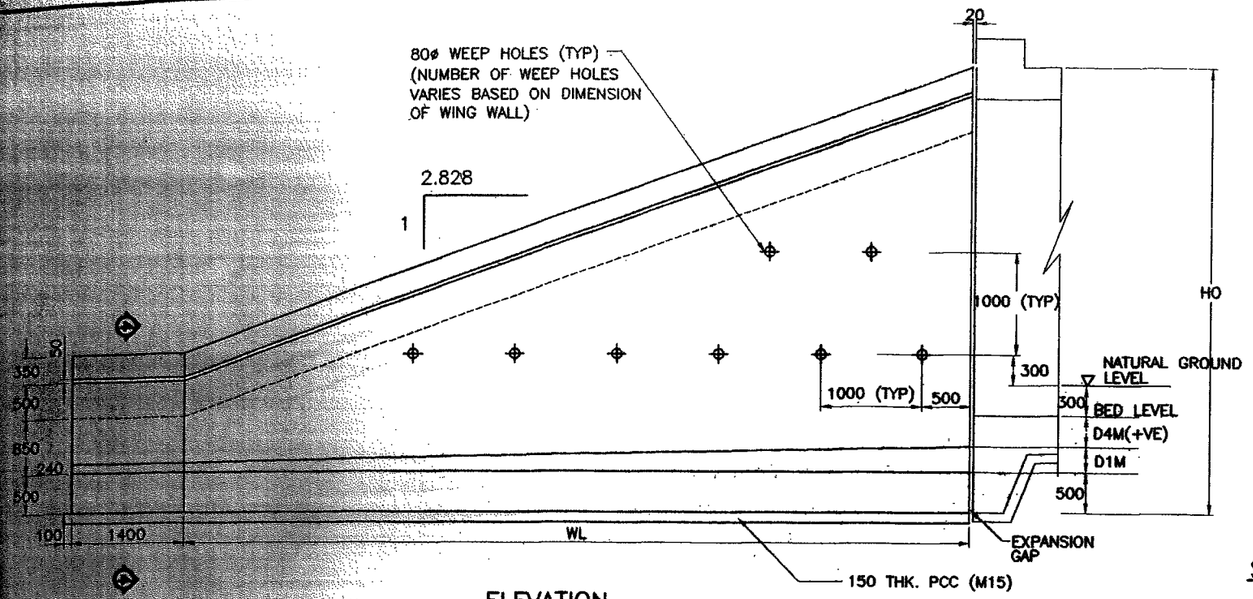
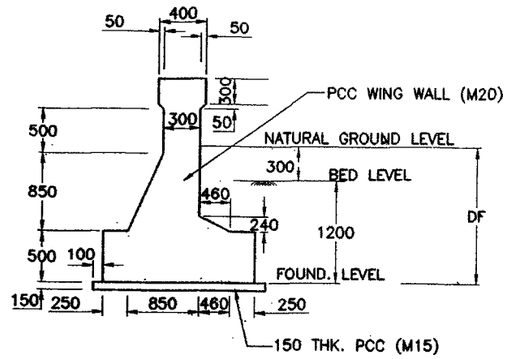
DRG.NO. SD/113 (SHEET 1 OF 6)



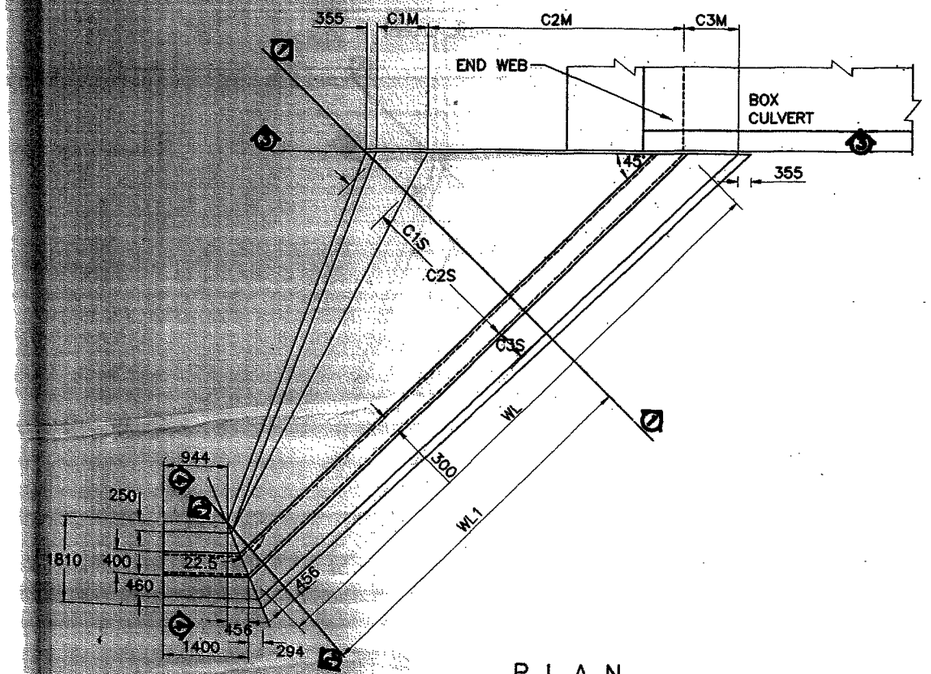
ELEVATION



SECTION 4 – 4 (MIN HEIGHT)

