

APPENDIX J

DESIGN STORMS

APPENDIX J – DESIGN STORMS

Time (hr)	24-hour SCS Storm Rainfall Intensities					
	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year
0.17	0.474	0.672	0.804	0.970	1.093	1.215
0.33	0.474	0.672	0.804	0.970	1.093	1.215
0.50	0.474	0.672	0.804	0.970	1.093	1.215
0.67	0.474	0.672	0.804	0.970	1.093	1.215
0.83	0.474	0.672	0.804	0.970	1.093	1.215
1.00	0.474	0.672	0.804	0.970	1.093	1.215
1.17	0.474	0.672	0.804	0.970	1.093	1.215
1.33	0.474	0.672	0.804	0.970	1.093	1.215
1.50	0.474	0.672	0.804	0.970	1.093	1.215
1.67	0.474	0.672	0.804	0.970	1.093	1.215
1.83	0.474	0.672	0.804	0.970	1.093	1.215
2.00	0.474	0.672	0.804	0.970	1.093	1.215
2.17	0.474	0.672	0.804	0.970	1.093	1.215
2.33	0.474	0.672	0.804	0.970	1.093	1.215
2.50	0.474	0.672	0.804	0.970	1.093	1.215
2.67	0.474	0.672	0.804	0.970	1.093	1.215
2.83	0.474	0.672	0.804	0.970	1.093	1.215
3.00	0.474	0.672	0.804	0.970	1.093	1.215
3.17	0.474	0.672	0.804	0.970	1.093	1.215
3.33	0.474	0.672	0.804	0.970	1.093	1.215
3.50	0.474	0.672	0.804	0.970	1.093	1.215
3.67	0.474	0.672	0.804	0.970	1.093	1.215
3.83	0.474	0.672	0.804	0.970	1.093	1.215
4.00	0.474	0.672	0.804	0.970	1.093	1.215
4.17	0.948	1.344	1.608	1.940	2.186	2.430
4.33	0.948	1.344	1.608	1.940	2.186	2.430
4.50	0.948	1.344	1.608	1.940	2.186	2.430
4.67	0.948	1.344	1.608	1.940	2.186	2.430
4.83	0.948	1.344	1.608	1.940	2.186	2.430
5.00	0.948	1.344	1.608	1.940	2.186	2.430
5.17	0.948	1.344	1.608	1.940	2.186	2.430
5.33	0.948	1.344	1.608	1.940	2.186	2.430
5.50	0.948	1.344	1.608	1.940	2.186	2.430
5.67	0.948	1.344	1.608	1.940	2.186	2.430
5.83	0.948	1.344	1.608	1.940	2.186	2.430
6.00	0.948	1.344	1.608	1.940	2.186	2.430
6.17	0.948	1.344	1.608	1.940	2.186	2.430
6.33	0.948	1.344	1.608	1.940	2.186	2.430
6.50	0.948	1.344	1.608	1.940	2.186	2.430
6.67	0.948	1.344	1.608	1.940	2.186	2.430
6.83	0.948	1.344	1.608	1.940	2.186	2.430
7.00	0.948	1.344	1.608	1.940	2.186	2.430

