20m	Each	₹ 192,134.29
12.5.d	Length =25m	Each	₹ 238,761.33
12.5.e	Length =30m	Each	₹ 285,389.82
13.	Supply of Rope Polypropylene (PP) Gabion of size 2m × 2m × 0.45 m having the following properties (i) Mesh opening size 150mmx150mm (ii) Rope Diameter of 9.0mm (iii) Linear Density of rope ≥ 65.1gm/m (iv) Tensile Strength ≥ 1900kg (v) Abrasion Resistance of rope after 1000 cycles ≥65% (vi) CBR Puncture Strength ≥ 7000kg.	Each	₹ 3,000.00
14.	Construction and supply of Wire -netting box of size 1.50 m × 1.50 m × 0.45 m made with mechanically woven, double twisted, hexagonal shaped wire mesh with wire made of low carbon, high ductile MS wire with heavy class of galvanization woth an additional layer of PVC coating with mesh type of 10 × 12 as per EN 10223 & ASTM A975, mesh wire of 2.70 mm (I.D) /3.70 mm (OD) tensile strength of 450-500/mm2, edge wire slevdge around it at least 2.5 times, lacing wire (zinc PVC coated) of 2.20mm (I.D) /3.20mm (OD), VC coating thickness of 0.50mm nominal, 0.38 mm minimum, Mesh opening size 150mm × 150mm and with average weight per unit being 12 kg with additional 3% of the weigth of box for lacing wire supplied separately, supporting the facing of the box with zinc coated steel wire of required length as directed, compling with ASTM and Europian norms.	Nos.	₹ 2,400.00

Sd/-
Chief Engineer
Water Resources Department,
Chandmari, Guwahati-3

Memo No: - WR(ED)Tech/7728/2021/11-A ***Date:*** - 29 11-2021

Copy to,

1) The PS to the Hon'ble Minister. Water Resources Department, Govt. of Assam, for favour of kind information
2) The PA to the Additional Chief Secretary to the Govt. of Assam, Water Resources Department, Dispur, Ghy-6 for favour of kind information.

3) The Secretary to the Govt. of Assam, water Resources Department, Dispur, Ghy-6 for favour of kind information.
4) The Additional Chief Engineer, All W.R. Zone for information.
5) The Superintending Engineer, All W.R. Circle for information.
6) The Executive Engineer, All W.R. Division for information and necessary action.

Director Design
Water Resources Department,
Chandmari, Guwahati-3

GOVT. OF ASSAM

WATER RESOURCES DEPARTMENT
CHANDMARI, GUWAHATI-3

SCHEDULE OF RATES FOR 2018-19

PREPARED BY

OFFICE OF THE CHIEF ENGINEER
WATER RESOURCES DEPARTMENT

COST OF MATERIALS

Sl No	Item	Unit	Rate
1	Matured Jati Bamboo 60mm to 75mm dia and 5m to 6m long	Each	Rs. 100.00
2	Matured Jati Bamboo 75mm to 100mm dia and 6 m to 7 m long	Each	Rs. 120.00
3	Matured Bholuka Bamboo 75mm to 100mm dia and 6m to 7m long	Each	Rs. 200.00
4	Matured Bholuka Bamboo 100mm to 150mm dia and 7m to 8m long	Each	Rs. 220.00
5	Barua Bamboo 75mm to 100mm dia 6m to 7m long	Each	Rs. 250.00
6	Bethua Bamboo 60 mm to 75 mm dia 8 m to 9 m long	Each	Rs. 220.00
7	Muli Bamboo top	Each	Rs. 35.00
8	Hard Jungle Wood post/pole, 100mm to 150mm dia	Each	Rs. 120.00
9	Tree branches (dia minimum 10cm) including Forest Royalty	Each	Rs. 250.00
10	Bushy tree with green foliage including delivery at site and payment of forest Royalty, if any		
(a)	1.00m to 2.00m girth and 6.00m to 7.00m long	Each	Rs. 1500.00
(b)	Above 2.00m to 3.00m girth and 8.00m to 9.00m long	Each	Rs. 3000.00
11	Bamboo tops with green foliage 2.50m to 3.00m long	Each	Rs. 60.00
12	Jute Sutli	Kg	Rs. 95.00
13	Coir Sutli	Kg	Rs. 90.00
14	Galvanized wire		
(a)	8 G. Wire	Kg	Rs. 96.00
(b)	12 G. Wire	Kg	Rs. 96.00
(c)	16 G. Wire	Kg	Rs. 100.00
(d)	18 G. Wire	Kg	Rs. 100.00
15	Wire Nails of different size	Kg	Rs. 75.00
16	Iron bolts and nuts of different size	Kg	Rs. 92.00
17	Iron Patent Nails of different size	Kg	Rs. 75.00
18	Serviceable empty cement bags	Each	Rs. 6.00
19	Timber Planks (2nd class)	cum	Rs. 22400.00
20	O.P.C. Cement	bag	Rs. 425.00
21	Coarse Sand	cum	Rs. 1725.00
22	Stone Aggregate 20mm down	cum	Rs. 1840.00
23	M.S.Rod	Kg	Rs. 104.00
24	Tor Steel (TMT Bar)	Kg	Rs. 85.00
25	4mm High tensile steel wires/strands	Kg	Rs. 96.00
26	Polythene Sheet (40 micron)	sqm	Rs. 14.00
27	P.V.C.Pipe, 20mm (Non I.S.I)	Rm	Rs. 30.00
28	P.V.C. Pipe 100 mm (Ordinary quality)	Rm	Rs. 150.00
29	Black Wire	Kg	Rs. 75.00

Note :

1. The rates includes cost of carriage of materials up to the departmental goodown /stack yard as directed by department including cost of loading and unloading at both ends and delivery at specified site as directed by the department.
2. The rates are exclusive of G.S.T, forest royalty and 1% labour cess except for item "Tree Branches" which is inclusive of Forest Royalty but excluding GST & Labour Cess.