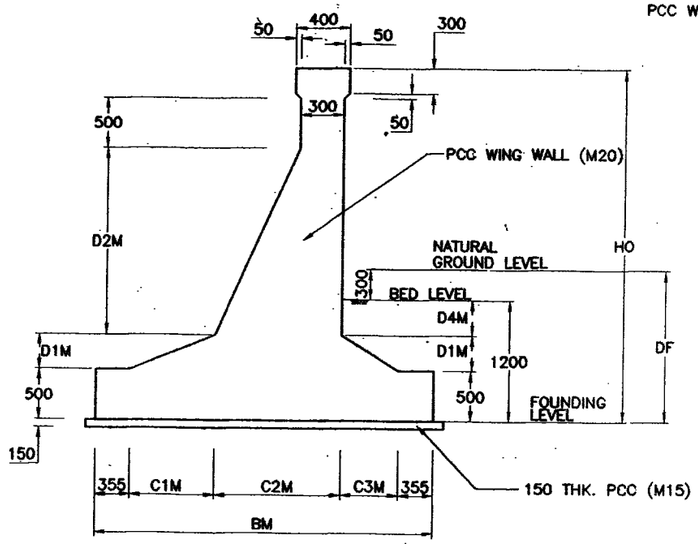
NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE MENTIONED. DIMENSIONS ARE NOT TO BE SCALED.
2. FOR GENERAL NOTES REFER DRG. NO. SD/101.
3. FOR DIMENSION SCHEDULE REFER DRG. NO. SD/113 (SHEET 3 TO 6 OF 6)
4. SOFT AND LOOSE PATCHES IN THE BEARING AREA ARE TO BE REPLACED BY COMPACTED GRANNULAR FILLS WITH LAYERS NOT EXCEEDING 300mm.
5. IF THERE IS ANY LEVEL DIFFERENCE IN FOUNDING LEVEL OF WING WALL AND DOWNWARD PROJECTION AT THE ADJACENT EDGE OF BOX STRUCTURE, PROPER GRANULAR PROTECTION IS TO BE PROVIDED IN THIS AREA TO COMPENSATE THE LEVEL DIFFERENCE.
6. MARKED SECTION 2–2 NOT SHOWN IN DRG & IS GIVEN ONLY TO MENTION LENGTH WL1.
7. THE FILTER MEDIA SHALL BE PROVIDED BEHIND THE SURFACE OF WING WALL AS PER IRC:78.

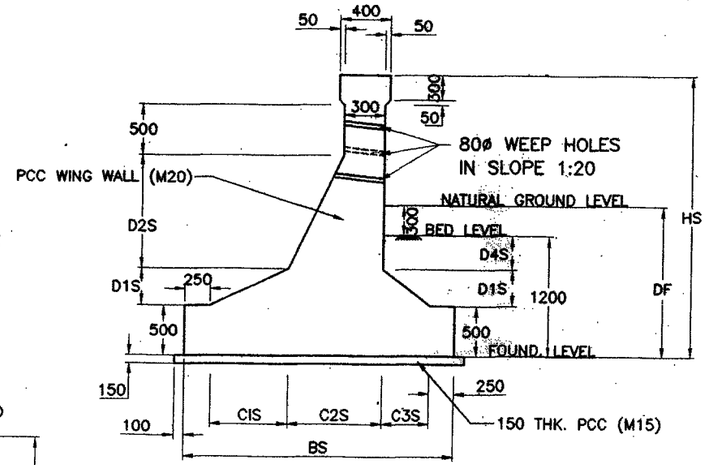


PLAN

(BLINDING LAYER LINE AND WEEP HOLES NOT SHOWN IN PLAN)



SECTION 3–3



SECTION 1–1

GOVERNMENT OF INDIA
MINISTRY OF SURFACE TRANSPORT
(ROADS WING) , NEW DELHI.

STANDARD DRAWINGS FOR BOX CELL STRUCTURES

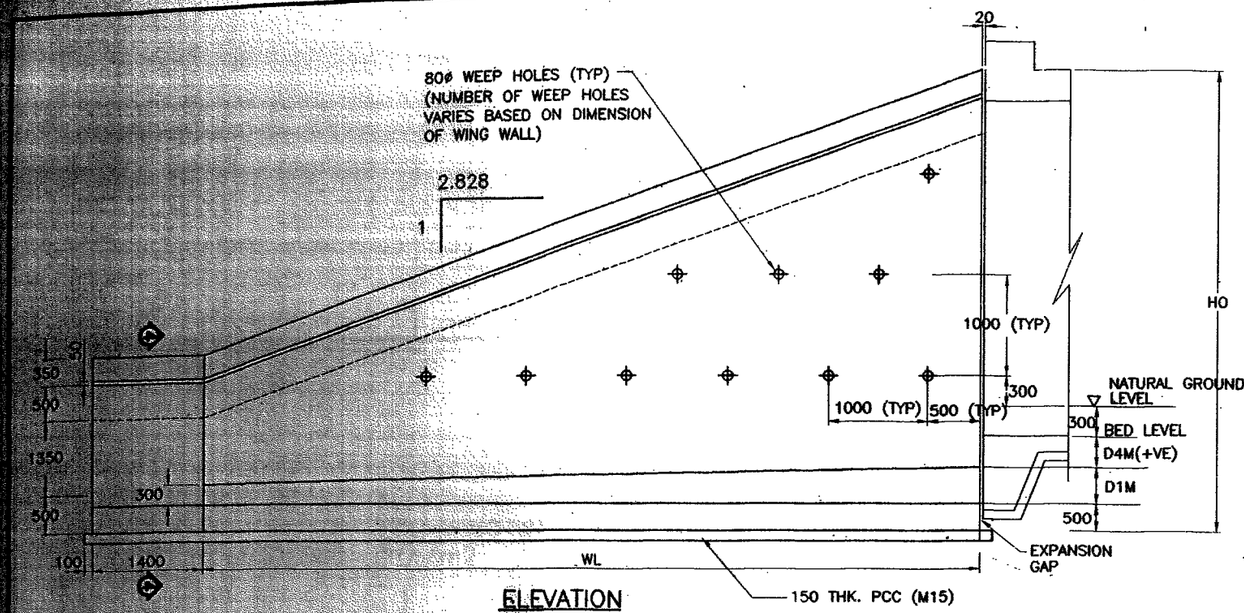
DETAILS OF PCC WING WALL

GENERAL ARRANGEMENT
(MAX HEIGHT OF WING WALL BELOW 6m.)