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Time (hr)	24-hour SCS Storm Rainfall Intensities					
	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year
7.17	0.948	1.344	1.608	1.940	2.186	2.430
7.33	0.948	1.344	1.608	1.940	2.186	2.430
7.50	0.948	1.344	1.608	1.940	2.186	2.430
7.67	0.948	1.344	1.608	1.940	2.186	2.430
7.83	0.948	1.344	1.608	1.940	2.186	2.430
8.00	0.948	1.344	1.608	1.940	2.186	2.430
8.17	1.659	2.352	2.814	3.395	3.826	4.252
8.33	1.659	2.352	2.814	3.395	3.826	4.252
8.50	1.659	2.352	2.814	3.395	3.826	4.252
8.67	1.659	2.352	2.814	3.395	3.826	4.252
8.83	1.659	2.352	2.814	3.395	3.826	4.252
9.00	1.659	2.352	2.814	3.395	3.826	4.252
9.17	1.659	2.352	2.814	3.395	3.826	4.252
9.33	1.659	2.352	2.814	3.395	3.826	4.252
9.50	1.659	2.352	2.814	3.395	3.826	4.252
9.67	1.659	2.352	2.814	3.395	3.826	4.252
9.83	1.659	2.352	2.814	3.395	3.826	4.252
10.00	1.659	2.352	2.814	3.395	3.826	4.252
10.17	12.087	17.136	20.502	24.735	27.872	30.982
10.33	12.087	17.136	20.502	24.735	27.872	30.982
10.50	12.087	17.136	20.502	24.735	27.872	30.982
10.67	12.087	17.136	20.502	24.735	27.872	30.982
10.83	12.087	17.136	20.502	24.735	27.872	30.982
11.00	12.087	17.136	20.502	24.735	27.872	30.982
11.17	12.087	17.136	20.502	24.735	27.872	30.982
11.33	12.087	17.136	20.502	24.735	27.872	30.982
11.50	12.087	17.136	20.502	24.735	27.872	30.982
11.67	12.087	17.136	20.502	24.735	27.872	30.982
11.83	12.087	17.136	20.502	24.735	27.872	30.982
12.00	12.087	17.136	20.502	24.735	27.872	30.982
12.17	3.081	4.368	5.226	6.305	7.104	7.897
12.33	3.081	4.368	5.226	6.305	7.104	7.897
12.50	3.081	4.368	5.226	6.305	7.104	7.897
12.67	3.081	4.368	5.226	6.305	7.104	7.897
12.83	3.081	4.368	5.226	6.305	7.104	7.897
13.00	3.081	4.368	5.226	6.305	7.104	7.897
13.17	3.081	4.368	5.226	6.305	7.104	7.897
13.33	3.081	4.368	5.226	6.305	7.104	7.897
13.50	3.081	4.368	5.226	6.305	7.104	7.897
13.67	3.081	4.368	5.226	6.305	7.104	7.897
13.83	3.081	4.368	5.226	6.305	7.104	7.897
14.00	3.081	4.368	5.226	6.305	7.104	7.897

APPENDIX J – DESIGN STORMS

Time (hr)	24-hour SCS Storm Rainfall Intensities					
	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year
14.17	1.422	2.016	2.412	2.910	3.279	3.645
14.33	1.422	2.016	2.412	2.910	3.279	3.645
14.50	1.422	2.016	2.412	2.910	3.279	3.645
14.67	1.422	2.016	2.412	2.910	3.279	3.645
14.83	1.422	2.016	2.412	2.910	3.279	3.645
15.00	1.422	2.016	2.412	2.910	3.279	3.645
15.17	1.422	2.016	2.412	2.910	3.279	3.645
15.33	1.422	2.016	2.412	2.910	3.279	3.645
15.50	1.422	2.016	2.412	2.910	3.279	3.645
15.67	1.422	2.016	2.412	2.910	3.279	3.645
15.83	1.422	2.016	2.412	2.910	3.279	3.645
16.00	1.422	2.016	2.412	2.910	3.279	3.645
16.17	0.948	1.344	1.608	1.940	2.186	2.430
16.33	0.948	1.344	1.608	1.940	2.186	2.430
16.50	0.948	1.344	1.608	1.940	2.186	2.430
16.67	0.948	1.344	1.608	1.940	2.186	2.430
16.83	0.948	1.344	1.608	1.940	2.186	2.430
17.00	0.948	1.344	1.608	1.940	2.186	2.430
17.17	0.948	1.344	1.608	1.940	2.186	2.430
17.33	0.948	1.344	1.608	1.940	2.186	2.430
17.50	0.948	1.344	1.608	1.940	2.186	2.430
17.67	0.948	1.344	1.608	1.940	2.186	2.430
17.83	0.948	1.344	1.608	1.940	2.186	2.430
18.00	0.948	1.344	1.608	1.940	2.186	2.430
18.17	0.711	1.008	1.206	1.455	1.822	1.822
18.33	0.711	1.008	1.206	1.455	1.822	1.822
18.50	0.711	1.008	1.206	1.455	1.822	1.822
18.67	0.711	1.008	1.206	1.455	1.822	1.822
18.83	0.711	1.008	1.206	1.455	1.822	1.822
19.00	0.711	1.008	1.206	1.455	1.822	1.822
19.17	0.711	1.008	1.206	1.455	1.822	1.822
19.33	0.711	1.008	1.206	1.455	1.822	1.822
19.50	0.711	1.008	1.206	1.455	1.822	1.822
19.67	0.711	1.008	1.206	1.455	1.822	1.822
19.83	0.711	1.008	1.206	1.455	1.822	1.822
20.00	0.711	1.008	1.206	1.455	1.822	1.822
20.17	0.474	0.672	0.804	0.970	1.215	1.215
20.33	0.474	0.672	0.804	0.970	1.215	1.215
20.50	0.474	0.672	0.804	0.970	1.215	1.215
20.67	0.474	0.672	0.804	0.970	1.215	1.215
20.83	0.474	0.672	0.804	0.970	1.215	1.215
21.00	0.474	0.672	0.804	0.970	1.215	1.215

