

Appendix A – Hydraulic Calculations

- Garage Finished Floor Elevation Checks

GARAGE #	FF	High	Low	Criteria	Depth	Freeboard	Section #	Remarks
Sheet								
1	50.80	50.69	50.13	0.76	0.19	0.11	I6E	Prorated Flow
2	50.30	50.13	49.56	0.76	0.21	0.13	I6E	Prorated Flow
3	49.88	49.56	49.26	0.76	0.23	0.23	I6E	Prorated Flow
4	49.30	49.05	48.73	0.76	0.26	0.12	I6E	Prorated Flow
5	48.97	48.73	48.30	0.76	0.28	0.06	I6E	Prorated Flow
6	48.63	48.30	47.94	0.76	0.30	0.10	I6E	Prorated Flow
7	47.73	47.44	47.07	0.76	0.03	0.62	I7AE	Prorated Flow
8	47.23	47.07	46.68	0.76	0.05	0.44	I7AE	Prorated Flow
9	46.98	46.68	46.33	0.76	0.08	0.53	I7AE	Prorated Flow
10	46.23	46.12	45.77	0.76	0.10	0.28	I7AE	Prorated Flow
11	45.90	45.77	45.37	0.76	0.13	0.25	I7AE	Prorated Flow
12	45.48	45.37	45.01	0.76	0.15	0.18	I7AE	Prorated Flow
13	44.83	44.52	44.15	0.76	0.18	0.33	I7AE	Prorated Flow
14	44.50	44.15	43.72	0.76	0.21	0.32	I7AE	Prorated Flow
15	44.08	43.72	43.41	0.76	0.23	0.28	I7AE	Prorated Flow
16	43.50	43.20	42.84	0.76	0.26	0.16	I7AE	Prorated Flow
17	43.17	42.84	42.45	0.76	0.28	0.14	I7AE	Prorated Flow
18	42.83	42.45	42.13	0.76	0.31	0.14	I7AE	Prorated Flow
19	42.00	41.77	41.57	0.76	0.03	0.54	I8E	Prorated Flow
20	42.00	41.57	41.41	0.76	0.07	0.67	I8E	Prorated Flow
21	42.00	41.41	41.31	0.76	0.10	0.76	I8E	Prorated Flow
22	41.50	41.25	41.16	0.76	0.14	0.35	I8E	Prorated Flow
23	41.60	41.16	41.06	0.76	0.17	0.48	I8E	Prorated Flow
24	41.50	41.06	40.94	1.50	0.21	0.41	I8E	Prorated Flow
25	40.80	40.53	40.44	0.76	0.05	0.56	I9AE	Prorated Flow
26	40.90	40.44	40.34	0.76	0.09	0.65	I9AE	Prorated Flow
27	40.63	40.34	40.24	0.76	0.14	0.39	I9AE	Prorated Flow
28	40.63	40.19	40.09	0.76	0.19	0.45	I9AE	Prorated Flow
29	40.30	40.09	39.98	0.76	0.23	0.12	I9AE	Prorated Flow
30	40.30	39.98	39.90	0.76	0.28	0.14	I9AE	Prorated Flow
31	40.13	39.76	39.67	0.76	0.04	0.68	I0E	Prorated Flow
32	40.13	39.67	39.57	0.76	0.07	0.69	I0E	Prorated Flow
33	39.80	39.57	39.48	0.76	0.11	0.39	I0E	Prorated Flow
34	39.80	39.42	39.32	0.76	0.15	0.47	I0E	Prorated Flow
35	39.63	39.32	39.18	0.76	0.18	0.32	I0E	Prorated Flow
36	39.63	39.18	39.04	0.76	0.22	0.39	I0E	Prorated Flow
37	40.50	40.06	39.95	0.76	0.20	0.42	I10W	
38	40.50	40.17	40.06	0.76	0.20	0.31	I10W	
39	40.83	40.26	40.17	0.76	0.20	0.55	I10W	
40	40.83	40.41	40.31	0.76	0.20	0.40	I10W	
41	41.10	40.51	40.41	0.76	0.20	0.57	I10W	
42	41.00	40.60	40.51	0.76	0.20	0.38	I10W	
43	41.33	40.83	40.73	0.76	0.20	0.48	I9AW	
44	41.33	40.93	40.83	0.76	0.20	0.38	I9AW	
45	41.50	41.03	40.93	0.76	0.20	0.45	I9AW	
46	41.50	41.17	41.08	0.76	0.20	0.31	I9AW	