Item No	Description	Unit	Rate
6.13	Supplying and launching of tree branches of 5 cm to 7.5cm dia. 2.5m to 3.5m long with green foliage tied in bundle (4nos. in a bundle) with coir sutli securely anchored to stout jati bamboo post or 10 to 15cm dia., hard jungles wood peg driven at least 1.00m below ground and 0.50m above at a minimum safe distance of 7.50m from the river bank with 8G. galvanized tying wire, weighing the bundle with two nos.of earth filled cement bags tied with coir sutli including payment of forest royalty, VAT, etc.complete as directed.(Using Jati Bamboo at the rate of 21.43 nos / Rm)	Bundle	Rs. 1432.63
6.14	Supplying and launching of tree branches of 7.5cm to 10cm dia. 3.5m to 4.0m long with green foliage tied in bundle 3nos in a bundle with coir sutli securedly anchored to stout jati bamboo post or 10 to 15cm dia.,hard jungles wood peg driven at least 1.00m below ground and 0.50m above at a minimum safe distance of 7.50m from the river bank with 8G. galvanized tying wire,weighing the bundle with two nos.of earth filled cement bags tied with coir sutli including payment of forest royalty, sale tax, etc.complete as directed.(Using Jati Bamboo at the rate of 21.43 nos / Rm)	Bundle	Rs. 1444.49
6.15	Supplying and launching bamboo tops of 3.0m to 3.50 m long with green foliage tied to the post of 'A' type of spur, lets fencing pallasiding etc., with 12G G.I.Wire etc. complete as directed.	Each	Rs. 83.48
6.16	Labour charge for laying and pitching earth filled cement bags including excavation and borrowing earth, breaking clods, filling in bags and supplying and stitching the mouth with jute sutli, etc. complete as directed. (cement bags will be supplied by the department free of cost).		
6.16.1	For borrowing earth from a distance up to 30m.	Each	Rs. 14.31
6.16.2	For borrowing earth from a distance beyond 30m. & up to 60m.	Each	Rs. 19.87
6.17	Labour for laying Gunny/Manure bags filled with sand / earth (as locally available) including stitching, laying, fixing in position as directed complete with supply of bag, sutli, etc. all complete.		
6.17.1	37 Kg. Capacity bags	Each	Rs. 61.43
6.17.2	75 Kg. Capacity bags	Each	Rs. 88.11
6.18	Supplying and Construction of bamboo cribs fabricated out in pyramid shape out of matured Bholuka bamboo 75mm to 100mm dia complete with all the branches and foliages with apex point at 7.00m from the bottom. At 0.60 m above the base of 1st row of horizontal stiffeners of size 4.00m x 3.00m are to be provided along with 2 Nos. of cross struts. A second set of horizontal stiffeners along with cross stiffeners similar to the 1st set are provided at height of 4.00m from the bottom. One set of cross bracing are to be provided in each face in between the 1st and 2nd horizontal stiffeners. All the stiffeners and inclined members are to be projected 0.30m beyond the longitudinal members. All the points are to be pinned with 22 cm long patent nails and protruding end is to be bent properly to have a firm grip and the apex point is also to be clustered with 8 G. wire. All the members are to be punched with chisel or auger. The cribs are to be weighted with 25 Nos. of earth filled polythene empty cement bags in all corners and middle of 1st and 2nd row of horizontal	-	

Item No	Description	Unit	Rate
	be submitted against each batch of material) FOR GUWAHATI		
11.05	Supply of geo-textile Tube (Mega containers) of fill height of 2.5m and 25m length made of geo-textile with minimum properties as mentioned below. i) Tensile strength of geo-textile materials > 200KN/m in both directions for woven geo-textiles ii) O95 (pore size) of the geo-textile materials < 180 microns. iii) Seam strength >70% of the material tensile strength. iv) Elongation of the material at the ultimate tensile strength should not be more than 20% v) CBR Brust Strength > 10.5 vi) Abrasion resistance (BAW Rotating Drum) >75% of strength retained. vii) UV Resistance (ASTMD 4355-500Hrs) > 80% of strength retained. viii) The geo-textile mega containers must resist the pressure created by stacking the tubes in 3:2:1 manner.	Each	Rs. 123701.90
11.06	Supply of woven Geo-textile Tube (Mega containers) of filled height 0.9m made of geo-textile with minimum properties as mentioned below i) Tensile strength of geo-textile materials >65KN/m in both directions ii) O95 (Pore size) of the geo-textile materials < 180 microns, iii) Seam strength > 70% of the materials tensile strength, iv) Elongation of the material at the ultimate tensile strength should not be 65% for v) CBR Brust strength > 10.5, vi) Abrasion resistance (BAW Rotating Drum) > 75% of strength retained, vii) UV Resistance (ASTMD 4355-500 Hrs) > 80% of strength retained. (Including all taxes) (a) 10m Length	Each	Rs. 71680.00
11.07	Supply of 9 mm dia. Rope polypropylene gabion of size 2m x 2m x 0.45 m having rope weight of 42 gm/m and mesh opening 150 mm x 150 mm with tensile strength of 1560 kg and having minimum weight of 6.20 kg per gabion. FOR GUWAHATI	Each	Rs. 3200.00
11.08	Supply of Sewing Thread/Yarn PPMF Stitching Thread (2000 Den. Kaplon) i/c payment of taxes.	RM	Rs. 0.11
11.09	Supply of Ordinary Labour inclusive of all taxes	Mandays	Rs. 320.29

Note:

1) Rates of Geotextile items are inclusive of all taxes and F.O.R. Guwahati

2) Thread required for double locking chain stitching of Geo Bag of Size 1.03m x 0.70 m — *Per bag* — *11 RM*

3) Thread required for double locking chain stitching of Geo Bag of Size 2.00 m x 1.50 m — *Per bag* — *22 RM*

GOVERNMENT OF ASSAM

PUBLIC WORKS ROADS DEPARTMENT

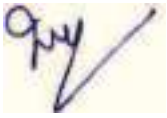
SCHEDULE OF RATES FOR
RURAL ROADS
FOR ALL DIVISIONS UNDER PWRD, ASSAM
FOR THE YEAR 2020-21

PUBLISHED BY:
COMMISSIONER & SPECIAL SECRETARY
PUBLIC WORKS ROADS DEPARTMENT, ASSAM
DISPUR, GUWAHATI-6

CERTIFICATE

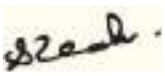
Certified that the Schedule of Rates for Rural Roads for all divisions under Public Works Roads Department (PWRD), Assam for the year 2020-2021 has been prepared on the basis of Standard Data Book for Analysis of Rates for Rural Roads published by Indian Road Congress on behalf of the National Rural Development Agency, Ministry of Rural Development (MORD), Govt. of India, New Delhi.