APPENDIX J – DESIGN STORMS

Time (hr)	24-hour SCS Storm Rainfall Intensities					
	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year
21.17	0.474	0.672	0.804	0.970	1.215	1.215
21.33	0.474	0.672	0.804	0.970	1.215	1.215
21.50	0.474	0.672	0.804	0.970	1.215	1.215
21.67	0.474	0.672	0.804	0.970	1.215	1.215
21.83	0.474	0.672	0.804	0.970	1.215	1.215
22.00	0.474	0.672	0.804	0.970	1.215	1.215
22.17	0.474	0.672	0.804	0.970	1.215	1.215
22.33	0.474	0.672	0.804	0.970	1.215	1.215
22.50	0.474	0.672	0.804	0.970	1.215	1.215
22.67	0.474	0.672	0.804	0.970	1.215	1.215
22.83	0.474	0.672	0.804	0.970	1.215	1.215
23.00	0.474	0.672	0.804	0.970	1.215	1.215
23.17	0.474	0.672	0.804	0.970	1.215	1.215
23.33	0.474	0.672	0.804	0.970	1.215	1.215
23.50	0.474	0.672	0.804	0.970	1.215	1.215
23.67	0.474	0.672	0.804	0.970	1.215	1.215
23.83	0.474	0.672	0.804	0.970	1.215	1.215
24.00	0.474	0.672	0.804	0.970	1.215	1.215

APPENDIX J – DESIGN STORMS

Time (hr)	24-hour Chicago Storm Rainfall Intensities					
	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year
0.17	0.362	0.556	0.682	0.853	0.990	1.170
0.33	0.368	0.566	0.694	0.868	1.008	1.190
0.50	0.375	0.576	0.707	0.883	1.026	1.211
0.67	0.382	0.587	0.720	0.899	1.044	1.232
0.83	0.390	0.598	0.734	0.916	1.064	1.255
1.00	0.398	0.610	0.748	0.934	1.084	1.278
1.17	0.406	0.622	0.763	0.952	1.105	1.303
1.33	0.414	0.635	0.778	0.972	1.128	1.329
1.50	0.423	0.648	0.795	0.992	1.151	1.356
1.67	0.433	0.662	0.812	1.013	1.175	1.384
1.83	0.442	0.677	0.830	1.035	1.201	1.413
2.00	0.453	0.693	0.849	1.058	1.228	1.444
2.17	0.464	0.709	0.869	1.083	1.256	1.477
2.33	0.475	0.726	0.890	1.109	1.286	1.511
2.50	0.488	0.744	0.912	1.136	1.317	1.548
2.67	0.501	0.764	0.935	1.165	1.350	1.586
2.83	0.514	0.784	0.960	1.196	1.385	1.626
3.00	0.529	0.806	0.986	1.228	1.423	1.669
3.17	0.544	0.829	1.014	1.263	1.462	1.715
3.33	0.561	0.853	1.044	1.299	1.505	1.764
3.50	0.579	0.880	1.076	1.339	1.550	1.816
3.67	0.598	0.908	1.110	1.381	1.598	1.871
3.83	0.618	0.938	1.147	1.426	1.650	1.931
4.00	0.640	0.971	1.186	1.475	1.706	1.995
4.17	0.664	1.006	1.229	1.527	1.767	2.064
4.33	0.690	1.044	1.275	1.584	1.832	2.139
4.50	0.718	1.086	1.326	1.646	1.903	2.220
4.67	0.749	1.132	1.381	1.714	1.981	2.309
4.83	0.783	1.182	1.442	1.789	2.067	2.407
5.00	0.821	1.237	1.509	1.871	2.161	2.514
5.17	0.863	1.299	1.583	1.962	2.266	2.633
5.33	0.910	1.368	1.666	2.064	2.383	2.766
5.50	0.964	1.446	1.760	2.179	2.514	2.915
5.67	1.024	1.534	1.867	2.309	2.663	3.084
5.83	1.094	1.635	1.989	2.459	2.834	3.277
6.00	1.175	1.753	2.130	2.632	3.032	3.500
6.17	1.270	1.891	2.296	2.835	3.264	3.761
6.33	1.384	2.056	2.495	3.076	3.540	4.071
6.50	1.524	2.257	2.736	3.370	3.875	4.447
6.67	1.699	2.507	3.036	3.736	4.292	4.911