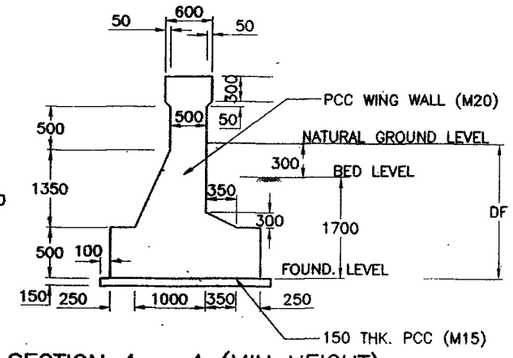
DESIGNED BY	CHECKED BY	APPROVED FOR ISSUE BY	1999
(A.R.GHOSH) CES (I) LTD	(M.C.TANDON) TCPL	(C.C.BHATTACHARYA) C.E (R) S&R MOST	DRG. NO. SD/113 (SHEET 1 OF 6)

Source: MoST Standard Drawings for Box Cell Culverts (2000) - older reference, verify with current IRC / MoRTH. Scan cleaned by helptheengineer.com

DRG.NO. SD/113 (SHEET 2 OF 6)



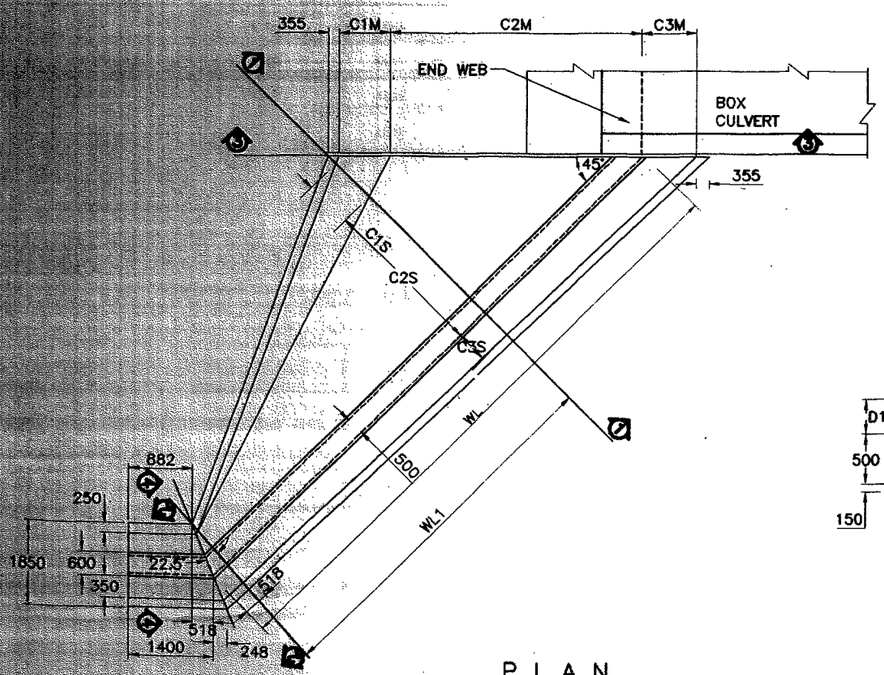
ELEVATION



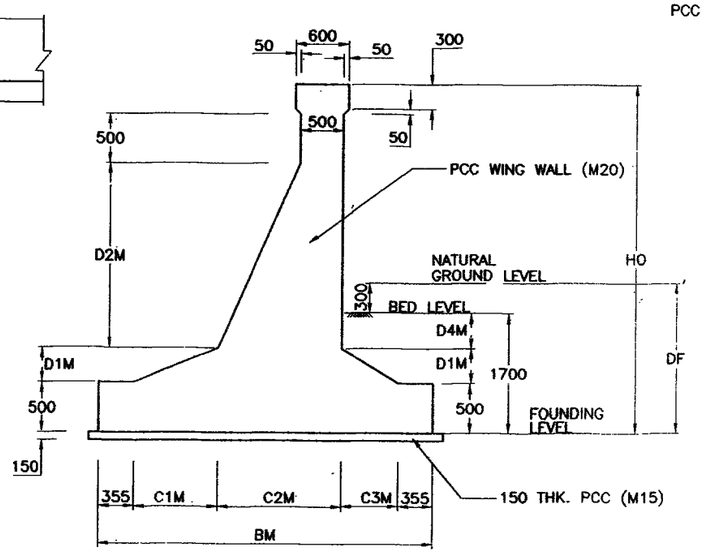
SECTION 4 – 4 (MIN HEIGHT)

NOTES:

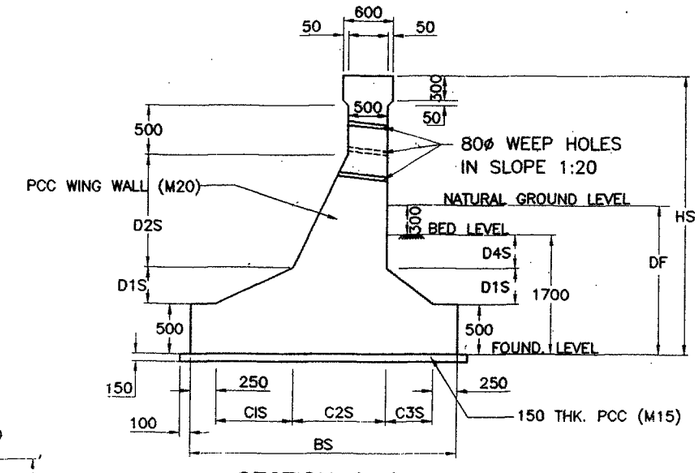
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE MENTIONED. DIMENSIONS ARE NOT TO BE SCALED.
2. FOR GENERAL NOTES REFER DRG. NO. SD/101.
3. FOR DIMENSIONS SCHEDULE REFER DRG. NO. SD/113 (SH 3 TO 6 OF 6)
4. SOFT AND LOOSE PATCHES IN THE BEARING AREA ARE TO BE REPLACED BY COMPACTED GRANULAR FILLS WITH LAYERS NOT EXCEEDING 300mm.
5. IF THERE IS ANY LEVEL DIFFERENCE IN FOUNDING LEVEL OF WING WALL AND DOWNWARD PROJECTION AT THE ADJACENT EDGE OF BOX STRUCTURE, PROPER GRANULAR PROTECTION IS TO BE PROVIDED IN THIS AREA TO COMPENSATE THE LEVEL DIFFERENCE.
6. MARKED SECTION 2–2 NOT SHOWN IN DRG & IS GIVEN ONLY TO MENTION LENTGH WL1.
7. IF OVERALL HEIGHT IS ABOVE 6M, IT IS BETTER TO BE OPT FOR R.C.C TYPE WING WALL RATHER THAN P.C.C. WING WALL. FOR THIS SPECIFIC CASE INDEPENDENT DESIGN HAS TO BE DONE AS PER SITE CONDITION AND DIRECTION OF THE ENGINEER–IN–CHARGE.
8. THE FILTER MEDIA SHALL BE PROVIDED BEHIND THE SURFACE OF WING WALL AS PER IRC:78.



