LISTATO DI CALCOLO – FASE 1 – SEZ B – COESIONE INTERCETTA

RICERCA SUPERFICIE CRITICA CIRCOLARE

Analisi di stabilità dei pendii con: JANBU (1956)

Lat./Long.	44.416126/9.128522
Normativa	NTC 2008
Numero di strati	4.0
Numero dei conci	25.0
Grado di sicurezza ritenuto accettabile	1.1
Coefficiente parziale resistenza	1.1
Analisi	Condizione drenata
Superficie di forma circolare	

Maglia dei Centri

Ascissa vertice sinistro inferiore xi	0.0 m
Ordinata vertice sinistro inferiore yi	80.0 m
Ascissa vertice destro superiore xs	160.0 m
Ordinata vertice destro superiore ys	350.0 m
Passo di ricerca	10.0
Numero di celle lungo x	20.0
Numero di celle lungo y	20.0

Coefficienti sismici [N.T.C.]

Dati generali

Tipo opera:	2 - Opere ordinarie
Classe d'uso:	Classe I
Vita nominale:	50.0 [anni]
Vita di riferimento:	35.0 [anni]

Parametri sismici su sito di riferimento

Categoria sottosuolo:	C
Categoria topografica:	T3

S.L. Stato limite	TR Tempo ritorno [anni]	ag [m/s²]	F0 [-]	TC* [sec]
S.L.O.	30.0	0.27	2.5	0.2
S.L.D.	35.0	0.29	2.52	0.2
S.L.V.	332.0	0.73	2.53	0.28
S.L.C.	682.0	0.96	2.5	0.29

Coefficienti sismici orizzontali e verticali

Opera: Stabilità dei pendii e Fondazioni

S.L. Stato limite	amax [m/s²]	beta [-]	kh [-]	kv [sec]
S.L.O.	0.486	0.2	0.0099	0.005
S.L.D.	0.522	0.2	0.0106	0.0053
S.L.V.	1.314	0.2	0.0268	0.0134
S.L.C.	1.728	0.2	0.0352	0.0176

Coefficiente azione sismica orizzontale	0.0268
Coefficiente azione sismica verticale	0.013 4

Vertici profilo

N	X	y

	m	m
1	0.0	0.0
2	26.2	17.22
3	29.65	17.44
4	33.37	16.92
5	45.76	19.5
6	66.3	20.09
7	84.13	24.8
8	94.39	25.65
9	115.64	40.28
10	127.18	40.28
11	144.91	55.0
12	150.25	55.0
13	172.03	70.0
14	176.27	70.0
15	201.62	74.54
16	205.25	74.53
17	219.84	84.0
18	225.33	84.4
19	235.28	90.03
20	271.64	88.91
21	282.7	88.53
22	289.11	88.6 8

Falda

Nr.	X (m)	y (m)
1	-0.3	-0.52
2	39.1	10.3
3	82.12	14.39
4	121.91	24.44
5	159.28	41.98
6	179.86	58.11
7	202.99	68.81
8	231.62	74.84
9	257.74	77.35
10	289.64	80.6 2

Vertici strato 1

N	X (m)	y (m)
1	0.0	0.0
2	26.2	17.22
3	29.65	17.44
4	33.37	16.92
5	36.74	13.96
6	37.68	12.99
7	64.06	13.96
8	76.83	15.78
9	98.11	17.87
10	110.05	22.38
11	132.06	29.02
12	146.92	36.18
13	155.14	41.22
14	161.51	46.52
15	169.47	50.77
16	178.51	60.13
17	197.55	68.85
18	208.25	71.0
19	228.49	80.0
20	272.76	88.87
21	282.7	88.53
22	289.11	88.6 8

Vertici strato 2

N	X (m)	y (m)
1	0.0	0.0
2	26.2	17.27
3	29.65	17.44
4	33.37	16.92
5	36.74	13.96
6	38.56	12.1
7	64.37	12.92
8	76.19	14.76
9	85.97	15.84
10	98.38	17.08
11	110.84	21.59
12	132.6	28.22
13	147.98	36.18
14	153.82	40.16
15	162.57	45.73
16	169.2	49.18
17	174.21	54.9
18	178.51	59.23
19	197.94	67.72
20	212.1	70.67
21	223.0	75.35
22	230.56	77.31
23	262.24	80.63
24	281.0	81.67
25	289.11	83.6 9

Vertici strato 3

N	X (m)	y (m)
1	0.0	0.0
2	26.2	17.22
3	29.65	17.44
4	33.37	16.92
5	36.74	13.96
6	42.18	8.4
7	65.63	9.78
8	79.0	11.82
9	93.34	13.63
10	132.33	25.3
11	147.96	31.81
12	159.17	38.21
13	167.34	43.58
14	176.99	52.15
15	182.36	55.06
16	192.72	59.7
17	209.83	66.16
18	232.16	72.24
19	275.95	77.07
20	289.11	79.45

Coefficienti parziali per i parametri geotecnici del terreno

Tangente angolo di resistenza al taglio	1.25
Coesione efficace	1.25
Coesione non drenata	1.4
Riduzione parametri geotecnici terreno	Si

Stratigrafia

c: coesione; cu: coesione non drenata; Fi: Angolo di attrito; G: Peso Specifico; Gs: Peso Specifico Saturo; K: Modulo di Winkler