Chief Engineer, Roads
Public Works Roads Deptt, Assam
Chandmari, Guwahati - 781003



Chief Engineer, Border Roads
Public Works Roads Deptt, Assam
Chandmari, Guwahati - 781003

Chief Engineer, EAP
Public Works Roads Deptt, Assam
Fatasil Ambari, Guwahati - 781025



Addl. Chief Engineer, Western Zone
Public Works Roads Deptt, Assam
Chandmari, Guwahati - 781003

Addl. Chief Engineer, Mechanical
Public Works Roads Deptt, Assam
Chandmari, Guwahati - 781003

Item No.	Ref. of MoSRT&H	Descriptions	Unit	Rate
16.58		Labour for laying apron with man size boulders by hand packing the stone with dry stone masonry template crosswalls to ensure regular and orderly deposition of the full intended quality of stone in the apron including labour for buildung these walls about one meter thick and to the full height of the specific thockness of the apron at interval of 30 meters all along the length of the apron with local carriage of stone within 60 meters complete.	cum	1295.40
16.59		**Stone masonry work:** Uncoursed rubble masonry work in all retaining wall, wing wall, abutement etc. in cement mortar 1;6 withoutside face stone roughly hammer dressed and inside (earthen side) undressed as per drawing and technical sopecifications including racking out joints and curing , supplying and carriage of stone as directed.	cum	5592.80
		Tree Plantation		
16.60		Planting of Trees and their Maintenance for three Year (Planting of trees by the road side (Avenue trees) in 0.60 m dia holes, 1 m deep dug in the ground, mixing the soil with decayed farm yard/sludge mannure, planting the saplings, backfilling the trenches, watering , fixing the tree guatrd and maintaining the plants for three year.	each	673.20
16.61		Compensatory Afforestation (Planting trees as compensatory afforestation at the rate of 290 trees per hectare at a spacing of 6 m by grubbing and leveling the ground upto a depth of 150 mm, digging holes 0.9 m dia, 1 m deep, mixing farm yard/sludge manure with soil , planting of sapling 2m high with 25cm dia stem, backfilling the hole and watering.	hectare	102176.50
		Geo-Bags		
16.62		Supplying, filling and laying in loose with Geo-textile bags of Type-A (1.30m x 0.70m) made of Geo textile non woven fabric sheets of 400 GSM manufactured from polyster/ polypropylene conforming to relevant ISO standard filled with specified sand/ silt from flood plain or adjacent char within a distance of 90 m of the work site including excavation, filling Geo bags with sand weighing 126.00 kg after filling, stitching the mouth of the filled bags with polypropylene or polyster complete as per technical specifications and as directed.		
(a)		With Boat	Bag	298.00
(b)		Without Boat	Bag	286.00
16.63		Supply, Stitching and Laying of Non wooven Geo textile Fabric sheet of 400 gsm	Sqm	210.00
16.64		Supplying, filling and laying in cages with Geo-textile bags of Type-A (1.30m x 0.70m) made of Geo textile non woven fabric sheets of 400 GSM manufactured from polyster/ polypropylene conforming to relevant ISO standard filled with specified sand/ silt from flood plain or adjacent char within a distance of 90 m of the work site including excavation, filling Geo bags with sand weighing 126.00 kg after filling, stitching the mouth of the filled bags with polypropylene or polyster thread by power driven double needle machine, stacking the same in batches of 100, carrying the same to the dumping site including all handling charges and local carriage within a distance of 150m and laying properly in cages of PVC coated G.I.Gabion box of size 1.5m x 1.5m x 0.45m complete as per technical specifications and as directed.		
(a)		With Boat	Cage	1051.00
(b)		Without Boat	Cage	687.00

Item No.	Description	Unit	Rate (Rs.)
Chapter 14 - PROTECTION WORKS			
14.1	**Providing and laying boulder apron for bed protection with stone boulders of minimum size and weight as per Table 1300.1, no fragment weighing less than 25 kg laid dry complete as per drawing and technical specifications Clause 1301**	cum	1,646.80
14.2	**Providing and laying of boulder apron laid in wire crates with 4 mm dia GI wire conforming to IS:280 and IS:4826 in 100 mm x 100 mm mesh (woven diagonally) including 10 per cent extra for laps and joints laid with stone boulders weighing not less than 25 kg each as per drawing and technical specifications Clause 1301**	cum	2,460.70
14.3	**Providing and laying of apron with cement concrete blocks of size as per Table 1300.1 cast-in-situ and made with nominal mix of M-15 grade cement concrete as per drawing and technical specifications Clause 1301**	cum	5,192.70
14.4	**Single bamboo palasiding / walling of whole 2nd class bamboo (Jati or Bethua) 75mm dia and closely packed & driven including fitting fixing with half bamboo kamis horizontally in three rows with cane or tying with wire complete and struts 1.5 m apart longitudinally and providing brush wood as per drawing and technical specifications Clause 1302.5**		
	Driven at least 900 mm below ground and 1200 mm above ground	Running m	793.10
	Driven at least 900 mm below ground and 900 mm above ground on average	Running m	748.10
14.5	**Providing and laying pitching on slopes laid over prepared filter media as per drawing and technical specifications Clause 1302**		
I	Stone/Boulder	cum	1,646.80
II	Cement concrete blocks of size as per Table 1300.2 cast in cement concrete of grade M 15		
a)	Concrete grade M 15	cum	5,320.40
b)	Brick pitchng set in cement mortar 1:4	cum	5,964.90
14.6	**Providing and laying filter material underneath pitching in slopes complete as per drawing and technical specifications Clause 1302**	cum	1,813.60
14.7	**Providing and laying flooring laid over cement concrete bedding complete as per drawing and technical specification Clause 1303**		
i	Rubble stone laid in cement mortar 1:3	cum	3,847.00
ii	Cement conrete blocks grade M 15	cum	5,795.00
iii	Brick on edge laid in cement mortar (1:3)	cum	4,978.80
	Note : Cement concrete bedding to be measured and paid extra.		
14.8	**Providing and laying of dry rubble flooring complete as per drawings and technical specifications Clause 1303.3**	cum	2,297.40
14.9	**Providing and laying curtain walls complete as per drawing and technical specification Clause 1304**		
I	Brick masonry in cement mortar (1:4)	cum	7,252.90
ii	Coursed rubble masonary (2nd sort) in cement mortar (1:4)	cum	4,639.10
iii	Cement concrete grade M 10	cum	5,074.90