PLAN
(BLINDING LAYER LINE AND WEEP HOLES NOT SHOWN IN PLAN)



SECTION 3–3



SECTION 1–1

GOVERNMENT OF INDIA MINISTRY OF SURFACE TRANSPORT (ROADS WING), NEW DELHI.			
STANDARD DRAWINGS FOR BOX CELL STRUCTURES			
DETAILS OF PCC WING WALL GENERAL ARRANGEMENT (MAX HEIGHT OF WING WALL BELOW 6m.)			
DESIGNED BY	CHECKED BY	APPROVED FOR ISSUE BY	1999
(A.R.GHOSH) CES (I) LTD	(M.C.TANDON) TCPL	(C.C.BHATTACHARYA) C.E (R) S&R MOST	DRG. NO. SD/113 (SHEET 2 OF 6)

Source: MoST Standard Drawings for Box Cell Culverts (2000) - older reference, verify with current IRC / MoRTH. Scan cleaned by helptheengineer.com

TABLE No. – 1

SALIENT DIMENSIONS OF PCC WING WALL
CONSIDERING NET SBC= 5t/m2 PCC (M20)

				SECTION 1–1								SECTION 3–3						
S.NO.	MAX.HT. HO (mm)	DEPTH OF FOUND. DF(mm)	LENGTH BETWEEN SEC. 1–1 AND SEC. 2–2 (mm)	HT.AT SEC 1–1 HS (mm)	C1S (mm)	C2S (mm)	C3S (mm)	BS (mm)	D1S (mm)	D2S (mm)	D4S (mm)	C1M (mm)	C2M (mm)	C3M (mm)	BM (mm)	D1M (mm)	D2M (mm)	D4M (mm)
1.	3000	1500	707	2611	0	850	600	1950	320	941	380	0	1202	1157	2859	444	1206	256
2.	4000	1500	185	2427	3350	850	650	5350	264	813	436	4738	1202	7366	13806	840	1810	–140

TABLE No. – 2

SALIENT DIMENSIONS OF PCC WING WALL
CONSIDERING NET SBC= 10t/m2 PCC (M20)

				SECTION 1–1								SECTION 3–3						
S.NO.	MAX.HT. HO (mm)	DEPTH OF FOUND. DF(mm)	LENGTH BETWEEN SEC. 1–1 AND SEC. 2–2 (mm)	HT.AT SEC 1–1 HS (mm)	C1S (mm)	C2S (mm)	C3S (mm)	BS (mm)	D1S (mm)	D2S (mm)	D4S (mm)	C1M (mm)	C2M (mm)	C3M (mm)	BM (mm)	D1M (mm)	D2M (mm)	D4M (mm)
1.	3000	1500	707	2611	0	850	460	1810	280	981	420	0	1202	651	2353	342	1308	358
2.	4000	1500	2935	3399	500	950	600	2550	600	1449	100	707	1344	963	3514	808	1842	–108
3.	5000	1500	4064	3798	1900	1250	550	4200	570	1878	130	2687	1768	884	5839	846	2804	–146
4.	6000	1500	4242	3861	4100	1700	470	6770	480	2031	220	5798	2404	685	9387	822	3828	–122
5.	6000	2000	4316	4409	2700	1550	670	5420	750	2309	450	3818	2192	1419	8139	1219	3431	–19
6.	7000	2000	4664	4532	4700	2030	630	7860	700	2482	500	6647	2871	1484	11712	1299	4351	–99

TABLE No. – 3

SALIENT DIMENSIONS OF PCC WING WALL
CONSIDERING NET SBC= 15t/m2 PCC (M20)

				SECTION 1–1								SECTION 3–3						
S.NO.	MAX.HT. HO (mm)	DEPTH OF FOUND. DF(mm)	LENGTH BETWEEN SEC. 1–1 AND SEC. 2–2 (mm)	HT.AT SEC 1–1 HS (mm)	C1S (mm)	C2S (mm)	C3S (mm)	BS (mm)	D1S (mm)	D2S (mm)	D4S (mm)	C1M (mm)	C2M (mm)	C3M (mm)	BM (mm)	D1M (mm)	D2M (mm)	D4M (mm)
1.	3000	1500	707	2611	0	850	460	1810	280	981	420	0	1202	651	2353	342	1308	358
2.	4000	1500	2785	3346	600	1000	500	2600	500	1496	200	849	1414	745	3508	673	1977	27
3.	5000	1500	4814	4063	1100	1300	480	3360	620	2093	80	1556	1838	651	4545	829	2821	–129
4.	6000	1500	4442	3932	3800	1800	480	6560	500	2082	200	5374	2546	651	9071	842	3808	–142
5.	6000	2000	5566	4851	1450	1550	600	4100	910	2591	290	2051	2192	1055	6008	1266	3384	–66
6.	7000	2000	6244	5091	2800	2350	510	6150	750	2991	450	3960	3323	917	8910	1139	4511	61
7.	8000	2000	6633	5228	4700	2890	480	8570	700	3178	500	6647	4087	896	12340	1173	5477	27
8.	9000	2000	6351	5129	7300	3400	410	11610	580	3199	620	10324	4808	726	16568	1063	6587	137
9.	10000	2000	6000	5004	9800	4080	300	14680	420	3234	780	13859	5770	258	20597	703	7947	497

NOTES:

1. FOR GENERAL NOTES REFER. DRG. NO. SD/101
2. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRG. No. SD/113 (SHEET 1 & 2 OF 6)
3. WING WALL IS DESIGNED FOR SEVERE CONDITION OF EXPOSURE AND SAME STRUCTURE CAN BE USED FOR MODERATE CONDITION OF EXPOSURE.
4. MIN. VALUE OF D4M ALLOWABLE : –150mm. IF .D4M IS (–VE) , IT SHOULD BE MEASURED ABOVE BED LEVEL & FOR (+VE) VALUES, IT SHOULD BE TAKEN BELOW BED LEVEL.