Strato	c (kg/cm²)	cu (kg/cm²)	Fi (°)	G (Kg/m³)	Gs (Kg/m³)	K (Kg/cm³)	Litologia	
1	0.0383		29.60	1837	2063	0.00		
2	0		26.51	1695	1905	0.00		
3	0.3305		30.52	2402	2698	0.00		
4	0.4352		33.31	2402	2698	0.00		

Risultati analisi pendio [NTC 2008: [A2+M2+R2]]

Fs minimo individuato	0.85
Ascissa centro superficie	116.0 m
Ordinata centro superficie	86.75 m
Raggio superficie	46.44 m

Numero di superfici esaminate....(797)

N°	Xo	Yo	Ro	Fs
1	0.0	80.0	72.2	3.15
2	4.0	86.8	78.6	2.93
3	8.0	80.0	72.6	2.67
4	12.0	86.8	79.3	2.84
5	16.0	80.0	73.7	2.94
6	20.0	86.8	80.6	3.24
7	24.0	80.0	67.3	4.63
8	28.0	86.8	82.1	3.61
9	32.0	80.0	75.9	3.81
10	36.0	86.8	82.1	3.96
11	40.0	80.0	67.8	5.68
12	44.0	86.8	73.4	5.31
13	48.0	80.0	67.8	4.72
14	52.0	86.8	73.3	3.77
15	56.0	80.0	75.9	3.23
16	60.0	86.8	73.3	2.01
17	64.0	80.0	67.9	2.15
18	68.0	86.8	73.2	1.82
19	72.0	80.0	59.9	1.41
20	76.0	86.8	64.4	1.16
21	80.0	80.0	59.9	1.25
22	84.0	86.8	64.4	1.23
23	88.0	80.0	52.0	1.05
24	92.0	86.8	64.3	1.07
25	96.0	80.0	60.0	1.07
26	100.0	86.8	64.3	1.06
27	104.0	80.0	52.1	1.06
28	108.0	86.8	55.4	1.07
29	112.0	80.0	51.9	1.07
30	116.0	86.8	46.4	0.85
31	120.0	80.0	42.5	1.03
32	124.0	86.8	46.3	0.89
33	128.0	80.0	43.3	0.99
34	132.0	86.8	45.4	0.90
35	136.0	80.0	43.1	0.96
36	140.0	86.8	37.2	0.96
37	144.0	80.0	34.5	1.02
38	148.0	86.8	37.1	1.07
39	152.0	80.0	25.9	0.94
40	156.0	86.8	28.1	1.05
41	160.0	80.0	17.1	1.02
42	4.0	100.3	90.5	3.56
43	12.0	100.3	91.1	3.22

44	20.0	100.3	92.3	3.56
45	24.0	93.5	77.8	9.39
46	28.0	100.3	83.9	9.79
47	32.0	93.5	88.0	3.83
48	36.0	100.3	94.1	4.04
49	40.0	93.5	88.0	4.21
50	44.0	100.3	94.2	3.49
51	48.0	93.5	78.5	4.18
52	52.0	100.3	94.2	2.96
53	56.0	93.5	88.0	2.93
54	60.0	100.3	84.2	1.86
55	64.0	93.5	78.4	1.71
56	68.0	100.3	84.3	1.55
57	72.0	93.5	78.3	1.45
58	76.0	100.3	74.4	1.07
59	80.0	93.5	68.6	1.03
60	84.0	100.3	74.4	1.17
61	88.0	93.5	68.6	1.09
62	92.0	100.3	74.5	1.01
63	96.0	93.5	68.5	1.02
64	100.0	100.3	74.6	1.00
65	104.0	93.5	68.4	1.01
66	108.0	100.3	74.7	0.97
67	112.0	93.5	58.6	1.03
68	116.0	100.3	64.9	0.96
69	120.0	93.5	58.5	0.97
70	124.0	100.3	55.3	0.96
71	128.0	93.5	48.8	0.93
72	132.0	100.3	55.4	0.94
73	136.0	93.5	48.8	0.96
74	140.0	100.3	55.5	1.06
75	144.0	93.5	39.1	0.93
76	148.0	100.3	43.2	1.01
77	152.0	93.5	39.3	1.10
78	156.0	100.3	42.8	1.24
79	160.0	93.5	39.5	1.34
80	0.0	107.0	97.2	4.04
81	8.0	107.0	97.5	3.28
82	12.0	113.8	104.5	3.32
83	16.0	107.0	98.3	3.37
84	20.0	113.8	105.6	3.70
85	28.0	113.8	97.0	11.58
86	32.0	107.0	90.8	8.02
87	36.0	113.8	107.6	3.61
88	40.0	107.0	100.9	3.54
89	44.0	113.8	97.6	5.00
90	48.0	107.0	100.9	3.02
91	52.0	113.8	107.7	2.68
92	56.0	107.0	90.9	2.12
93	60.0	113.8	97.7	1.68
94	64.0	107.0	91.0	1.61
95	68.0	113.8	97.8	1.38
96	72.0	107.0	81.1	1.21
97	76.0	113.8	97.8	1.15
98	80.0	107.0	81.1	1.16
99	84.0	113.8	87.9	1.02
100	88.0	107.0	81.2	1.01
101	92.0	113.8	88.0	0.98
102	96.0	107.0	81.3	0.99
103	100.0	113.8	88.1	0.96
104	104.0	107.0	81.4	0.97
105	108.0	113.8	78.3	0.95
106	112.0	107.0	71.6	0.95