47	41.83	41.26	41.17	0.76	0.20	0.55	I9AW	
48	41.83	41.36	41.26	0.76	0.20	0.45	I9AW	
49	42.33	41.87	41.78	0.76	0.20	0.44	I8W	
50	42.33	41.98	41.87	0.76	0.20	0.33	I8W	

GARAGE #	FF	High	Low	Criteria	Depth	Freeboard	Section #	Remarks
51	42.33	42.04	41.98	0.76	0.20	0.27	I8W	
52	42.58	42.30	42.14	0.76	0.20	0.26	I8W	
53	42.83	42.53	42.30	0.76	0.20	0.28	I8W	
54	43.00	42.80	42.53	0.76	0.20	0.18	I8W	
55	43.83	43.59	43.24	0.76	0.20	0.22	I7AW	
56	44.17	43.99	43.59	0.76	0.20	0.16	I7AW	
57	44.50	44.34	43.99	0.76	0.20	0.14	I7AW	
58	45.08	44.91	44.55	0.76	0.20	0.15	I7AW	
59	45.33	45.30	44.91	0.76	0.20	0.01	I7AW	
60	45.83	45.66	45.30	0.76	0.20	0.15	I7AW	
61	46.58	46.50	46.16	0.76	0.20	0.06	I7AW	
62	47.00	46.90	46.50	0.76	0.20	0.08	I7AW	
63	47.50	47.27	46.90	0.76	0.20	0.21	I7AW	
64	48.33	48.07	47.71	0.76	0.20	0.24	I7AW	
65	48.50	48.47	48.07	0.76	0.20	0.01	I7AW	
66	49.00	48.82	48.47	0.76	0.20	0.16	I7AW	
67	49.58	49.42	49.03	0.76	0.20	0.14	I6W	
68	50.00	49.78	49.42	0.76	0.20	0.20	I6W	
69	50.33	50.14	49.78	0.76	0.20	0.17	I6W	
70	56.33	56.16	55.90	0.76	0.00	0.55	I6E	Prorated Flow
71	56.50	56.32	56.16	0.76	0.02	0.53	I6E	Prorated Flow
72	56.50	56.35	56.32	0.76	0.03	0.47	I6E	Prorated Flow
73	56.50	56.30	56.15	0.76	0.03	0.53	I4AE	Prorated Flow
74	56.33	56.15	55.88	0.76	0.05	0.45	I4AE	Prorated Flow
75	56.17	55.88	55.63	0.76	0.08	0.51	I4AE	Prorated Flow
76	55.50	55.33	55.06	0.76	0.11	0.33	I4AE	Prorated Flow
77	55.33	55.06	54.78	0.76	0.14	0.38	I4AE	Prorated Flow
78	55.00	54.78	54.54	0.76	0.16	0.28	I4AE	Prorated Flow
79	54.43	54.19	53.94	0.76	0.19	0.24	I4AE	Prorated Flow
80	54.27	53.94	53.66	0.76	0.22	0.28	I4AE	Prorated Flow
81	53.93	53.66	53.41	0.76	0.24	0.16	I4AE	Prorated Flow
82	53.60	53.26	53.02	0.76	0.27	0.18	I4AE	Prorated Flow
83	53.27	53.02	52.74	0.76	0.30	0.04	I4AE	Prorated Flow
84	53.10	52.74	52.49	0.76	0.32	0.09	I4AE	Prorated Flow
85	52.50	52.15	51.90	0.76	0.03	0.67	I5AE	Prorated Flow
86	52.00	51.90	51.63	0.76	0.06	0.35	I5AE	Prorated Flow
87	51.83	51.63	51.37	0.76	0.10	0.39	I5AE	Prorated Flow
88	51.50	51.22	50.97	0.76	0.13	0.40	I5AE	Prorated Flow
89	51.33	50.97	50.69	0.76	0.16	0.42	I5AE	Prorated Flow
90	50.83	50.69	50.43	0.76	0.19	0.14	I5AE	Prorated Flow
91	49.30	49.04	48.77	0.76	0.22	0.19	I5AE	Prorated Flow
92	49.13	48.77	48.48	0.76	0.26	0.23	I5AE	Prorated Flow
93	48.80	48.48	48.23	0.76	0.29	0.12	I5AE	Prorated Flow
94	48.40	48.08	47.83	0.76	0.32	0.06	I5AE	Prorated Flow
95	48.23	47.83	47.56	0.76	0.35	0.08	I5AE	Prorated Flow
96	48.07	47.56	47.29	0.76	0.38	0.12	I5AE	Prorated Flow