GOVERNMENT OF INDIA
MINISTRY OF SURFACE TRANSPORT
(ROADS WING) , NEW DELHI.

STANDARD DRAWINGS FOR BOX CELL STRUCTURES

DIMENSION SCHEDULE FOR PCC WING WALL (GENERAL)

DESIGNED BY	CHECKED BY	APPROVED FOR ISSUE BY	1999
(A.R.GHOSH) CONSULTING ENGINEERING SERVICES (I) LTD.	(M.C.TANDON) TANDON CONSULTANTS (PVT) LTD.	(C.C.BHATTACHARYA) C.E. (R) S&R MOST.	DRG. NO. SD/113 (SHEET 3 OF 6)

Source: MoST Standard Drawings for Box Cell Culverts (2000) - older reference, verify with current IRC / MoRTH. Scan cleaned by helptheengineer.com

TABLE No. – 4

SALIENT DIMENSIONS OF PCC WING WALL
PCC (M20)

SL NO	BOX DESIGNATION Nc\ab\Ec	NET SAFE BEARING CAPACITY T/Sqm	MAX.HT. HO (mm)	DEPTH OF FOUND. DF(mm)	LENGTH OF W.WALL WL(mm)	LENGTH BETWEEN SEC. 1–1 AND SEC. 2–2 (mm)	SECTION 1–1								SECTION 3–3							TOTAL VOLUME OF CONCRETE IN WING WALL (cum.)
							HT.AT SEC 1–1 HS (mm)	C1S (mm)	C2S (mm)	C3S (mm)	BS (mm)	D1S (mm)	D2S (mm)	D4S (mm)	C1M (mm)	C2M (mm)	C3M (mm)	BM (mm)	D1M (mm)	D2M (mm)	D4M (mm)	
1	1/22/3	10	3450	1500	3535	1710	2966	225	895	523	2143	424	1192	276	318	1266	791	3085	552	1548	148	44.03
2	1/23/3	10	4480	1500	6448	3477	3591	1172	1094	576	3342	586	1655	114	1657	1548	925	4840	826	2304	–126	94.88
3	1/33/3	10	4570	1500	6702	3579	3628	1298	1121	572	3491	583	1694	117	1836	1586	918	5049	830	2390	–130	100.43
4	1/34/3	10	5570	1500	9530	4165	3834	3154	1507	504	5665	519	1965	181	4460	2131	771	8071	832	3388	–132	178.97
5	1/43/3	10	4670	1500	6985	3691	3666	1438	1151	567	3656	580	1736	120	2034	1628	910	5282	833	2487	–133	106.83
6	1/44/3	15	5670	1500	9813	4565	3975	2909	1635	460	5504	540	2086	160	4114	2312	651	7787	838	3482	–138	190.91
7	1/45/3	15	7150	2000	12585	6302	5112	3085	2431	506	6522	743	3019	458	4363	3438	914	9425	1144	4656	56	421.07
8	1/53/3	10	4750	1500	7211	3782	3698	1550	1175	563	3788	578	1771	123	2192	1662	904	5468	837	2564	–137	112.11
9	1/54/3	10	5750	1500	10039	4198	3845	3550	1588	490	6128	503	1993	198	5020	2245	735	8710	828	3572	–128	196.42
10	1/55/3	15	7250	2000	12867	6341	5125	3275	2485	503	6763	738	3038	463	4632	3514	912	9768	1148	4753	53	440.90
11	1/63/3	10	4850	1500	7494	3895	3738	1690	1205	558	3953	575	1814	126	2390	1704	896	5700	840	2660	–140	118.94
12	1/64/3	10	5900	1500	10464	4224	3855	3880	1655	478	6513	489	2016	211	5487	2340	705	9242	824	3726	–124	211.69
13	1/65/3	15	7350	2000	13150	6380	5139	3465	2539	500	7004	733	3056	468	4900	3590	910	10111	1151	4849	49	461.28
14	1/66/3	15	8350	2000	15978	6534	5193	5610	3069	456	9634	658	3185	542	7934	4339	837	13820	1135	5866	66	693.21
15	1/75/3	15	7450	2000	13433	6419	5153	3655	2593	497	7245	728	3075	473	5169	3667	908	10454	1154	4946	46	482.21
16	1/76/3	15	8450	2000	18261	6506	5183	5870	3120	449	9938	646	3187	554	8302	4411	820	14243	1124	5977	76	718.79
17	1/77/3	15	9450	2000	19089	6193	5073	8425	3706	361	12992	508	3215	692	11915	5241	515	18381	901	7199	299	1012.62
18	1/85/3	15	7570	2000	13772	6466	5189	3883	2658	493	7534	722	3098	479	5492	3758	905	10865	1158	5062	42	508.09
19	1/86/3	15	8550	2000	16544	6478	5174	6130	3171	442	10242	634	3190	566	8669	4484	803	14665	1113	6088	88	744.90
20	1/87/3	15	9550	2000	19372	6158	5060	8675	3774	350	13299	492	3218	708	12268	5337	469	18784	865	7335	335	1046.53
21	1/22/4	10	3480	1500	3620	1776	2989	240	898	527	2165	434	1206	266	339	1270	801	3120	566	1564	134	45.19
22	1/23/4	10	4520	1500	6561	3522	3606	1228	1106	574	3408	584	1672	116	1737	1564	922	4933	828	2342	–128	97.33
23	1/33/4	10	4580	1500	6731	3590	3630	1312	1124	571	3507	583	1698	117	1855	1590	917	5073	830	2400	–130	101.06
24	1/34/4	15	5600	1500	9615	4591	3984	2720	1600	460	5280	548	2086	152	3847	2263	651	7471	837	3413	–137	183.46
25	1/43/4	10	4700	1500	7070	3725	3678	1480	1160	565	3705	579	1749	121	2093	1641	908	5352	835	2515	–135	108.79
26	1/44/4	15	5700	1500	9898	4554	3971	2990	1650	460	5600	536	2085	164	4229	2334	651	7923	838	3512	–138	194.15
27	1/45/4	15	7200	2000	12726	6322	5118	3180	2458	504	6642	740	3028	460	4497	3476	913	9596	1146	4704	54	430.92
28	1/53/4	10	4820	1500	7409	3861	3726	1648	1196	559	3903	575	1801	125	2331	1692	898	5631	839	2631	–139	116.87
29	1/54/4	15	5800	1500	10181	4516	3958	3260	1700	460	5920	524	2084	176	4610	2404	651	8376	839	3611	–139	205.13
30	1/55/4	15	7300	2000	13009	6361	5132	3370	2512	501	6883	735	3047	465	4766	3552	911	9939	1149	4801	51	451.02
31	1/63/4	10	4950	1500	7777	4008	3778	1830	1235	553	4118	572	1857	129	2588	1747	888	5933	844	2756	–144	126.01
32	1/64/4	15	5950	1500	10605	4461	3939	3665	1775	480	6400	506	2083	194	5183	2511	651	9055	841	3759	–141	222.19
33	1/65/4	15	7400	2000	13292	6400	5146	3560	2566	498	7124	730	3066	470	5035	3629	909	10282	1153	4897	47	471.68
34	1/66/4	15	8400	2000	16120	6520	5188	5740	3094	452	9786	652	3186	548	8118	4375	828	14031	1129	5921	71	705.94
35	1/75/4	15	7550	2000	13716	6458	5166	3845	2647	494	7486	723	3094	478	5438	3743	905	10797	1158	5042	42	503.72
36	1/76/4	15	8520	2000	16459	6486	5177	6052	3155	444	10151	638	3189	562	8559	4462	808	14539	1116	6054	84	737.01
37	1/77/4	15	9520	2000	19287	6168	5064	8600	3754	353	13206	497	3217	703	12162	5308	483	18663	876	7294	324	1036.27
38	1/85/4	15	7650	2000	13999	6497	5180	4035	2701	491	7727	718	3113	483	5707	3820	903	11140	1161	5139	39	525.79
39	1/86/4	15	8650	2000	16827	6450	5164	6390	3222	435	10546	622	3192	578	9037	4556	786	15088	1102	6199	99	771.55