107	116.0	113.8	78.4	0.97
108	120.0	107.0	71.7	0.99
109	124.0	113.8	68.8	0.92
110	128.0	107.0	62.1	0.93
111	132.0	113.8	68.9	1.01
112	136.0	107.0	52.5	0.98
113	140.0	113.8	58.0	1.00
114	144.0	107.0	50.6	1.01
115	148.0	113.8	55.4	1.17
116	152.0	107.0	48.0	1.20
117	156.0	113.8	52.7	1.43
118	160.0	107.0	45.3	1.51
119	4.0	127.3	117.5	3.53
120	8.0	120.5	110.9	3.35
121	20.0	127.3	118.9	3.76
122	28.0	127.3	110.2	194.34
123	32.0	120.5	114.4	3.64
124	36.0	127.3	111.0	7.91
125	40.0	120.5	114.4	3.04
126	44.0	127.3	121.2	2.80
127	48.0	120.5	104.4	3.54
128	52.0	127.3	111.2	1.92
129	56.0	120.5	104.4	1.77
130	60.0	127.3	111.2	1.56
131	64.0	120.5	104.5	1.46
132	68.0	127.3	101.3	1.24
133	72.0	120.5	94.6	1.17
134	76.0	127.3	111.3	1.09
135	80.0	120.5	94.6	1.04
136	84.0	127.3	101.4	0.99
137	88.0	120.5	94.7	0.99
138	92.0	127.3	101.5	0.95
139	96.0	120.5	94.8	0.95
140	100.0	127.3	101.6	0.97
141	104.0	120.5	85.0	0.96
142	108.0	127.3	91.8	0.95
143	112.0	120.5	85.1	0.96
144	116.0	127.3	82.1	0.94
145	120.0	120.5	75.4	0.92
146	124.0	127.3	82.2	0.98
147	128.0	120.5	75.6	1.00
148	132.0	127.3	72.6	1.02
149	136.0	120.5	65.4	1.01
150	140.0	127.3	70.2	1.14
151	144.0	120.5	62.8	1.15
152	148.0	127.3	67.5	1.34
153	152.0	120.5	60.1	1.38
154	156.0	127.3	76.0	1.54
155	160.0	120.5	68.7	1.54
156	0.0	134.0	124.2	3.72
157	12.0	140.8	131.4	3.46
158	20.0	140.8	132.3	3.72
159	28.0	140.8	133.5	3.45
160	32.0	134.0	127.7	3.12
161	36.0	140.8	134.6	2.78
162	40.0	134.0	117.8	5.86
163	44.0	140.8	124.6	4.29
164	48.0	134.0	117.9	2.20
165	52.0	140.8	124.7	1.76
166	56.0	134.0	117.9	1.69
167	60.0	140.8	124.7	1.36
168	64.0	134.0	118.0	1.32
169	68.0	140.8	124.8	1.18

170	72.0	134.0	118.0	1.16
171	76.0	140.8	114.9	1.03
172	80.0	134.0	108.1	1.01
173	84.0	140.8	114.9	0.94
174	88.0	134.0	108.2	0.94
175	92.0	140.8	115.0	0.96
176	96.0	134.0	108.3	0.97
177	100.0	140.8	105.2	0.94
178	104.0	134.0	98.5	0.95
179	108.0	140.8	105.3	1.00
180	112.0	134.0	88.8	1.00
181	116.0	140.8	95.6	0.97
182	120.0	134.0	88.9	0.98
183	124.0	140.8	95.7	1.06
184	128.0	134.0	89.1	1.07
185	132.0	140.8	85.0	1.13
186	136.0	134.0	77.6	1.13
187	140.0	140.8	82.3	1.28
188	144.0	134.0	74.9	1.31
189	148.0	140.8	90.5	1.47
190	152.0	134.0	83.2	1.53
191	156.0	140.8	87.4	1.53
192	160.0	134.0	80.5	1.54
193	0.0	147.5	137.7	3.65
194	4.0	154.3	144.5	3.57
195	8.0	147.5	137.9	3.57
196	12.0	154.3	144.9	3.63
197	16.0	147.5	138.5	3.71
198	20.0	154.3	145.7	3.70
199	24.0	147.5	139.5	3.62
200	28.0	154.3	136.8	5.62
201	32.0	147.5	140.9	2.82
202	36.0	154.3	138.0	6.79
203	40.0	147.5	131.3	5.11
204	44.0	154.3	148.2	2.17
205	48.0	147.5	141.4	2.14
206	52.0	154.3	138.2	1.49
207	56.0	147.5	131.4	1.41
208	60.0	154.3	138.2	1.25
209	64.0	147.5	131.5	1.21
210	68.0	154.3	138.3	1.12
211	72.0	147.5	121.6	1.07
212	76.0	154.3	128.4	0.96
213	80.0	147.5	121.6	0.95
214	84.0	154.3	128.4	0.95
215	88.0	147.5	121.7	0.96
216	92.0	154.3	128.5	0.97
217	96.0	147.5	111.9	0.94
218	100.0	154.3	118.7	0.97
219	104.0	147.5	112.0	0.98
220	108.0	154.3	109.0	1.00
221	112.0	147.5	102.3	0.98
222	116.0	154.3	109.1	1.04
223	120.0	147.5	102.4	1.04
224	124.0	154.3	109.2	1.11
225	128.0	147.5	92.4	1.13
226	132.0	154.3	97.1	1.26
227	136.0	147.5	89.7	1.27
228	140.0	154.3	94.5	1.44
229	144.0	147.5	87.1	1.47
230	148.0	154.3	101.6	1.52
231	152.0	147.5	94.5	1.56
232	156.0	154.3	95.8	1.49

