PARABOLIC WATERWAY DESIGN

RETARDANCE - D & C
GRADE, % - 12 & 15

V_1 Based on Permissible Velocity of the Soil with Retardance "D"
Top Width, Depth and V_2 Based on Retardance "C"

Grade = 12%

V_1	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0
V_2	1.3	1.7	2.1	2.6	3.0	3.5	4.1	4.6	5.1
D	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.7
Q				Top Widths					
15	43	31	23	18	14	12	10	8	7
20	58	41	31	24	19	16	13	11	9
25	72	51	38	30	24	20	16	14	12
30	87	61	46	36	29	24	19	16	14
35		71	54	42	34	27	23	19	16
40		82	61	47	38	31	26	22	18
45		92	69	53	43	35	29	24	21
50			76	59	48	39	32	27	23
55			84	65	53	43	36	30	25
60			92	71	57	47	39	33	28
65			99	77	62	51	42	35	30
70				83	67	55	45	38	32
75				89	72	59	49	41	34
80				95	76	63	52	43	37
90					86	70	58	49	41
100					95	78	65	54	46
110						86	71	60	51
120						94	78	65	55
130							84	70	60
140							90	76	64
150							97	81	69
160								87	73
170								92	78
180								97	83
190									87
200									92

Grade = 15%

V_1	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0
V_2	1.3	1.7	2.1	2.6	3.0	3.5	3.9	4.5	5.0
D	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.6
Q				Top Widths					
15	47	34	26	20	16	13	11	9	8
20	63	45	34	26	22	18	15	12	11
25	79	57	43	33	27	22	19	15	13
30	95	68	51	39	33	26	22	18	16
35		79	60	46	38	31	26	22	18
40		91	68	53	43	35	30	25	21
45			77	59	49	39	33	28	24
50			85	66	54	44	37	31	26
55			94	72	60	48	41	34	29
60				79	65	53	44	37	31
65				85	70	57	48	40	34
70				92	76	61	52	43	37
75				98	81	66	55	46	39
80					86	70	59	49	42
90					97	79	66	55	47
100						87	74	61	52
110						96	81	68	58
120							88	74	63
130							96	80	68
140								86	73
150								92	78
160								98	84
170									89
180									94
190									99

Exhibit 7-5.1

7-42.1

REFERENCE
SCS - TP - 61

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
ENGINEERING & WATERSHED PLANNING UNIT
UPPER DARBY, PENNSYLVANIA

RTSC - NE - ENG. 710

SHEET 1 OF 1