NOTES:

1. FOR ALL NOTES REFER. DRG. NO. SD/113 (SHEET 3 OF 6)
2. THIS DRAWING SHALL BE READ IN CONJUNCTION TO FOLLOWING DRAWINGS–
   –SD/113 (SHEET 1 TO 3 OF 5)
   –SD/103 (SHEET 1 & 2 OF 2) , SD/105 & SD/107
   –SD/102 , SD/104 & SD/106
3. THE VARIOUS VARIABLES FOR DIFFERENT CASES OF BOX – CULVERTS ARE INTER POLATED FROM TABLES GIVEN IN DRG. NO. SD/113 (SHEET 3 OF 6)
   THE GIVEN CONCRETE QUANTITY IS FOR ALL THE FOUR ARMS OF WING WALL.
4. FOR INTERMEDIATE HEIGHT/SECTIONS OF BOX CULVERTS, WING WALL DIMENSIONS SHALL BE INTERPOLATED FOR ACTUAL MAXIMUM HEIGHT OF WALL & CORRESPONDING SAFE BEARING CAPACITY USING DIMENSION SCHEDULE GIVEN IN DRG. NO. SD/113 (SHEET 3 OF 6)

GOVERNMENT OF INDIA
MINISTRY OF SURFACE TRANSPORT
(ROADS WING) , NEW DELHI.

STANDARD DRAWINGS FOR BOX CELL STRUCTURES

DIMENSION SCHEDULE FOR PCC WING WALL
(WITH EARTH CUSHION CASES)

DESIGNED BY	CHECKED BY	APPROVED FOR ISSUE BY	1999
(A.R.GHOSH) CES (I) LTD	(M.C.TANDON) TCPL	(C.C.BHATTACHARYA) C.E (R) S&R MOST	DRG. NO. SD/113 (SHEET 4 OF 6)

Source: MoST Standard Drawings for Box Cell Culverts (2000) - older reference, verify with current IRC / MoRTH. Scan cleaned by helptheengineer.com

TABLE No. – 4 (CONT...)

SALIENT DIMENSIONS OF PCC WING WALL PCC (M20)