97	47.20	46.93	46.68	0.76	0.05	0.54	I16BE	Prorated Flow
98	47.03	46.68	46.39	0.76	0.11	0.52	I16BE	Prorated Flow
99	46.70	46.39	46.14	0.76	0.16	0.37	I16BE	Prorated Flow

GARAGE #	FF	High	Low	Criteria	Depth	Freeboard	Section #	Remarks
100	46.20	45.99	45.74	0.76	0.21	0.17	I16BE	Prorated Flow
101	46.03	45.74	45.45	0.76	0.27	0.14	I16BE	Prorated Flow
102	45.70	45.45	45.18	0.76	0.31	0.01	I16BE	Prorated Flow
103	46.43	46.16	45.87	0.76	0.18	0.29	I16BW	
104	46.60	46.47	46.16	0.76	0.18	0.15	I16BW	
105	46.93	46.74	46.47	0.76	0.18	0.21	I16BW	
106	47.73	47.33	47.05	0.76	0.18	0.42	I16BW	
107	47.90	47.63	47.33	0.76	0.18	0.29	I16BW	
108	48.23	47.90	47.63	0.76	0.18	0.35	I16BW	
109	48.73	48.48	48.21	0.76	0.20	0.23	I5AW	
110	48.90	48.80	48.48	0.76	0.20	0.08	I5AW	
111	49.23	49.06	48.80	0.76	0.20	0.15	I5AW	
112	50.08	49.83	49.61	0.76	0.20	0.23	I5AW	
113	50.33	50.10	49.83	0.76	0.20	0.21	I5AW	
114	50.96	50.37	50.10	0.76	0.20	0.57	I5AW	
115	51.28	50.96	50.68	0.76	0.20	0.30	I5AW	
116	51.53	51.26	50.96	0.76	0.20	0.25	I5AW	
117	51.70	51.53	51.26	0.76	0.20	0.15	I5AW	
118	52.38	52.11	51.84	0.76	0.20	0.25	I5AW	
119	52.63	52.42	52.11	0.76	0.20	0.19	I5AW	
120	53.13	52.68	52.42	0.76	0.20	0.43	I5AW	
121	53.63	53.25	52.99	0.76	0.20	0.36	I4AW	
122	53.80	53.56	53.25	0.76	0.20	0.22	I4AW	
123	54.13	53.82	53.56	0.76	0.20	0.29	I4AW	
124	55.38	55.16	54.98	0.76	0.20	0.20	I4AW	
125	55.80	55.44	55.16	0.76	0.20	0.34	I4AW	
126	56.13	55.68	55.44	0.76	0.20	0.43	I4AW	
127	56.38	56.08	55.83	0.76	0.20	0.28	I4AW	
128	56.63	56.31	56.08	0.76	0.20	0.30	I4AW	
129	56.80	56.61	56.31	0.76	0.20	0.17	I4AW	
130	57.33	57.03	56.92	0.76	0.20	0.28	I4AW	
131	57.60	57.04	57.01	0.76	0.18	0.58	I6W	
132	57.33	57.01	56.88	0.76	0.18	0.34	I6W	
133	57.00	56.74	56.47	0.76	0.18	0.28	I6W	
134	57.10	56.47	56.03	0.76	0.18	0.65	I6W	
135	56.50	56.03	55.67	0.76	0.18	0.49	I6W	
136	66.67	66.14	65.90	0.76	0.16	0.59	I2AE	Prorated Flow
137	66.33	65.90	65.72	0.76	0.19	0.43	I2AE	Prorated Flow
138	66.08	65.72	65.61	0.76	0.22	0.30	I2AE	Prorated Flow
139	65.83	65.54	65.43	0.76	0.25	0.17	I2AE	Prorated Flow
140	65.83	65.43	65.31	0.76	0.28	0.22	I2AE	Prorated Flow
141	65.67	65.31	65.19	0.76	0.31	0.12	I2AE	Prorated Flow
142	65.30	65.04	64.92	0.76	0.03	0.58	I2E	Prorated Flow
143	65.30	64.92	64.80	0.76	0.06	0.64	I2E	Prorated Flow
144	65.13	64.80	64.69	0.76	0.09	0.53	I2E	Prorated Flow
145	64.80	64.62	64.51	0.76	0.12	0.32	I2E	Prorated Flow
146	64.63	64.51	64.38	0.76	0.15	0.20	I2E	Prorated Flow
147	64.63	64.38	64.27	0.76	0.18	0.27	I2E	Prorated Flow
148	63.90	63.79	63.59	0.76	0.04	0.42	I15AE	Prorated Flow