233	160.0	147.5	99.3	1.64
234	4.0	167.8	158.0	3.60
235	8.0	161.0	151.4	3.60
236	16.0	161.0	151.9	3.77
237	20.0	167.8	159.1	3.63
238	24.0	161.0	152.9	3.24
239	28.0	167.8	160.1	2.70
240	32.0	161.0	154.1	2.66
241	36.0	167.8	161.5	2.24
242	40.0	161.0	154.9	2.16
243	44.0	167.8	151.6	2.05
244	48.0	161.0	144.9	1.69
245	52.0	167.8	151.7	1.34
246	56.0	161.0	144.9	1.29
247	60.0	167.8	151.7	1.15
248	64.0	161.0	145.0	1.14
249	68.0	167.8	141.8	1.03
250	72.0	161.0	135.1	0.99
251	76.0	167.8	141.8	0.95
252	80.0	161.0	135.1	0.95
253	84.0	167.8	141.9	0.98
254	88.0	161.0	135.2	0.99
255	92.0	167.8	142.0	1.12
256	96.0	161.0	125.4	0.96
257	100.0	167.8	132.2	1.02
258	104.0	161.0	125.5	1.02
259	108.0	167.8	122.5	1.03
260	112.0	161.0	115.8	1.03
261	116.0	167.8	122.6	1.10
262	120.0	161.0	115.9	1.11
263	124.0	167.8	121.9	1.20
264	128.0	161.0	104.5	1.26
265	132.0	167.8	109.3	1.41
266	136.0	161.0	101.9	1.42
267	140.0	167.8	126.6	1.48
268	144.0	161.0	119.5	1.52
269	148.0	167.8	110.3	1.55
270	152.0	161.0	103.0	1.51
271	156.0	167.8	114.7	1.60
272	160.0	161.0	107.5	1.61
273	0.0	174.5	164.7	3.72
274	4.0	181.3	171.5	3.72
275	12.0	181.3	171.8	3.74
276	20.0	181.3	172.5	3.12
277	28.0	181.3	173.5	2.38
278	32.0	174.5	157.4	1145.32
279	36.0	181.3	174.7	1.98
280	40.0	174.5	158.3	4.48
281	44.0	181.3	165.1	1.60
282	48.0	174.5	158.4	1.47
283	52.0	181.3	165.1	1.20
284	56.0	174.5	158.4	1.17
285	60.0	181.3	165.2	1.13
286	64.0	174.5	148.5	1.10
287	68.0	181.3	155.3	0.95
288	72.0	174.5	148.6	0.95
289	76.0	181.3	155.3	0.97
290	80.0	174.5	148.6	0.97
291	84.0	181.3	155.4	1.06
292	88.0	174.5	148.7	1.03
293	92.0	181.3	145.6	0.99
294	96.0	174.5	138.9	1.01
295	100.0	181.3	145.7	1.08

296	104.0	174.5	129.1	1.04
297	108.0	181.3	136.0	1.08
298	112.0	174.5	129.3	1.09
299	116.0	181.3	136.1	1.16
300	120.0	174.5	129.2	1.14
301	124.0	181.3	134.3	1.31
302	128.0	174.5	127.0	1.36
303	132.0	181.3	141.0	1.46
304	136.0	174.5	133.8	1.45
305	140.0	181.3	125.0	1.50
306	144.0	174.5	127.8	1.53
307	148.0	181.3	129.3	1.44
308	152.0	174.5	122.0	1.57
309	156.0	181.3	123.6	1.56
310	160.0	174.5	116.2	1.56
311	0.0	188.0	178.2	3.72
312	4.0	194.8	185.0	3.71
313	12.0	194.8	185.3	3.66
314	20.0	194.8	185.9	2.77
315	28.0	194.8	186.8	2.07
316	36.0	194.8	178.0	5.25
317	40.0	188.0	171.8	1.79
318	44.0	194.8	178.6	1.38
319	48.0	188.0	171.9	1.28
320	52.0	194.8	178.6	1.14
321	56.0	188.0	171.9	1.13
322	60.0	194.8	168.7	1.01
323	64.0	188.0	162.0	0.97
324	68.0	194.8	168.8	0.96
325	72.0	188.0	162.1	0.96
326	76.0	194.8	168.8	1.00
327	80.0	188.0	162.1	0.99
328	84.0	194.8	168.9	1.13
329	88.0	188.0	162.2	1.14
330	92.0	194.8	159.1	1.04
331	96.0	188.0	152.4	1.05
332	100.0	194.8	149.3	1.09
333	104.0	188.0	142.6	1.08
334	108.0	194.8	149.5	1.14
335	112.0	188.0	142.8	1.15
336	116.0	194.8	148.9	1.18
337	120.0	188.0	141.6	1.25
338	124.0	194.8	145.4	1.25
339	128.0	188.0	138.0	1.27
340	132.0	194.8	139.9	1.43
341	136.0	188.0	132.5	1.46
342	140.0	194.8	144.1	1.39
343	144.0	188.0	136.7	1.44
344	148.0	194.8	138.5	1.53
345	152.0	188.0	131.0	1.53
346	156.0	194.8	132.9	1.51
347	160.0	188.0	125.4	1.52
348	0.0	201.5	191.7	3.82
349	4.0	208.3	198.5	3.78
350	8.0	201.5	191.8	3.68
351	12.0	208.3	198.8	3.64
352	16.0	201.5	192.3	3.64
353	20.0	208.3	199.4	2.38
354	24.0	201.5	193.0	2.19
355	28.0	208.3	200.2	1.84
356	36.0	208.3	201.3	1.73
357	40.0	201.5	185.3	1.48
358	44.0	208.3	192.1	1.24