APPENDIX J – DESIGN STORMS

Time (hr)	24-hour Chicago Storm Rainfall Intensities					
	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year
6.83	1.925	2.829	3.422	4.204	4.825	5.504
7.00	2.228	3.259	3.936	4.828	5.534	6.288
7.17	2.660	3.866	4.661	5.705	6.530	7.382
7.33	3.324	4.795	5.767	7.037	8.039	9.029
7.50	4.490	6.405	7.676	9.331	10.630	11.828
7.67	7.090	9.937	11.844	14.306	16.227	17.798
7.83	18.216	24.657	29.040	34.600	38.871	41.678
8.00	79.721	104.905	121.636	142.504	158.059	174.111
8.17	24.380	32.747	38.457	45.670	51.187	54.663
8.33	12.311	16.908	20.021	23.999	27.077	29.243
8.50	8.199	11.431	13.603	16.399	18.577	20.289
8.67	6.160	8.683	10.369	12.550	14.256	15.707
8.83	4.950	7.035	8.423	10.225	11.639	12.913
9.00	4.149	5.937	7.122	8.667	9.881	11.023
9.17	3.581	5.151	6.190	7.548	8.617	9.656
9.33	3.156	4.561	5.489	6.703	7.661	8.618
9.50	2.827	4.101	4.941	6.042	6.912	7.801
9.67	2.563	3.731	4.500	5.510	6.309	7.140
9.83	2.348	3.428	4.138	5.072	5.812	6.594
10.00	2.168	3.174	3.835	4.705	5.394	6.133
10.17	2.016	2.958	3.576	4.392	5.038	5.740
10.33	1.885	2.772	3.354	4.122	4.731	5.399
10.50	1.771	2.610	3.160	3.886	4.463	5.102
10.67	1.672	2.468	2.989	3.679	4.227	4.839
10.83	1.583	2.341	2.838	3.495	4.017	4.605
11.00	1.505	2.229	2.703	3.330	3.829	4.395
11.17	1.434	2.127	2.581	3.182	3.660	4.206
11.33	1.371	2.036	2.471	3.047	3.507	4.034
11.50	1.313	1.953	2.371	2.925	3.367	3.878
11.67	1.260	1.877	2.279	2.814	3.240	3.734
11.83	1.212	1.807	2.195	2.711	3.123	3.603
12.00	1.168	1.743	2.118	2.617	3.015	3.481
12.17	1.127	1.683	2.047	2.529	2.915	3.368
12.33	1.089	1.628	1.980	2.448	2.822	3.264
12.50	1.054	1.577	1.919	2.373	2.736	3.166
12.67	1.021	1.529	1.861	2.303	2.655	3.075
12.83	0.990	1.485	1.807	2.237	2.580	2.990
13.00	0.962	1.443	1.757	2.175	2.509	2.910
13.17	0.935	1.404	1.709	2.117	2.443	2.834
13.33	0.909	1.367	1.665	2.062	2.380	2.763
13.50	0.886	1.332	1.623	2.011	2.321	2.696
13.67	0.863	1.299	1.583	1.962	2.265	2.633

APPENDIX J – DESIGN STORMS

Time (hr)	24-hour Chicago Storm Rainfall Intensities					
	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year
13.83	0.842	1.268	1.545	1.916	2.212	2.573
14.00	0.822	1.238	1.510	1.872	2.162	2.515
14.17	0.803	1.210	1.476	1.830	2.114	2.461
14.33	0.784	1.183	1.444	1.791	2.069	2.409
14.50	0.767	1.158	1.413	1.753	2.026	2.360
14.67	0.751	1.134	1.384	1.717	1.985	2.313
14.83	0.735	1.111	1.356	1.683	1.945	2.268
15.00	0.720	1.089	1.329	1.650	1.908	2.225
15.17	0.706	1.068	1.303	1.619	1.871	2.184
15.33	0.692	1.047	1.279	1.588	1.837	2.144
15.50	0.679	1.028	1.255	1.560	1.804	2.107
15.67	0.666	1.009	1.233	1.532	1.772	2.070
15.83	0.654	0.992	1.211	1.505	1.741	2.035
16.00	0.643	0.974	1.190	1.480	1.712	2.002
16.17	0.631	0.958	1.170	1.455	1.684	1.969
16.33	0.621	0.942	1.151	1.431	1.657	1.938
16.50	0.610	0.927	1.133	1.409	1.630	1.908
16.67	0.600	0.912	1.115	1.386	1.605	1.879
16.83	0.591	0.898	1.097	1.365	1.580	1.851
17.00	0.581	0.884	1.081	1.345	1.557	1.823
17.33	0.564	0.858	1.049	1.306	1.512	1.772
17.50	0.555	0.845	1.034	1.287	1.490	1.747
17.67	0.547	0.833	1.019	1.269	1.470	1.723
17.83	0.539	0.821	1.005	1.251	1.450	1.700
18.00	0.532	0.810	0.991	1.235	1.430	1.678
18.17	0.524	0.799	0.978	1.218	1.411	1.656
18.33	0.517	0.789	0.965	1.202	1.393	1.635
18.50	0.510	0.778	0.953	1.187	1.375	1.615
18.67	0.504	0.768	0.940	1.172	1.358	1.595
18.83	0.497	0.758	0.929	1.157	1.341	1.575
19.00	0.491	0.749	0.917	1.143	1.325	1.556
19.17	0.484	0.740	0.906	1.129	1.309	1.538
19.33	0.478	0.731	0.895	1.116	1.293	1.520
19.50	0.473	0.722	0.884	1.103	1.278	1.503
19.67	0.467	0.714	0.874	1.090	1.264	1.486
19.83	0.461	0.705	0.864	1.077	1.249	1.469
20.00	0.456	0.697	0.854	1.065	1.235	1.453
20.17	0.451	0.689	0.845	1.053	1.222	1.438
20.33	0.446	0.682	0.835	1.042	1.209	1.422
20.50	0.441	0.674	0.826	1.031	1.196	1.407
20.67	0.436	0.667	0.817	1.020	1.183	1.393
20.83	0.431	0.660	0.809	1.009	1.171	1.379