SL NO	BOX DESIGNATION Nc\ob\Ec	NET SAFE BEARING CAPACITY T/Sqm	MAX.HT. HO (mm)	DEPTH OF FOUND. DF(mm)	LENGTH OF W.WALL WL(mm)	LENGTH BETWEEN SEC. 1–1 AND SEC. 2–2(mm)	SECTION 1–1								SECTION 3–3							TOTAL VOLUME OF CONCRETE IN WING WALL (cum.)
							HT.AT SEC 1–1 HS (mm)	C1S (mm)	C2S (mm)	C3S (mm)	BS (mm)	D1S (mm)	D2S (mm)	D4S (mm)	C1M (mm)	C2M (mm)	C3M (mm)	BM (mm)	D1M (mm)	D2M (mm)	D4M (mm)	
40	1/67/4	15	9650	2000	19655	6123	5048	8925	3842	339	13606	476	3222	724	12622	5433	422	19187	829	7471	371	1081.20
41	1/22/5	10	3500	1500	3676	1821	3005	250	900	530	2180	440	1215	260	354	1273	807	3144	575	1575	125	45.98
42	1/23/5	15	4520	1500	6561	3840	3719	860	1156	479	2995	562	1806	138	1217	1634	696	4257	754	2416	–54	93.78
43	1/33/5	10	4620	1500	6844	3635	3648	1368	1136	569	3573	581	1715	119	1935	1807	914	5166	832	2438	–132	103.60
44	1/34/5	15	5650	1500	9757	4572	3978	2855	1625	460	5440	542	2086	158	4038	2298	651	7697	837	3463	–137	188.77
45	1/43/5	10	4770	1500	7268	3804	3706	1578	1181	562	3821	577	1779	123	2232	1670	902	5514	837	2583	–137	113.46
46	1/44/5	15	5700	1500	9898	4554	3971	2990	1650	460	5600	536	2085	164	4229	2334	651	7923	838	3512	–138	194.15
47	1/45/5	15	7250	2000	12867	6341	5125	3275	2485	503	6763	738	3038	463	4632	3514	912	9768	1148	4753	53	440.90
48	1/53/5	15	4870	1500	7551	4550	3970	1035	1261	465	3261	604	2015	96	1464	1783	663	4620	809	2711	–109	115.96
49	1/54/5	15	5850	1500	10322	4498	3952	3395	1725	460	6080	518	2084	182	4801	2440	651	8602	840	3660	–140	210.74
50	1/55/5	15	7350	2000	13150	6380	5139	3465	2539	500	7004	733	3056	468	4900	3590	910	10111	1151	4849	49	461.28
51	1/63/5	15	5020	1500	7975	4807	4060	1154	1310	460	3424	618	2093	82	1632	1852	651	4846	829	2841	–129	126.81
52	1/64/5	15	6500	2000	10746	5905	4971	2125	1950	565	5130	830	2791	370	3006	2758	986	7459	1203	3948	–3	301.60
53	1/65/5	15	7470	2000	13490	6427	5155	3693	2604	496	7293	727	3079	474	5223	3682	907	10522	1155	4965	45	486.47
54	1/66/5	15	8450	2000	16261	6506	5183	5870	3120	449	9938	646	3187	554	8302	4411	820	14243	1124	5977	76	718.79
55	1/75/5	15	7620	2000	13914	6485	5176	3978	2685	491	7654	719	3107	481	5626	3797	904	11037	1160	5110	40	519.11
56	1/76/5	15	8570	2000	16800	6472	5172	6182	3181	440	10303	632	3190	568	8743	4498	799	14750	1110	6110	90	750.19
57	1/77/5	15	9600	2000	19513	6140	5054	8800	3808	344	13452	484	3220	716	12445	5385	445	18985	847	7403	353	1063.77
58	1/85/5	15	7800	2000	14423	6555	5201	4320	2782	486	8088	710	3141	490	6110	3934	900	11654	1166	5284	34	560.01
59	1/86/5	15	8750	2000	17109	6422	5154	6650	3273	428	10850	610	3194	590	9405	4628	769	15511	1091	6310	110	798.74
60	1/87/5	15	9750	2000	19937	6088	5035	9175	3910	328	13913	460	3225	740	12975	5530	375	19590	793	7607	407	1116.66
61	2/22/3	10	3470	1500	3592	1754	2981	235	897	526	2158	430	1201	270	332	1269	798	3109	561	1559	139	44.80
62	2/22/4	10	3500	1500	3676	1821	3005	250	900	530	2180	440	1215	260	354	1273	807	3144	575	1575	125	45.98
63	2/22/5	10	3520	1500	3733	1866	3021	260	902	533	2195	446	1224	254	368	1276	813	3167	584	1586	116	46.78
64	2/23/3	10	4500	1500	6504	3500	3599	1200	1100	575	3375	585	1664	115	1697	1556	924	4887	827	2323	–127	96.10
65	2/23/4	10	4520	1500	6561	3522	3606	1228	1106	574	3408	584	1672	116	1737	1564	922	4933	828	2342	–128	97.33
66	2/23/5	10	4550	1500	6646	3556	3618	1270	1115	573	3458	584	1685	117	1796	1577	920	5003	829	2371	–129	99.18
67	2/32/3	10	3600	1500	3959	2044	3084	300	910	544	2254	472	1262	228	424	1287	838	3260	622	1628	78	50.04
68	2/32/4	10	3650	1500	4101	2155	3123	325	915	551	2291	488	1285	212	460	1294	854	3318	645	1655	55	52.14
69	2/32/5	10	3650	1500	4101	2155	3123	325	915	551	2291	488	1285	212	460	1294	854	3318	645	1655	55	52.14
70	2/33/3	10	4600	1500	6787	3612	3638	1340	1130	570	3540	582	1706	118	1895	1598	916	5119	831	2419	–131	102.33
71	2/33/4	10	4630	1500	6872	3646	3650	1382	1139	569	3590	581	1719	119	1954	1611	913	5189	832	2448	–132	104.24
72	2/33/5	10	4680	1500	7013	3703	3670	1452	1154	566	3672	580	1741	120	2053	1632	909	5305	834	2496	–134	107.48
73	3/22/3	10	3470	1500	3592	1754	2981	235	897	526	2158	430	1201	270	332	1269	798	3109	561	1559	139	44.80
74	3/22/4	10	3500	1500	3676	1821	3005	250	900	530	2180	440	1215	260	354	1273	807	3144	575	1575	125	45.98
75	3/22/5	10	3500	1500	3676	1821	3005	250	900	530	2180	440	1215	260	354	1273	807	3144	575	1575	125	45.98
76	3/33/3	10	4550	1500	6646	3556	3618	1270	1115	573	3458	584	1685	117	1796	1577	920	5003	829	2371	–129	99.18
77	3/33/4	10	4600	1500	6787	3612	3638	1340	1130	570	3540	582	1706	118	1895	1598	916	5119	831	2419	–131	102.33
78	3/33/5	10	4650	1500	6929	3669	3658	1410	1145	568	3623	581	1728	120	1994	1620	912	5235	833	2467	–133	105.53

NOTES:

1. FOR ALL NOTES REFER. DRG. NO. SD/113 (SHEET 4 OF 6)

GOVERNMENT OF INDIA
MINISTRY OF SURFACE TRANSPORT
(ROADS WING) , NEW DELHI.