359	48.0	201.5	185.4	1.20
360	52.0	208.3	182.1	1.60
361	56.0	201.5	185.4	1.13
362	60.0	208.3	182.2	0.97
363	64.0	201.5	175.5	0.96
364	68.0	208.3	182.3	0.99
365	72.0	201.5	175.6	0.99
366	76.0	208.3	172.4	0.97
367	80.0	201.5	175.6	1.06
368	84.0	208.3	182.4	1.20
369	88.0	201.5	175.7	1.22
370	92.0	208.3	172.6	1.06
371	96.0	201.5	165.9	1.14
372	100.0	208.3	162.8	1.13
373	104.0	201.5	156.1	1.13
374	108.0	208.3	163.0	1.19
375	112.0	201.5	156.2	1.21
376	116.0	208.3	160.4	1.28
377	120.0	201.5	152.9	1.30
378	124.0	208.3	164.7	1.39
379	128.0	201.5	147.4	1.40
380	132.0	208.3	159.1	1.38
381	136.0	201.5	151.6	1.40
382	140.0	208.3	162.9	1.60
383	144.0	201.5	146.0	1.53
384	148.0	208.3	148.1	1.50
385	152.0	201.5	140.5	1.51
386	156.0	208.3	151.8	1.62
387	160.0	201.5	144.2	1.63
388	8.0	215.0	205.3	3.65
389	12.0	221.8	212.3	3.60
390	16.0	215.0	205.8	2.74
391	24.0	215.0	206.5	1.91
392	28.0	221.8	213.6	1.68
393	32.0	215.0	197.5	6.26
394	36.0	221.8	204.7	20.00
395	40.0	215.0	198.6	1.27
396	44.0	221.8	205.6	1.19
397	48.0	215.0	198.9	1.17
398	52.0	221.8	195.6	1.61
399	56.0	215.0	188.9	0.98
400	60.0	221.8	195.7	0.98
401	64.0	215.0	189.0	0.98
402	68.0	221.8	195.8	1.02
403	72.0	215.0	179.1	1.01
404	76.0	221.8	195.8	1.09
405	80.0	215.0	189.1	1.13
406	84.0	221.8	195.9	1.24
407	88.0	215.0	179.3	1.07
408	92.0	221.8	186.1	1.23
409	96.0	215.0	169.5	1.14
410	100.0	221.8	176.3	1.18
411	104.0	215.0	169.6	1.19
412	108.0	221.8	175.4	1.25
413	112.0	215.0	167.8	1.27
414	116.0	221.8	179.6	1.33
415	120.0	215.0	172.2	1.38
416	124.0	221.8	174.1	1.38
417	128.0	215.0	166.6	1.39
418	132.0	221.8	168.7	1.49
419	136.0	215.0	161.1	1.52
420	140.0	221.8	163.3	1.49
421	144.0	215.0	155.7	1.50