Sl. No.	Description	Unit	Rate at Plant (Rs.)
M-112	RCC Pipe NP3 (600 mm dia)	m	2,618.00
M-113	Red-oxide Primer	litre	165.00
M-114	Road marking paint	litre	90.00
M-115	Sand (Coarse)	cum	950.00
M-116	Sand (Fine)	cum	850.00
M-117	Seeds	kg	31.00
M-118	Steel Pipe 50 mm dia	m	131.00
M-119	TMT - IS 1786 (Fe-500 D) Primary Producer	t	41,500.00
M-120	MS bar - IS 1786 (Fe-500) Primary Producer	t	41,525.00
M-121	TMT - IS 1786 (Fe-500 D) Secondary Producer	t	34,492.00
M-122	Stone Boulder of size 150 mm and below	cum	1,055.00
M-122A	Stone boulder (25 kg minimum for pitching/ protection work)	cum	868.00
M-123	Stone Chips 12 mm size	cum	1,510.00
M-124	Stone Chips 6.7 mm size	cum	1,807.00
M-125	Stone Chips 13.2 mm to 5.6 mm	cum	1,599.50
M-126	Stone Crushed Aggregate 11.2 mm to 0.09 mm	cum	1,510.00
M-127	Stone for Coarse Rubble Masonry 1st Sort	cum	1,135.00
M-128	Stone for Coarse Rubble Masonry 2nd Sort	cum	1,135.00
M-129	Stone for Random Rubble Masonry	cum	1,135.00
M-130	Stone for Stone Set Pavement (300 mm x 200 mm x 150 mm)	No.	170.00
M-131	Stone Screening - Type A 13.2 mm for Grading-1	cum	799.50
M-132	Stone Screening - Type A 13.2 mm for Grading-2	cum	799.50
M-133	Stone Screening - Type B 11.2 mm for Grading-2	cum	710.00
M-134	Stone Screening - Type B 11.2 mm for Grading-3	cum	710.00
M-135	Stone spall	cum	987.00
M-136	Traffic cones	No.	1,229.00
M-137	Water	kl	40.00
M-138	Well graded Granular Base Material - Grading A 2.36 mm below	cum	698.00
M-139	Well graded Granular Base Material - Grading A 26.5 mm to 4.75 mm	cum	1,089.00
M-140	Well graded Granular Base Material - Grading A 53 mm to 26.5 mm	cum	1,124.00

Item No.	Description	Unit	Rate (Rs.)
Chapter 11 - FOUNDATION			
11.1	Excavation for Structures		
	Earthwork in excavation for structures as per drawing and technical specifications Clause 305.1 including setting out, construction of shoring and bracing, removal of stumps and other deleterious material and disposal upto a lead of 50 m, dressing of sides and bottom and backfilling in trenches with excavated suitable material.		
I	Ordinary soil		
	Upto 3 m depth	cum	113.00
	3 m to 6 m depth	cum	165.00
II	Ordinary rock (not requiring blasting)		
	Upto 3 m depth	cum	182.30
III	Hard rock (requiring blasting)	cum	429.30
IV	Hard rock (blasting prohibited)	cum	401.10
V	Marshy soil	cum	518.20
11.2	Fillling in foundation trenches as per drawing and technical specification Clause 305.3.9		
I	Sand filling	cum	1,455.10
ii	Earth filling (For marshy soil)	cum	179.10
11.3	Filling annular space around footing in rock as per technical specification Clause 1203.4.3.		
	P.C.C grade M 15		
A	With crushed Stone	cum	4,986.20
B	With natural Gravel	cum	4,704.70
11.4	**Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and technical specifications Clause 802, 803, 1202 & 1203**		
A	**With crushed Stone**		
I	P.C.C grade M 10		
	Nominal mix 1:3:6	cum	5,342.10
	Nominal mix 1:3.6 (Hand mixing)	cum	5,378.80
II	P.C.C grade M 15		
	Nominal mix (1:2.5:5)	cum	5,216.10
	Nominal mix 1:2.5:5 (Hand mixing)	cum	5,252.80
III	P.C.C Grade M20		
	Nominal mix (1:2:4)	cum	5,897.60
	Nominal mix 1:2:4 (Hand mixed)	cum	5,934.40
IV	R.C.C Grade M20	cum	6,259.20
V	R.C.C Grade M25	cum	6,671.30
B	**With natural Gravel**		
I	P.C.C Grade M 10		
	Nominal mix 1:3:6	cum	4,962.50
	Nominal mix 1:3:6 (Hand mixing)	cum	4,999.20

Item No.	Description	Unit	Rate (Rs.)
II	P.C.C Grade M15		
	Nominal mix 1:2.5:5	cum	4,899.80
	Nominal mix 1:2.5:5 (Hand mixing)	cum	4,936.50
III	P.C.C Grade M20		
	Nominal mix (1:2:4)	cum	5,507.20
	Nominal mix 1:2:4 (Hand mixed)	cum	5,543.90
IV	R.C.C Grade M20	cum	5,799.30
V	R.C.C Grade M25	cum	6,212.80
11.5	**Brick masonry work in cement mortar in foundation complete excluding pointing and plastering as per drawing and technical specifications Clauses 600, 1202 & 1203**		
I.	Brick masonry in 1:3 cement mortar	cum	6,807.30
ii	Brick masonry in 1:4 cement mortar	cum	6,593.60
iii	Brick masonry in 1:6 cement mortar	cum	6,502.00
11.6	**Stone masonry work in cement mortar in foundation complete as per drawing and technical specifications Clauses 702, 704, 1202 & 1203.**		
I	Coursed rubble masonry (1st sort)		
	In 1:3 cement mortar	cum	4,641.60
	In 1:4 cement mortar	cum	4,353.10
	in 1:6 Cement morter	cum	4,229.40
II	Coursed rubble masonry (2nd sort)		
	In 1:3 cement mortar	cum	5,373.60
	In 1:4 cement mortar	cum	4,991.50
	in 1:6 Cement morter	cum	4,831.20
III	Random Rubble Masonry		
	In 1:3 cement mortar	cum	5,876.40
	In cement mortar 1:4	cum	4,143.20
	in 1:6 Cement morter	cum	4,019.50
11.7	**Supplying, fitting and placing TMT (Fe-500 D) reinforcement bar (From Primary Producer: TATA/SAIL/Esser Steel/ Jindal steel/Shyam steel/RINL) in foundation complete as per drawings and technical specifications Clauses 1000 and 1202**	t	56,239.00
11.8	**Supplying, fitting and placing TMT (Fe-500 D) reinforcement bar (Other ISI approved TMT reinforcement bar (SAI/BISCON/THERMAX or equivalent)) in foundation complete as per drawings and technical specifications Clauses 1000 and 1202**	t	47,409.00
11.9	**Supplying, fitting and placing MS Bar (Fe-500) reinforcement bar (From Primary Producer: TATA/SAIL/Esser Steel/ Jindal steel/Shyam steel/RINL) in foundation complete as per drawings and technical specifications Clauses 1000 and 1202**	t	56,270.50