STANDARD DRAWINGS FOR BOX CELL STRUCTURES

DIMENSION SCHEDULE FOR PCC WING WALL
(WITH EARTH CUSHION CASES)

DESIGNED BY	CHECKED BY	APPROVED FOR ISSUE BY	1999
(A.R.GHOSH) CES (I) LTD	(M.C.TANDON) TCPL	(C.C.BHATTACHARYA) C.E (R) S&R MOST	DRG. NO. SD/113 (SHEET 5 OF 6)

Source: MoST Standard Drawings for Box Cell Culverts (2000) - older reference, verify with current IRC / MoRTH. Scan cleaned by helptheengineer.com

TABLE No. – 5 (CONT...)

SALIENT DIMENSIONS OF PCC WING WALL PCC (M20)

SL NO.	BOX DESIGNATION Nc\ab\Ec	NET SAFE BEARING CAPACITY T/Sqm	MAX.HT. HO (mm)	DEPTH OF FOUND. DF(mm)	LENGTH OF W.WALL WL(mm)	LENGTH BETWEEN SEC. 1–1 AND SEC. 2–2(mm)	SECTION 1–1								SECTION 3–3							TOTAL VOLUME OF CONCRETE IN WING WALL (cum.)
							HT.AT SEC 1–1 HS (mm)	C1S (mm)	C2S (mm)	C3S (mm)	BS (mm)	D1S (mm)	D2S (mm)	D4S (mm)	C1M (mm)	C2M (mm)	C3M (mm)	BM (mm)	D1M (mm)	D2M (mm)	D4M (mm)	
1	1/22/0	15	3550	1500	3818	1850	3015	330	933	482	2245	401	1264	299	467	1319	703	3198	524	1676	176	47.10
2	1/23/0	15	4570	1500	6702	3942	3755	885	1171	477	3033	568	1838	132	1252	1656	691	4309	762	2458	–62	96.76
3	1/33/0	15	4620	1500	6844	4043	3791	910	1186	475	3071	574	1866	126	1287	1677	687	4361	770	2500	–70	99.80
4	1/34/0	15	5650	1500	9757	4572	3978	2855	1625	460	5440	542	2086	158	4038	2298	651	7697	837	3463	–137	188.77
5	1/43/0	15	4650	1500	6929	4104	3812	925	1195	474	3094	578	1884	122	1309	1690	684	4392	774	2526	–74	101.65
6	1/44/0	15	5680	1500	9841	4561	3974	2936	1640	460	5536	538	2086	162	4152	2319	651	7833	838	3492	–138	191.99
7	1/45/0	15	7220	2000	12783	6330	5121	3218	2469	503	6690	739	3032	461	4551	3491	912	9665	1146	4724	54	434.89
8	1/53/0	10	4700	1500	7070	3725	3678	1480	1160	565	3705	579	1749	121	2093	1641	908	5352	835	2515	–135	108.79
9	1/54/0	15	5720	1500	9955	4546	3969	3044	1660	460	5664	534	2085	166	4305	2348	651	8014	838	3532	–138	196.32
10	1/55/0	15	7280	2000	12952	6353	5129	3332	2501	502	6835	736	3043	464	4712	3537	911	9870	1149	4781	51	446.95
11	1/63/0	10	4880	1500	7579	3929	3750	1732	1214	556	4002	574	1827	126	2449	1717	893	5770	841	2689	–141	121.04
12	1/64/0	15	5880	1500	10407	4487	3948	3476	1740	460	6176	514	2083	186	4916	2461	651	8738	840	3690	–140	214.14
13	1/65/0	15	7380	2000	13235	6392	5143	3522	2555	499	7076	731	3082	469	4981	3613	909	10213	1152	4878	48	467.50
14	1/66/0	15	8400	2000	16120	6520	5188	5740	3094	452	9786	652	3186	548	8118	4375	828	14031	1129	5921	71	705.94
15	1/75/0	15	7450	2000	13433	6419	5153	3655	2563	497	7245	728	3075	473	5169	3667	908	10454	1154	4946	46	482.21
16	1/76/0	15	8480	2000	16348	6498	5180	5948	3135	446	10029	642	3188	558	8412	4433	814	14369	1120	6010	80	726.57
17	1/77/0	15	9480	2000	19174	6183	5089	8500	3726	357	13084	503	3216	697	12021	5270	501	18502	890	7240	310	1022.71
18	1/85/0	15	7500	2000	13574	6439	5160	3750	2620	495	7365	725	3085	475	5304	3705	907	10625	1156	4994	44	492.89
19	1/86/0	15	8520	2000	16459	6486	5177	6052	3155	444	10151	638	3189	562	8559	4462	808	14539	1116	6054	84	737.01
20	1/87/0	15	9550	2000	19372	6158	5060	8675	3774	350	13299	492	3218	708	12268	5337	469	18784	865	7335	335	1046.53
21	2/22/0	10	3500	1500	3659	2044	3084	300	910	544	2254	472	1262	228	424	1287	838	3260	622	1628	78	50.04
22	2/23/0	15	4600	1500	6787	4002	3776	900	1180	476	3056	572	1854	128	1273	1668	689	4340	767	2483	–67	98.58
23	2/32/0	10	3650	1500	4101	2155	3123	325	915	551	2291	488	1285	212	460	1294	854	3318	645	1655	55	52.14
24	2/33/0	10	4670	1500	6985	3691	3666	1438	1151	567	3656	580	1736	120	2034	1628	910	5282	833	2487	–133	106.83
25	3/22/0	10	3570	1500	3874	1977	3060	285	907	540	2232	462	1248	238	403	1283	829	3225	608	1612	92	48.80
26	3/33/0	10	4650	1500	6929	3669	3658	1410	1145	568	3623	581	1728	120	1994	1620	912	5235	833	2467	–133	105.53

NOTES:

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STANDARD DRAWINGS FOR BOX CELL STRUCTURES

DIMENSION SCHEDULE FOR PCC WING WALL
(WITHOUT EARTH CUSHION CASES)

DESIGNED BY	CHECKED BY	APPROVED FOR ISSUE BY	1999
(A.R.GHOSH) CES (I) LTD	(M.C.TANDON) TCPL	(C.C.BHATTACHARYA) C.E (R) S&R MOST	DRG. NO. SD/113 (SHEET 6 OF 6)

Source: MoST Standard Drawings for Box Cell Culverts (2000) - older reference, verify with current IRC / MoRTH. Scan cleaned by helptheengineer.com