422	148.0	221.8	167.0	1.51
423	152.0	215.0	159.4	1.57
424	156.0	221.8	161.6	1.70
425	160.0	215.0	154.0	1.73
426	4.0	235.3	225.5	3.68
427	24.0	228.5	219.9	1.71
428	28.0	235.3	217.1	8.91
429	32.0	228.5	210.8	6.59
430	40.0	228.5	211.9	1.19
431	44.0	235.3	219.1	1.17
432	48.0	228.5	212.4	1.17
433	52.0	235.3	209.1	0.98
434	56.0	228.5	202.4	0.98
435	60.0	235.3	209.2	1.01
436	64.0	228.5	202.5	1.01
437	68.0	235.3	199.3	1.03
438	72.0	228.5	192.6	1.00
439	76.0	235.3	209.3	1.18
440	80.0	228.5	202.6	1.24
441	84.0	235.3	189.5	1.22
442	88.0	228.5	192.8	1.13
443	92.0	235.3	189.7	1.18
444	96.0	228.5	183.0	1.18
445	100.0	235.3	189.8	1.23
446	104.0	228.5	182.9	1.24
447	108.0	235.3	194.7	1.22
448	112.0	228.5	187.2	1.29
449	116.0	235.3	189.2	1.35
450	120.0	228.5	181.7	1.35
451	124.0	235.3	183.9	1.46
452	128.0	228.5	176.3	1.49
453	132.0	235.3	178.6	1.47
454	136.0	228.5	170.9	1.48
455	140.0	235.3	182.3	1.53
456	144.0	228.5	174.6	1.54
457	148.0	235.3	177.0	1.66
458	152.0	228.5	169.3	1.68
459	156.0	235.3	171.9	1.46
460	160.0	228.5	164.1	1.48
461	8.0	242.0	232.3	3.61
462	12.0	248.8	239.2	2.07
463	24.0	242.0	223.4	1.46
464	28.0	248.8	240.4	1.51
465	32.0	242.0	234.2	1.52
466	36.0	248.8	241.4	1.67
467	40.0	242.0	225.2	1.16
468	44.0	248.8	232.5	1.16
469	48.0	242.0	225.9	1.21
470	52.0	248.8	222.6	1.00
471	56.0	242.0	215.9	1.00
472	60.0	248.8	222.7	1.04
473	64.0	242.0	216.0	1.06
474	68.0	248.8	212.8	1.04
475	72.0	242.0	206.1	1.03
476	76.0	248.8	222.8	1.27
477	80.0	242.0	216.1	1.28
478	84.0	248.8	213.0	1.18
479	88.0	242.0	206.3	1.27
480	92.0	248.8	213.1	1.19
481	96.0	242.0	196.5	1.22
482	100.0	248.8	200.4	1.30
483	104.0	242.0	192.7	1.31
484	108.0	248.8	204.4	1.35

485	112.0	242.0	196.8	1.36
486	116.0	248.8	199.1	1.45
487	120.0	242.0	191.5	1.45
488	124.0	248.8	193.9	1.45
489	128.0	242.0	186.2	1.46
490	132.0	248.8	197.6	1.51
491	136.0	242.0	189.9	1.52
492	140.0	248.8	192.4	1.63
493	144.0	242.0	184.7	1.65
494	148.0	248.8	187.3	1.42
495	152.0	242.0	179.6	1.44
496	156.0	248.8	182.4	1.58
497	160.0	242.0	174.6	1.58
498	0.0	255.5	245.7	3.82
499	4.0	262.3	252.5	3.62
500	8.0	255.5	245.8	2.60
501	12.0	262.3	252.7	1.75
502	20.0	262.3	253.2	1.52
503	24.0	255.5	246.8	1.53
504	28.0	262.3	253.9	1.52
505	32.0	255.5	237.6	7.24
506	36.0	262.3	244.8	1.09
507	40.0	255.5	248.6	1.78
508	44.0	262.3	245.8	1.19
509	48.0	255.5	239.4	1.25
510	52.0	262.3	236.1	1.03
511	56.0	255.5	229.4	1.03
512	60.0	262.3	226.1	1.10
513	64.0	255.5	219.4	1.06
514	68.0	262.3	226.2	1.07
515	72.0	255.5	219.6	1.07
516	76.0	262.3	236.3	1.28
517	80.0	255.5	209.7	1.26
518	84.0	262.3	226.5	1.26
519	88.0	255.5	219.8	1.25
520	92.0	262.3	234.0	1.40
521	96.0	255.5	207.8	1.29
522	100.0	262.3	219.7	1.36
523	104.0	255.5	212.1	1.35
524	108.0	262.3	214.4	1.36
525	112.0	255.5	206.8	1.37
526	116.0	262.3	218.2	1.50
527	120.0	255.5	201.6	1.44
528	124.0	262.3	213.0	1.49
529	128.0	255.5	205.3	1.50
530	132.0	262.3	216.6	1.72
531	136.0	255.5	200.1	1.61
532	140.0	262.3	202.9	1.37
533	144.0	255.5	195.1	1.41
534	148.0	262.3	197.9	1.58
535	152.0	255.5	190.2	1.58
536	156.0	262.3	201.7	1.84
537	160.0	255.5	185.4	1.37
538	0.0	269.0	259.2	3.76
539	4.0	275.8	266.0	1.96
540	8.0	269.0	259.3	1.81
541	12.0	275.8	266.2	1.59
542	16.0	269.0	259.6	1.54
543	20.0	275.8	256.8	1.48
544	24.0	269.0	250.4	1.39
545	28.0	275.8	267.3	1.52
546	32.0	269.0	261.0	1.61
547	36.0	275.8	258.2	1.10