149	63.73	63.59	63.31	0.76	0.07	0.37	I15AE	Prorated Flow
150	63.40	63.31	63.01	0.76	0.11	0.25	I15AE	Prorated Flow
151	62.80	62.59	62.21	0.76	0.15	0.30	I15AE	Prorated Flow
152	62.30	62.21	61.78	0.76	0.18	0.10	I15AE	Prorated Flow
153	61.88	61.78	61.40	0.76	0.22	0.04	I15AE	Prorated Flow

GARAGE #	FF	High	Low	Criteria	Depth	Freeboard	Section #	Remarks
154	61.23	60.97	60.60	0.76	0.26	0.13	I15AE	Prorated Flow
155	60.90	60.60	60.19	0.76	0.29	0.09	I15AE	Prorated Flow
156	60.48	60.19	59.79	0.76	0.33	0.01	I15AE	Prorated Flow
157	59.60	59.35	58.98	0.76	0.06	0.50	I15BE	Prorated Flow
158	59.10	58.98	58.54	0.76	0.13	0.25	I15BE	Prorated Flow
159	58.68	58.54	58.14	0.76	0.19	0.14	I15BE	Prorated Flow
160	57.60	57.43	57.21	0.76	0.04	0.47	I16AE	Prorated Flow
161	57.27	57.21	56.94	0.76	0.08	0.27	I16AE	Prorated Flow
162	57.27	56.94	56.72	0.76	0.13	0.46	I16AE	Prorated Flow
163	56.60	56.47	56.24	0.76	0.17	0.17	I16AE	Prorated Flow
164	56.43	56.24	55.98	0.76	0.21	0.15	I16AE	Prorated Flow
165	56.10	55.98	55.76	0.76	0.25	0.00	I16AE	Prorated Flow
166	55.80	55.50	55.28	0.76	0.29	0.09	I16AE	Prorated Flow
167	55.63	55.28	55.02	0.76	0.34	0.06	I16AE	Prorated Flow
168	55.47	55.02	54.79	0.76	0.38	0.07	I16AE	Prorated Flow
169	56.08	55.48	55.40	0.76	0.19	0.60	I16AW	
170	56.08	55.75	55.48	0.76	0.19	0.33	I16AW	
171	56.33	55.96	55.75	0.76	0.19	0.37	I16AW	
172	56.50	56.29	56.08	0.76	0.19	0.21	I16AW	
173	56.83	56.61	56.29	0.76	0.19	0.22	I16AW	
174	57.00	56.74	56.61	0.76	0.19	0.26	I16AW	
175	57.63	57.24	57.02	0.76	0.19	0.39	I16AW	
176	57.80	57.50	57.24	0.76	0.19	0.30	I16AW	
177	58.13	57.73	57.50	0.76	0.19	0.40	I16AW	
178	58.63	58.27	58.05	0.76	0.19	0.36	I15BW	
179	58.80	58.53	58.27	0.76	0.19	0.27	I15BW	
180	59.13	58.80	58.53	0.76	0.19	0.33	I15BW	
181	59.68	59.45	48.98	0.76	0.19	0.23	I15BW	
182	60.10	59.89	59.45	0.76	0.19	0.21	I15BW	
183	60.43	60.27	59.89	0.76	0.19	0.16	I15BW	
184	61.28	61.06	60.68	0.76	0.20	0.20	I15AW	
185	61.70	61.50	61.06	0.76	0.20	0.18	I15AW	
186	62.03	61.87	61.50	0.76	0.20	0.14	I15AW	
187	62.88	62.65	62.29	0.76	0.20	0.21	I15AW	
188	63.30	63.10	62.65	0.76	0.20	0.18	I15AW	
189	63.63	63.48	63.10	0.76	0.20	0.13	I15AW	
190	64.38	64.12	63.85	0.76	0.20	0.24	I15AW	
191	64.63	64.35	64.12	0.76	0.20	0.26	I15AW	
192	64.80	64.50	64.35	0.76	0.20	0.28	I15AW	
193	65.50	65.16	65.04	0.76	0.20	0.32	I2AW	
194	65.50	65.28	65.16	0.76	0.20	0.20	I2AW	
195	66.00	65.39	65.28	0.76	0.20	0.59	I2AW	
196	66.03	65.66	65.62	0.76	0.20	0.35	I2AE	
197	66.20	65.80	65.66	0.76	0.20	0.38	I2AE	
198	66.20	65.92	65.80	0.76	0.20	0.26	I2AE	