APPENDIX J – DESIGN STORMS

Time (hr)	24-hour Chicago Storm Rainfall Intensities					
	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year
21.00	0.426	0.653	0.800	0.999	1.159	1.365
21.17	0.422	0.646	0.792	0.988	1.147	1.351
21.33	0.417	0.639	0.784	0.978	1.135	1.338
21.50	0.413	0.633	0.776	0.969	1.124	1.325
21.67	0.409	0.627	0.768	0.959	1.113	1.312
21.83	0.405	0.620	0.761	0.950	1.102	1.300
22.00	0.400	0.614	0.753	0.941	1.092	1.287
22.17	0.397	0.608	0.746	0.932	1.082	1.276
22.33	0.393	0.603	0.739	0.923	1.072	1.264
22.50	0.389	0.597	0.732	0.915	1.062	1.252
22.67	0.385	0.591	0.726	0.906	1.052	1.241
22.83	0.382	0.586	0.719	0.898	1.043	1.230
23.00	0.378	0.581	0.712	0.890	1.033	1.220
23.17	0.374	0.575	0.706	0.882	1.024	1.209
23.33	0.371	0.570	0.700	0.874	1.015	1.199
23.50	0.368	0.565	0.694	0.867	1.007	1.189
23.67	0.364	0.560	0.688	0.859	0.998	1.179
23.83	0.361	0.555	0.682	0.852	0.990	1.169
24.00	0.358	0.551	0.676	0.845	0.981	1.159

APPENDIX J – DESIGN STORMS

Time (hr)	4-hour Chicago Storm Rainfall Intensities					
	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year
0.17	1.925	2.829	3.422	4.204	4.825	5.504
0.33	2.228	3.259	3.936	4.828	5.534	6.288
0.50	2.660	3.866	4.661	5.705	6.530	7.382
0.67	3.324	4.795	5.767	7.037	8.039	9.029
0.83	4.490	6.405	7.676	9.331	10.630	11.828
1.00	7.090	9.937	11.844	14.306	16.227	17.798
1.17	18.216	24.657	29.040	34.600	38.871	41.678
1.33	79.721	104.905	121.636	142.504	158.059	174.111
1.50	24.380	32.747	38.457	45.670	51.187	54.663
1.67	12.311	16.908	20.021	23.999	27.077	29.243
1.83	8.199	11.431	13.603	16.399	18.577	20.289
2.00	6.160	8.683	10.369	12.550	14.256	15.707
2.17	4.950	7.035	8.423	10.225	11.639	12.913
2.33	4.149	5.937	7.122	8.667	9.881	11.023
2.50	3.581	5.151	6.190	7.548	8.617	9.656
2.67	3.156	4.561	5.489	6.703	7.661	8.618
2.83	2.827	4.101	4.941	6.042	6.912	7.801
3.00	2.563	3.731	4.500	5.510	6.309	7.140
3.17	2.348	3.428	4.138	5.072	5.812	6.594
3.33	2.168	3.174	3.835	4.705	5.394	6.133
3.50	2.016	2.958	3.576	4.392	5.038	5.740
3.67	1.885	2.772	3.354	4.122	4.731	5.399
3.83	1.771	2.610	3.160	3.886	4.463	5.102
4.00	1.672	2.468	2.989	3.679	4.227	4.839