548	40.0	269.0	262.0	1.73
549	44.0	275.8	259.2	1.25
550	48.0	269.0	242.8	1.02
551	52.0	275.8	249.6	1.06
552	56.0	269.0	242.9	1.04
553	60.0	275.8	239.6	1.09
554	64.0	269.0	232.9	1.07
555	68.0	275.8	239.7	1.10
556	72.0	269.0	243.0	1.28
557	76.0	275.8	229.9	1.31
558	80.0	269.0	223.2	1.24
559	84.0	275.8	228.9	1.27
560	88.0	269.0	241.2	1.40
561	92.0	275.8	235.0	1.32
562	96.0	269.0	227.4	1.32
563	100.0	275.8	229.8	1.22
564	104.0	269.0	222.1	1.31
565	108.0	275.8	233.6	1.46
566	112.0	269.0	225.9	1.48
567	116.0	275.8	228.4	1.46
568	120.0	269.0	220.7	1.47
569	124.0	275.8	223.4	1.52
570	128.0	269.0	215.6	1.56
571	132.0	275.8	218.4	1.39
572	136.0	269.0	210.6	1.40
573	140.0	275.8	213.5	1.55
574	144.0	269.0	205.7	1.56
575	148.0	275.8	217.3	1.77
576	152.0	269.0	209.5	1.80
577	156.0	275.8	204.1	1.58
578	160.0	269.0	196.3	1.62
579	0.0	282.5	272.7	3.73
580	8.0	282.5	272.8	1.59
581	12.0	289.3	279.7	1.52
582	16.0	282.5	273.1	1.48
583	20.0	289.3	270.3	1.46
584	24.0	282.5	263.8	0.99
585	28.0	289.3	280.7	1.57
586	32.0	282.5	274.4	1.58
587	36.0	289.3	271.6	1.12
588	40.0	282.5	255.4	2.11
589	44.0	289.3	262.5	1.04
590	48.0	282.5	256.3	1.05
591	52.0	289.3	263.1	1.11
592	56.0	282.5	246.3	1.12
593	60.0	289.3	253.1	1.11
594	64.0	282.5	246.4	1.10
595	68.0	289.3	253.2	1.14
596	72.0	282.5	256.5	1.35
597	76.0	289.3	243.1	1.31
598	80.0	282.5	236.0	1.28
599	84.0	289.3	249.6	1.36
600	88.0	282.5	242.5	1.31
601	92.0	289.3	245.2	1.21
602	96.0	282.5	237.5	1.21
603	100.0	289.3	240.1	1.38
604	104.0	282.5	232.4	1.40
605	108.0	289.3	243.9	1.40
606	112.0	282.5	236.2	1.41
607	116.0	289.3	238.9	1.49
608	120.0	282.5	231.1	1.51
609	124.0	289.3	233.9	1.38
610	128.0	282.5	226.2	1.39

611	132.0	289.3	229.1	1.52
612	136.0	282.5	221.3	1.54
613	140.0	289.3	232.9	1.73
614	144.0	282.5	225.1	1.73
615	148.0	289.3	219.8	1.50
616	152.0	282.5	212.0	1.54
617	156.0	289.3	223.8	1.57
618	160.0	282.5	215.9	1.57
619	0.0	296.0	286.2	3.57
620	8.0	296.0	286.3	1.48
621	12.0	302.8	293.2	1.46
622	16.0	296.0	286.6	1.44
623	20.0	302.8	283.7	1.00
624	24.0	296.0	277.3	0.99
625	28.0	302.8	284.3	11.86
626	32.0	296.0	268.0	1.41
627	36.0	302.8	285.0	1.18
628	40.0	296.0	268.8	2.05
629	44.0	302.8	275.9	1.07
630	48.0	296.0	269.7	1.08
631	52.0	302.8	276.6	1.21
632	56.0	296.0	259.8	1.12
633	60.0	302.8	266.6	1.14
634	64.0	296.0	259.9	1.14
635	68.0	302.8	266.7	1.14
636	72.0	296.0	250.1	1.36
637	76.0	302.8	264.0	1.15
638	80.0	296.0	256.8	1.32
639	84.0	302.8	260.6	1.19
640	88.0	296.0	252.9	1.20
641	92.0	302.8	255.6	1.36
642	96.0	296.0	247.8	1.37
643	100.0	302.8	259.4	1.36
644	104.0	296.0	251.6	1.39
645	108.0	302.8	254.4	1.44
646	112.0	296.0	246.6	1.44
647	116.0	302.8	258.1	1.68
648	120.0	296.0	241.7	1.37
649	124.0	302.8	244.7	1.49
650	128.0	296.0	236.9	1.50
651	132.0	302.8	240.0	1.62
652	136.0	296.0	232.2	1.63
653	140.0	302.8	243.9	1.81
654	144.0	296.0	227.6	1.47
655	148.0	302.8	239.5	1.50
656	152.0	296.0	231.6	1.54
657	156.0	302.8	235.1	1.62
658	160.0	296.0	227.3	1.64
659	0.0	309.5	299.7	1.53
660	4.0	316.3	306.4	1.45
661	12.0	316.3	306.7	1.42
662	16.0	309.5	300.1	1.46
663	20.0	316.3	297.2	1.01
664	24.0	309.5	290.7	1.01
665	28.0	316.3	287.9	1.52
666	32.0	309.5	281.5	1.05
667	36.0	316.3	298.5	1.15
668	40.0	309.5	292.2	1.24
669	44.0	316.3	289.3	1.10
670	48.0	309.5	283.1	1.12
671	52.0	316.3	280.0	1.16
672	56.0	309.5	283.4	1.14
673	60.0	316.3	280.1	1.17