Item No.	Description	Unit	Rate (Rs.)
Chapter 14 - PROTECTION WORKS			
14.1	**Providing and laying boulder apron for bed protection with stone boulders of minimum size and weight as per Table 1300.1, no fragment weighing less than 25 kg laid dry complete as per drawing and technical specifications Clause 1301**	cum	1,646.80
14.2	**Providing and laying of boulder apron laid in wire crates with 4 mm dia GI wire conforming to IS:280 and IS:4826 in 100 mm x 100 mm mesh (woven diagonally) including 10 per cent extra for laps and joints laid with stone boulders weighing not less than 25 kg each as per drawing and technical specifications Clause 1301**	cum	2,460.70
14.3	**Providing and laying of apron with cement concrete blocks of size as per Table 1300.1 cast-in-situ and made with nominal mix of M-15 grade cement concrete as per drawing and technical specifications Clause 1301**	cum	5,192.70
14.4	**Single bamboo palasiding / walling of whole 2nd class bamboo (Jati or Bethua) 75mm dia and closely packed & driven including fitting fixing with half bamboo kamis horizontally in three rows with cane or tying with wire complete and struts 1.5 m apart longitudinally and providing brush wood as per drawing and technical specifications Clause 1302.5**		
	Driven at least 900 mm below ground and 1200 mm above ground	Running m	793.10
	Driven at least 900 mm below ground and 900 mm above ground on average	Running m	748.10
14.5	**Providing and laying pitching on slopes laid over prepared filter media as per drawing and technical specifications Clause 1302**		
I	Stone/Boulder	cum	1,646.80
II	Cement concrete blocks of size as per Table 1300.2 cast in cement concrete of grade M 15		
a)	Concrete grade M 15	cum	5,320.40
b)	Brick pitchng set in cement mortar 1:4	cum	5,964.90
14.6	**Providing and laying filter material underneath pitching in slopes complete as per drawing and technical specifications Clause 1302**	cum	1,813.60
14.7	**Providing and laying flooring laid over cement concrete bedding complete as per drawing and technical specification Clause 1303**		
i	Rubble stone laid in cement mortar 1:3	cum	3,847.00
ii	Cement conrete blocks grade M 15	cum	5,795.00
iii	Brick on edge laid in cement mortar (1:3)	cum	4,978.80
	Note : Cement concrete bedding to be measured and paid extra.		
14.8	**Providing and laying of dry rubble flooring complete as per drawings and technical specifications Clause 1303.3**	cum	2,297.40
14.9	**Providing and laying curtain walls complete as per drawing and technical specification Clause 1304**		
I	Brick masonry in cement mortar (1:4)	cum	7,252.90
ii	Coursed rubble masonary (2nd sort) in cement mortar (1:4)	cum	4,639.10
iii	Cement concrete grade M 10	cum	5,074.90

Item No.	Ref. of MoSRT&H	Descriptions	Unit	Rate
16.45		Single bamboo spur and palasiding of whole 2nd class bamboo (Jati or Bethua) 65mm to 75mm dia closely packed & driven, including fitting and fixing with half bamboo kamis horizantally in three rows with the cane or tieing wire complete and struts 1500 mm apart longitudinally and providing brush wood as per drawing and technical specification clause 1302.5 of MORD		
(a)		Driven at least 900mm below and 1800 mm above the ground on average.	meter	616.20
(b)		Driven at least 900mm below and 900 mm above the ground on average	meter	502.70
16.46		Single bamboo spur and palasiding of whole 1st class bamboo (Bholuka or Barua) 85mm to 100mm dia closely packed & driven, including fitting and fixing with half 2nd class bamboo (Jati or Bethua) bamboo kamis horizantally in three rows with the cane or tieing wire complete and struts 1500 mm apart longitudinally and providing brush wood as per drawing and technical specification clause 1302.5 of MORD.		
(a)		Driven at least 900mm below and 1800 mm above the ground on average.	meter	698.90
(b)		Driven at least 900mm below and 900 mm above the ground on average	meter	427.40
(c)		Driven at least 900mm below and 1200 mm above the ground on average	meter	397.70
16.47		Bamboo spur 'A' type with whole bamboo placed 230mm center to center driven 900mm below ground and 1200mm to 1500mm above the ground tied with 2nd class bamboo (Jati or Bethua) on either side at 450mm apart horizantally with galvanized wire etc. complete as per drawing and technical specifications.		
(a)		2nd class bamboo (Jati or Bethua) 65mm to 75mm dia.	meter	651.10
(b)		1st class bamboo (Bholuka or Barua) 85mm to 100mm dia.	meter	532.40
16.48		Bamboo single spur 'A' type with 1st class bamboo (Bholuka or Barua) 85mm to 100mm dia, driven closely placed 3m to 4m above the ground and 1.20m to 1.5m below the ground and tied with cane or coir string, half 2nd class bamboo (Jati or Bethua) kamis horizontally on both face placed not more than one meter apart including whole bamboo struts inside one meter apart and 2nos. of purlin at top and bottom fitted with vertical struts at 1500mm apart and filling with brushwood or jungle wood inside the spur complete as per drawing and technical specifications.	meter	914.20
16.49		Close bamboo toe walling with 65mm to 75mm diameter bamboos of length ranging from 1.2m to 3.0m driven at least 150mm c/c and provided with three horizontal split bamboo runner fixed with nails complete including coal tarring as directed (Rate inclusive of cost of the required quantity of tar)	meter	736.00
16.50		Double timber spur with two rows of 1st class local wood (Azar/ Nahar/ Nageswar/ Zarul) timber piles of 150mm to 200mm dia driven 800mm c/c apart upto minimum 2000mm below ground and 3600mm above ground and average placed at 800mm belt, bracing etc. of 100mm x 75mm size dia bolts and nuts etc. including coal tarring of timber members and necessary bamboo staging etc. as directed and as per drawing and technical specifications.	meter	25584.60
16.51		Supplying and filling up hollows of the timber spur to an average height of 3600mm above the ground with jungle wood branches as directed and as per drawing and technical specifications.	meter	55.10