199	66.53	66.17	66.05	0.76	0.20	0.34	I2AE	
200	66.70	66.31	66.17	0.76	0.20	0.37	I2AE	
201	66.70	66.47	66.31	0.76	0.20	0.21	I2AE	
202	74.33	74.07	73.72	0.76	0.02	0.61	I1E	Prorated Flow
203	74.67	74.47	74.07	0.76	0.03	0.52	I1E	Prorated Flow
204	75.00	74.74	74.47	0.76	0.05	0.54	I1E	Prorated Flow
205	72.03	71.85	71.50	0.76	0.22	0.12	I11AE	Prorated Flow
206	71.70	71.50	71.09	0.76	0.25	0.09	I11AE	Prorated Flow
207	71.28	71.09	70.73	0.76	0.27	0.03	I11AE	Prorated Flow

GARAGE #	FF	High	Low	Criteria	Depth	Freeboard	Section #	Remarks
208	70.63	70.34	69.98	0.76	0.29	0.08	I11AE	Prorated Flow
209	70.30	69.98	69.54	0.76	0.32	0.07	I11AE	Prorated Flow
210	69.88	69.54	69.22	0.76	0.34	0.04	I11AE	Prorated Flow
211	69.10	68.83	68.48	0.76	0.07	0.50	I11BE	Prorated Flow
212	68.60	68.48	68.07	0.76	0.15	0.21	I11BE	Prorated Flow
213	68.18	68.07	67.71	0.76	0.22	0.05	I11BE	Prorated Flow
214	67.60	67.45	67.13	0.76	0.04	0.46	I12E	Prorated Flow
215	67.43	67.13	66.91	0.76	0.07	0.54	I12E	Prorated Flow
216	67.10	66.91	66.73	0.76	0.11	0.36	I12E	Prorated Flow
217	65.03	64.82	64.46	0.76	0.02	0.54	I13E	Prorated Flow
218	64.70	64.46	64.05	0.76	0.05	0.52	I13E	Prorated Flow
219	64.28	64.05	63.70	0.76	0.07	0.47	I13E	Prorated Flow
220	63.70	63.38	63.12	0.76	0.10	0.51	I13E	Prorated Flow
221	63.20	63.12	62.73	0.76	0.12	0.22	I13E	Prorated Flow
222	63.03	62.73	62.36	0.76	0.14	0.39	I13E	Prorated Flow
223	64.00	62.30	61.63	0.76	0.18	1.72	I13W	
224	64.00	62.89	62.30	0.76	0.18	1.13	I13W	
225	64.00	63.32	62.89	0.76	0.18	0.70	I13W	
226	65.58	64.07	63.74	0.76	0.18	1.53	I13W	
227	66.00	64.57	64.07	0.76	0.18	1.45	I13W	
228	66.50	64.94	64.57	0.76	0.18	1.58	I13W	
229	68.68	67.96	67.73	0.76	0.18	0.74	I12W	
230	68.68	68.14	67.96	0.76	0.18	0.56	I12W	
231	68.68	68.44	68.14	0.76	0.18	0.26	I12W	
232	69.43	69.19	68.83	0.76	0.18	0.26	I11BW	
233	69.60	69.59	69.19	0.76	0.18	0.03	I11BW	
234	70.10	69.95	69.59	0.76	0.20	0.13	I11AW	
235	70.93	70.69	70.34	0.76	0.20	0.22	I11AW	
236	71.27	71.11	70.69	0.76	0.20	0.14	I11AW	
237	71.60	71.46	71.11	0.76	0.20	0.12	I11AW	
238	72.48	72.21	71.85	0.76	0.20	0.25	I11AW	
239	72.73	72.57	72.21	0.76	0.20	0.14	I11AW	
240	73.23	73.09	72.57	0.76	0.20	0.12	I11AW	
241	75.10	74.87	74.49	0.76	0.20	0.21	I1	
242	74.60	74.49	74.06	0.76	0.20	0.09	I1	
243	74.18	74.06	73.76	0.76	0.20	0.10	I1	
244	73.60	73.39	73.01	0.76	0.20	0.19	I1	
245	73.10	73.01	72.57	0.76	0.20	0.07	I1	
246	72.68	72.57	72.20	0.76	0.20	0.09	I1	
247	72.10	71.86	71.41	0.76	0.20	0.22	I1	
248	71.43	71.41	70.88	0.76	0.20	0.00	I1	
249	71.43	70.88	70.42	0.76	0.20	0.53	I1	