674	64.0	309.5	273.4	1.17
675	68.0	316.3	278.5	1.22
676	72.0	309.5	271.2	1.17
677	76.0	316.3	275.3	1.26
678	80.0	309.5	268.0	1.20
679	84.0	316.3	271.1	1.34
680	88.0	309.5	263.3	1.35
681	92.0	316.3	274.9	1.36
682	96.0	309.5	267.1	1.37
683	100.0	316.3	269.9	1.42
684	104.0	309.5	262.2	1.43
685	108.0	316.3	265.1	1.38
686	112.0	309.5	265.9	1.66
687	116.0	316.3	260.3	1.46
688	120.0	309.5	252.5	1.47
689	124.0	316.3	255.7	1.58
690	128.0	309.5	247.8	1.60
691	132.0	316.3	259.6	1.75
692	136.0	309.5	251.8	1.78
693	140.0	316.3	255.1	1.52
694	144.0	309.5	247.3	1.56
695	148.0	316.3	250.8	1.61
696	152.0	309.5	243.0	1.62
697	156.0	316.3	255.1	2.02
698	160.0	309.5	247.3	2.08
699	4.0	329.8	319.9	1.40
700	8.0	323.0	303.5	2.19
701	12.0	329.8	310.3	1.62
702	16.0	323.0	313.6	1.46
703	20.0	329.8	310.7	1.03
704	28.0	329.8	301.4	1.09
705	32.0	323.0	314.7	1.63
706	36.0	329.8	311.9	1.24
707	40.0	323.0	305.6	1.27
708	44.0	329.8	302.7	1.15
709	48.0	323.0	296.5	1.22
710	52.0	329.8	303.6	1.15
711	56.0	323.0	286.8	1.17
712	60.0	329.8	292.9	1.21
713	64.0	323.0	285.7	1.21
714	68.0	329.8	289.8	1.27
715	72.0	323.0	282.5	1.27
716	76.0	329.8	286.6	1.32
717	80.0	323.0	278.8	1.33
718	84.0	329.8	290.4	1.34
719	88.0	323.0	282.6	1.35
720	92.0	329.8	285.5	1.39
721	96.0	323.0	277.7	1.40
722	100.0	329.8	280.7	1.40
723	104.0	323.0	272.9	1.38
724	108.0	329.8	275.9	1.43
725	112.0	323.0	268.1	1.44
726	116.0	329.8	271.3	1.55
727	120.0	323.0	263.5	1.56
728	124.0	329.8	275.2	1.70
729	128.0	323.0	267.4	1.73
730	132.0	329.8	270.8	1.70
731	136.0	323.0	263.0	1.64
732	140.0	329.8	266.5	1.57
733	144.0	323.0	258.7	1.58
734	148.0	329.8	262.3	1.71
735	152.0	323.0	254.5	1.70
736	156.0	329.8	258.3	1.66

737	160.0	323.0	250.4	1.70
738	4.0	343.3	333.4	1.38
739	8.0	336.5	326.8	1.45
740	12.0	343.3	323.8	1.61
741	16.0	336.5	317.2	1.03
742	20.0	343.3	324.2	1.06
743	24.0	336.5	327.5	1.54
744	28.0	343.3	314.8	1.08
745	32.0	336.5	318.3	9.16
746	36.0	343.3	325.3	1.30
747	40.0	336.5	309.1	1.12
748	44.0	343.3	316.2	1.27
749	48.0	336.5	299.8	1.20
750	52.0	343.3	307.0	1.20
751	56.0	336.5	300.2	1.20
752	60.0	343.3	304.3	1.26
753	64.0	336.5	297.0	1.26
754	68.0	343.3	310.2	1.31
755	72.0	336.5	293.9	1.33
756	76.0	343.3	314.6	1.50
757	80.0	336.5	298.2	1.33
758	84.0	343.3	301.1	1.36
759	88.0	336.5	293.3	1.38
760	92.0	343.3	296.3	1.42
761	96.0	336.5	288.5	1.39
762	100.0	343.3	291.6	1.37
763	104.0	336.5	283.7	1.41
764	108.0	343.3	287.0	1.51
765	112.0	336.5	279.1	1.53
766	116.0	343.3	290.9	1.65
767	120.0	336.5	291.5	1.87
768	124.0	343.3	286.5	1.77
769	128.0	336.5	278.6	1.72
770	132.0	343.3	282.2	1.51
771	136.0	336.5	274.3	1.54
772	140.0	343.3	278.0	1.68
773	144.0	336.5	270.2	1.70
774	152.0	336.5	266.1	1.62
775	156.0	343.3	270.0	1.77
776	160.0	336.5	262.2	1.82
777	0.0	350.0	330.3	1.41
778	8.0	350.0	340.3	1.43
779	16.0	350.0	330.7	1.05
780	24.0	350.0	321.3	1.12
781	32.0	350.0	331.7	1.26
782	40.0	350.0	322.5	1.17
783	48.0	350.0	323.3	1.19
784	56.0	350.0	321.2	1.25
785	64.0	350.0	317.6	1.25
786	72.0	350.0	322.4	1.49
787	80.0	350.0	308.8	1.35
788	88.0	350.0	304.1	1.41
789	96.0	350.0	307.9	1.61
790	104.0	350.0	294.8	1.49
791	112.0	350.0	298.7	1.63
792	120.0	350.0	294.3	1.73
793	128.0	350.0	290.0	1.47
794	136.0	350.0	285.9	1.65
795	144.0	350.0	290.4	2.00
796	152.0	350.0	277.9	1.72
797	160.0	350.0	274.1	2.00

==========