Item No.	Ref. of MoSRT&H	Descriptions	Unit	Rate
17.47		**Supplying, fitting and placing TMT IS:1786 (Fe 500) bar reinforcement in sub-structure complete as per drawing and technical specifications**		
(a)		TMT-IS 1786 (Fe-500 D) Primary Producer (TATA/ SAIL/ Esser Steel/ Jindal panther steel/ Shyam steel or equivalent)	tonne	56880.00
17.49		Providing weep holes in Brick masonry/Plain/Reinforced concrete abutment, wing wall/return wall with 100 mm dia AC pipe, extending through the full width of the structure with slope of 1V :20H towards drawing foce. Complete as per drawing and Technical specification.	each	182.00
17.50		Back filling behind abutment, wing wall and return wall complete as per drawing and Technical specification		
A		Granular material	cum	1326.00
B		Sandy material	cum	1326.00
17.51		Providing and laying of Filter media with granular materials/stone crushed aggregates satisfying the requirements laid down in clause 2504.2.2. of MoRTH specifications to a thickness of not less than 600 mm with smaller size towards the soil and bigger size toeards the wall and provided over the entire surfaces behind the abutement, wing wall and return wall to the full height compacted to firm condition complete as per drawing and technical specification.	cum	1768.00
17.52		Supplying, fitting and fixing in position true to line and level cast steel rocker bearing conforming to IRC: 83(Pt.-1) section IX and clause 2003 of MoRTH specifications complete including all accessories as per drawing and Technical Specifications.	tonne capacity	666.00
17.53		Supplying, fitting and fixing in position true to line and level forged steel roller bearing conforming to IRC: 83(Pt.-1) section IX and clause 2003 of MoRTH specifications complete including all accessories as per drawing and Technical Specifications.	tonne capacity	576.00
17.54		Supplying, fitting and fixing in position true to line and level sliding plate bearing with PTFE surface sliding on stainless steel complete including all accessories as per drawing and Technical Specifications and BS: 5400, section 9.1 & 9.2 (for PTFE) and clause 2004 of MORT&H specification.	tonne capacity	309.00
17.55		Supplying, fitting and fixing in position true to line and level elastomeric bearing conforming to IRC: 83 (Part-II) section IX and clause 2005 of MoRTH specifications complete including all accessories as per drawing and Technical Specifications.	cubic centimetre	1.21
17.56		Supplying, fitting and fixing in position true to line and level sliding plate bearing with stainless steel plate sliding on stainless steel plate with mild steel matrix complete including all accessories as per drawing and Technical Specifications.	tonne capacity	174.00
17.57		Supplying, fitting and fixing in position true to line and level POT-PTFE bearing consisting of a metal piston supported by a disc or unreinforced elastomer confined within a metal cylinder, sealing rings, dust seals, PTFE surface sliding against stainlesssteel matting surfaces, complete assembly to be of cast steel/fabricated structural steel, meatal and elastomer elements to be as per IRC:83 part-I &II respectively and parts conforming to BS:5400, section 9.1 & 9.2 and clause 2006 of MORTH&S Specification complete as per drawing and approved technical specification.	tonne capacity	196.00
		SUPER-STRUCTURE		

OFFICE OF THE EXECUTIVE ENGINEER : DIBRUGARH WR DIVISION : DIBRUGARH.

NOTICE INVITING QUOTATION

NO. Dib/01 for 2021-22

Sealed Quotation in plain paper affixing court fee stamp of Rs. 8.25 (Rupees Eight & Paisa twenty-five) only (non refundable) are hereby invited from registered contractor of W.R. Department for fixing up the rates as per enclosed schedule and will be received at the office of the undersigned upto 3 P.M. on **25/05/2021** and will be opened at 3.30 P.M. on the same date. In case the date falls on holiday etc. the same will be received on the next working date.

Name of Work :- Flood drill Estimate for Dibrugarh Water Resources Division for the year 2021-22

Item of Work :- As Per Schedule enclosed.

SPECIAL CONDITIONS

1. The rate in the quotation should be quoted both in words and figure.
2. The rate should be quoted specifically stating inclusive of G.S.T. etc. if nothing is mentioned , the same will treated as inclusive of G.S.T etc.
3. No quotation in carbon copy / zerox copy etc. will be accepted.
4. No claim whatsoever will be entertained for advanced action of floating quotation.
5. Canvassing in connection with quotation directly or indirectly is strictly prohibited and quotation submitted by the quotationer who resorts canvassing will be liable for rejection.
6. The quotation submitted by firm should be dully signed by an authorized attorney and attested copy of the constitution of the firm must be attached alongwith the quotation.
7. The work will only taken up as per requirement.
8. The material will only obtain as per requirement based on necessity.
9. The payment for the supply will be made on availability and receipt of fund from the Govt.
10. The Supplier will bound to follow all the rules and procedures of Govt. in the WR Department from time to time.
11. The undersigned is not bound to accept the lowest rate of the quotation which is considered not workable due to prevailing rate and reserved the right to cancel / rejection of the same without assigning any reason thereof.
12. The order for supply will only be based on requirement and no claim of quotation for non allotment of work will be entertained.
13. The registration number of the contractor /supplier should be furnished in the quotation clearly.
14. The materials as per specifications will only be accepted, unspecified materials will be rejected and will have to be removed from the stack yard at the risk and cost of the supplier within 12 hours. Otherwise this department will not take any responsibility of loss, damage , pilferage etc. of the same and no claim what so ever will be entertained in future.
15. The order for supply will only be based all requirements and no claim of quotationer for non allotment of work will be entertained.
16. The supplier will bound to follow all the rules and procedures of Govt. in the WR Deptt. From time to time.
17. Place of delivery as directed by Department, no extra charge will be allowed.

Executive Engineer,
Dibrugarh WR Division,
Dibrugarh.

Memo No. EE//WRD/DBR/2021-22/G-131/1441 Date: 20/05/2021

Copy forwarded to the Director of Information and Public relation, Assam, Dispur, Guwahati -6 for favour of information with a request to kindly publish the above N.I.T. in 2(two) consecutive publication in 2(two) leading daily News Paper of Assam both in English and Assamese.

Enclo. :- 1(One) N.I.T in Duplicate.

Executive Engineer,
Dibrugarh WR Division,
Dibrugarh.

Memo No. EE//WRD/DBR/2021-22/G-131/1441-A Date: 20/05/2021

Copy forwarded for favour of kind information and wide circulation to:-

1. The Chief engineer ,WR Department, Assam
2. The Additional Chief Engineer, UAZ. WR Department , Dibrugarh.
3. The Superintending Engineer, NMPC, WR Department, Dibrugarh.
4. The Assistant Executive Engineer, East/West/Naharkatia/Doomdooma WR Sub-Division.
5. Notice Board / Concerning file/Tender Assistant.
6. Office of the DIPR for publishing locally

Enclo:- One Schedule.

Executive Engineer
Dibrugarh WR Division
Dibrugarh

No dearth of ICU beds in govt hospitals: CM

CORRESPONDENT

BARPETA, May 20: Chief minister Himanta Biswa Sarma has claimed that there is no dearth of ICU beds in government hospitals of the State and people should allow the government to serve them. Addressing coolleguesmen here this morning during his visit to Fakhruddin Ali Ahmed Medical College and Hospital to assess the situation arising out of COVID-19, Sarma urged the people to prefer government hospitals to private ones.

Sarma acknowledged the need for further improvement of infrastructure of the State Health sector and informed of a number of steps undertaken in this regard, including increase of ICU beds and oxygen plants. Sarma informed that 33 more ICU beds along with more oxygen concentrators will be set up in BARPETA here.

Sarma informed that the rate of Covid positive patients in the State has shown a declining trend and expressed the hope that the situation will improve within the next 15 days. Giving statistics, he said that the percentage of positive cases has decreased to 9% from around 14%. However, he exhorted people of the State to abide by the government guidelines and avail the opportunity to get themselves vaccinated. He also requested the people not to go out unless the situation demands so. He ruled out complete lockdown though restrictions on inter-district movement will be imposed from the May 21.

Replying to questions regarding shortage of vaccines, Dr Sarma informed that 30,000 people are being vaccinated everyday but the government is trying to make it one lakh. He indicated that the supply of vaccines will improve from next month.

Referring to Barpeta district, the Chief Minister said that RT-PCR test is lower in comparison to RAT in the district and he has directed the Health department officials to increase it from today.

Earlier, Dr Sarma met Health officials of the district to have a first-hand knowledge about the Covid situation in the district. He also met party leaders of the district in a separate session.

Chief Minister Himanta Biswa Sarma taking stock of Covid treatment facilities at the Fakhruddin Ali Ahmed Medical College and Hospital, in Barpeta on Thursday. – UB Photos

Covid claims 2 more lives in Bajali

ANN SERVICE

PATACHARKUCHI, May 20: Two more persons died of Covid-19 today in Bajali district. The Covid curve is fast deteriorating and infection graph rising. Babul Talukdar (62) of Sreedharkuri and Pranjal Kalita (43) of Haripur died of Covid today. Till today, 12 persons have died of Covid in the district. Meanwhile, vaccination is under way and testing is also going on.

3 more Covid deaths in Dhemaji

CORRESPONDENT

DHEMAJI, May 20: Active Covid cases in Dhemaji, which was maintaining a declining trend for the last six days, again increased on Thursday with 300 new positive cases.

The district Health department has reported three Covid deaths in the last couple of days (2 on Tuesday and 1 on Thursday).

Thus, the district at present has 621 active cases, while 21 people have succumbed to Covid infection during the second wave.

The medical teams of the district tested 3,518 samples

Covid death toll 13 in Charaideo dist

ANN SERVICE

SONARI, May 20: One person died of COVID-19 today, taking the total death cases to 13 in Charaideo district during the second wave of the pandemic.

Altogether, 33 persons were found positive in the district out of 1000 RAT and 2 RT-PCR tests done today. With this, the total number of infected persons has gone up to 785 in the district, of which 688 are active cases.

Fifteen infected persons have been hospitalised in Sonari Civil Hospital, 22 in Lahwa Model Hospital and 7 in Sapekhati Model Hospital and rest are in home isolation.

Altogether 29 infected persons, most of whom are tea garden labourers, have been kept in different Community Care Centres, including 20 in Doomandubung TE, 6 in Teok TE, 5 in Joboka TE, 2 in Borhat TE, 3 in Saffry TE and 2 in Manjuarat TE, informed Dr Mausa Devi, Joint Health Director, Charaideo.

People demand vaccine centres in villages of Chirang district

CORRESPONDENT

BONGAIGAON, May 20: People of the twelve rural areas in Chirang district have demanded COVID-19 vaccination centres in their native villages and make the jabs available for them so that its rising demand can be met easily within a short period.

Two newly-elected legislators of the district are constantly monitoring the management of the contagion and trying to address the related issues of people of their respective constituencies.

"Since there is no facility of Covid vaccination and tests in their native villages in the district people from remote areas have to come to the district headquarters Kajalgaon for these health services. Meanwhile, demand for Covid jabs has increased after the beneficiaries of 18 to 44 year age group have been included in the vaccination drive recently. But as per demand, vaccines are not available yet. So, I will discuss the issue with the ministers concerned tomorrow in Guwahati," newly-elected Sidli legislator Jayanta Basumatary told this correspondent today.

On the other hand, gathering of truck drivers for long hours at Dhaligiri market along India-Bhutan border, before their entry to Bhutan has caused a concern because there is every possibility of drivers and their helpers spreading the virus in the locality, Basumatary added. Another newly-elected Hajo legislator Ajay Kumar Roy had expressed similar experience on the Covid management in his constituency in the district.

ver, both t	ses have blamed
interstat	otal areas as one
y hurdles	ths to be borne

(...see back, page 10 for the rest of the news)

475 fresh cases 2 One shot dead

Covid claims 2 at Gohpur

CORRESPONDENT

BISWANATH CHARIALI, May 20: Two persons succumbed to COVID-19 today in Gohpur subdivision in Biswanath district. They have been identified as Moti Upadhyay Dhangri (60) of Gomeri and Khanikor Devi (80) of Teleni, Malibasa. Upadhyay breathed his last at Tezpur Medical College and Hospital while Khanikor Devi lost her life at Kalabari Model Hospital.

Meanwhile, the Biswanath district administration has intensified vaccination drive in the district. A total of 23181 vaccines were administered till Wednesday, which included 14063 vaccines in the 18 to 44 age group and 53569 vaccines above 45 age group.

Dibrugarh loses 2 prominent citizens to COVID-19

STAFF CORRESPONDENT

DIBRUGARH, May 20: Dr Sila Kanta Dutta, education-ist and former Principal of DHSK College passed away due to Covid infection at around 1.14 am last night at a private nursing home here. He was 73.

Dr Dutta pursued his college studies at DHSK College and later served the institution as a faculty of the Department of Political Science. He became the Principal of the College in 1997 and continued to lead the institution for three separate phases. He retired in 2006.

Dr Dutta was originally from Machidhar village but later settled at Balengmukh here. He is survived by his wife, a son, two daughters and a host of grandchildren.

Narendra Lal Baruah alias Tarua, the Officer-in-Charge of Dibrugarh edition of *Asomiya Pratidin* also succumbed to the virus at around 7.30 am. He was undergoing treatment at a private nursing home here since May 9. He was 71.

Narendra Lal, popularly called Tarua, was part of the vernacular daily since the start of the edition here in 1989. He had graduated from St. Anthony's College, Shillong. He had finished his early schooling from the then George Institute here. Tarua was reportedly a good cricketer. He was also involved in drama and film. He leaves behind his wife.

Narendra Lal Baruah (Tarua)

Dr K Dutta

People urged not to ignore early symptoms of Covid

STAFF CORRESPONDENT

SILCHAR, May 20: Amidst the rise in COVID-19 cases, three more patients, including a youth aged 26 years, have succumbed to the virus within a day of getting admitted at the Silchar Medical College and Hospital (SMCH). A total of 98 patients are admitted in the ICU of the hospital, sources said.

Dr Bhaskar Gupta, vice principal of the hospital informed that all three patients were from Cachar district who got admitted on May 19 but succumbed on May 20. He added to say that the instances of people ignoring symptoms of COVID-19 and delay in seeking medical help raises the chances of eventual death.

Elaborating on the issue, Dr Gupta said, "Often, COVID-19 patients do not feel the dip in the oxygen or respiratory distress level because of hypo hypoxia. People, even with slightest of early symptoms must rush for medical help as that the progression of deaths can be averted. People must not delay seeking medical attention because of fear or any kind of stigma. Early identification of the disease is vital for prompt initiation of treatment and easy recovery."

Meanwhile, District Health Department informed that till 6 pm, 205 patients were detected with the virus and the numbers might rise as reports of more RT-PCR tests are yet to reach.

Home quarantined patients given online consultations in Sivasagar

CORRESPONDENT

SIVASAGAR, May 20: A total of 572 home quarantined patients of COVID-19 have been given online consultations with empanelled physicians in Sivasagar district from today following formation of a Home Isolation/Quarantine Monitoring Committee.

Bidyut Chetia (9435291450) and Dr Dipa Saikia (9435155509) may now be consulted over phone by any Covid patient in home quarantine. Rotary Club, Sivasagar, has also extended a helping hand to the patients by giving their mobile numbers: 8822780795 and 8822845343.

Meanwhile, a total of 96,465

No. SMCH/TenderNotice/2021/1779

SHORT NOTICE INVITING QUOTATIONS

Principal cum Chief Superintendent, Tezpur Medical College & Hospital, (TeMCH), Tezpur invites sealed quotations from reputed agencies dealing with Annual Maintenance Contract for CCTV's surveillance system for Comprehensive Annual Maintenance Contract for CCTV's, Cameras with accessories and other equipments installed at TMC&H, Tezpur. Interested bidders can download the detailed NIQ from the TMC&H's website **https://tmcassam.org** from 21.05.2021 (11.00 a.m. onwards). Last date to submit the quotation is 28.05.2021 upto 14:00 hrs.

Sd/- Principal cum Chief Superintendent
Tezpur Medical College & Hospital,
Tezpur.

No. DWS/Tech/Notice/2021/2-22

NOTICE INVITING QUOTATION

Sealed Quotation in plain paper affixing court fee stamp of Rs. 8.25 (Rupees eight & paise twenty five only) from enlistedbidders are hereby invited from registered contractor of W/S Department for lifting up the rates as per enclosed scheduled and will be received at the office of the undersigned upto 3 PM on 28.05.2021 and will be opened at 3.30 PM on the same date in case the date falls on holiday etc. the same will be received on the next working date.

Name of work : Flood drill Estimate for Dibrugarh Water Resources Division for the year 2021-22

Detail of terms and terms and conditions may be obtain from the office of the undersigned during office hours.

Sd/- Executive Engineer,
Dibrugarh W.R. Division
Dibrugarh

No. CE/Comm/04-/2021-22/2

PRESS NOTICE INVITING TENDER

The Chief Engineer, PWD (Roads), Assam on behalf of the Governor of Assam invites bid from approved and eligible contractors registered with Assam PWD (Roads) for the work "Construction of J.D. (Rd.) Road from Green Field near Pilgrimbaba Mandir to Nanatan Girl's College with drain and steel Railing along with cycling , divider, pedestrians Zebra crossing and C.C. TV installation at Rokraghar under CIDF for the year 2020-21" amounting to Rs. 2000.00 Lakh (pertaining to Kokrajhar District. Details may be seen at website : **eauambers.gov.in** and also at the office of the undersigned in the "Communication Branch", from 26.05.2021 to 10.06.2021 during office hour.

Sd/- Chief Engineer, PWD (Roads),
Assam, Chandmari, Guwahati- 3

No. KEL/2020/24

TENDER NOTICE

EE (Dibrugarh)

Absolute lowest quoted rates are accepted. Item wise rate as stated below are approved which may be circulated from your end.

Item No.	Rate
1.	Rs. 7.60 / Sqm
2.	Rs. 6.00/ No
3.	Rs. 14.20/ No
4.	Rs. 135.00/No.
5.	Rs. 248.00/No
6.	Rs. 390.50/Cum
7.	Rs. 94.00/Cum
8.	Rs. 1418.00/ Rm
9.	Rs. 668.00/Rm
10.	Rs. 506.20 / Rm
11.	Rs. 353.00/Rm
12. (a)	Rs. 5024.00 /No
(b)	Rs. 439.00/No
(c)	Rs. 253.00/No
13.	Rs. 1075.50/ Rm
14. (a)	Rs. 1162.00/No
(b)	Rs. 1660.00/No
15.	Rs. 1215.50/No
16. (a)	Rs. 1037.00/No
(b)	Rs. 666.00/No
17.	Rs. 320.00/Manday
18.	Rs. 104.00/Sqm
19.	Rs. 322.70/Cum

Superintending Engineer
Nagaghuli Maijan Protection Circle
W.R. Department
Dibrugarh.