TABLE 7-1

Soil Erodibility Factors (K) and Textures of the A, B, and C Horizons (page 3)

SOIL SERIES	HORIZONS	USDA TEXTURES	"K" FACTORS
SCARBORO	A	LS, SL, MK-LS, MK-SL	.17
	B	LS, S, COS	.10
	C	SR-LFS,GR-COS	.10
SCIO	A	SIL, VFSL	.49
	A	STONY PHASES	.37
	B	SIL, VFSL	.64
	C	SR-GRV-S-SIL	.17
STISSING	A	SIL, L	.28
	A	STONY PHASES	.20
	B	CN-SIL, SIL, CN-L	.37
	C	CN-SIL, SIL, CN-L	.28
SUDBURY	A	FSL, SL, VFSL	.24
	B	SL, FSL, GR-SL	.24
	C	SR-S-G	.10
SUTTON	A	FSL, L, SL	.24
	A	STONY PHASES	.20
	B	FSL, L, GR-FSL	.32
	C	FSL, GR-SL, SL	.24
TISBURY	A	SIL, VFSL	.49
	B	SIL, VFSL	.64
	C	GRV-S, GR-S	.10
UDIPSAMMENTS	-	COS, S, FS	.10
UDORTHENTS	(TOO VARIABLE TO RATE)		
URBAN LAND	(TOO VARIABLE TO RATE)		
WALPOLE	A	FSL, SL	.20
	B	FSL, SL, GR-SL	.24
	C	GR-LS, GR-S, S	.10
WAPPING	A	SIL, L, VFSL	.28
	A	STONY PHASES	.20
	B	GR-FSL, GR-SL, L	.43
	C	GR-FSL, GR-SL, L	.24
WHITMAN	A	FSL, SL, SIL	.28
	A	STONY PHASES	.20
	B	SL, GR-FSL, GR-SIL	.32
	C	SL, GR-FSL, L	.24
WINDSOR	A	LS, LFS	.17
	B	LS, LFS, S	.17
	C	S, FS	.10
WOODBRIDGE	A	FSL, L, SL	.24
	A	STONY PHASES	.20
	B	FSL, L, GR-FSL	.32
	C	FSL, L, GR-FSL	.24

Source: U.S. Department of Agriculture, Soil Conservation Service, West Warwick, Rhode Island

EXAMPLE 4

To determine soil loss from gullies, we cannot use the USLE but must compute soil loss by direct measurement. If a gully has formed that is 60 feet long and averages two feet wide by one foot deep, we have lost 60 X 2 X 1 = 120 cubic feet of soil. For a fine sandy loam, using the conversion in Table 7-8, we compute the weight to be 120 cubic feet X 100 pounds/cubic feet = 12,000 pounds; this is 6 tons of soil loss from the gully.

TABLE 7-3

Soil Erodibility Classes

K	CLASS
0.10-0.24	low
0.28-0.37	medium
0.43-0.64	high

Adapted from: Virginia Erosion and Sedimentation Handbook, Virginia Soil & Water Conservation Commission, 1980

TABLE 7-2

USDA Texture Abbreviations

TEXTURE MODIFIER

CB	Cobbly	GRV	Very Gravelly
CN	Channery	MK	Mucky
CNV	Very Channery	SR	Stratified
GR	Gravelly	ST	Stony

TEXTURES

G	Gravel	SL	Sandy Loam
COS	Coarse Sand	FSL	Fine Sandy Loam
S	Sand	VFSL	Very Fine Sandy Loam
FS	Fine Sand	L	Loam
VFS	Very Fine Sand	SIL	Silt Loam
LCOS	Loamy Coarse Sand	SI	Silt
LS	Loamy Sand	CL	Clay Loam
LFS	Loamy Fine Sand	SICL	Silty Clay Loam
LVFS	Loamy Very Fine Sand	SIC	Silty Clay
COSL	Coarse Sandy Loam	C	Clay

Adapted from: Virginia Erosion and Sedimentation Handbook, Virginia Soil & Water Conservation Commission, 1980

TABLE 7-4

Topographic Adjustment Factors (LS)
for Slope Percent and Slope Length

SLOPE PERCENT	SLOPE LENGTH (FEET) 20	40	60	80	100	120	140	160	180	200	300	400	500	600	700	800	900	1000
0.5	0.06	0.08	0.08	0.09	0.10	0.10	0.11	0.11	0.12	0.12	0.14	0.15	0.16	0.17	0.18	0.18	0.19	0.20
1.0	0.08	0.10	0.11	0.12	0.13	0.14	0.14	0.15	0.15	0.16	0.18	0.20	0.21	0.22	0.23	0.24	0.25	0.26
2.0	0.12	0.15	0.17	0.19	0.20	0.21	0.22	0.23	0.24	0.25	0.28	0.31	0.33	0.34	0.36	0.38	0.39	0.40
3.0	0.18	0.22	0.25	0.27	0.29	0.30	0.32	0.33	0.34	0.35	0.40	0.44	0.47	0.49	0.52	0.54	0.56	0.57
4.0	0.21	0.28	0.33	0.37	0.40	0.43	0.46	0.48	0.51	0.53	0.62	0.70	0.76	0.82	0.87	0.92	0.96	1.01
5.0	0.24	0.34	0.41	0.48	0.54	0.59	0.63	0.68	0.72	0.76	0.93	1.07	1.20	1.31	1.42	1.52	1.61	1.69
6.0	0.30	0.43	0.52	0.60	0.67	0.74	0.80	0.85	0.90	0.95	1.17	1.35	1.50	1.65	1.78	1.90	2.02	2.13
8.0	0.44	0.63	0.77	0.89	0.99	1.09	1.17	1.25	1.33	1.40	1.72	1.98	2.22	2.43	2.62	2.81	2.98	3.14
10.0	0.61	0.87	1.06	1.23	1.37	1.50	1.62	1.73	1.84	1.94	2.37	2.74	3.06	3.36	3.62	3.87	4.11	4.33
12.0	0.81	1.14	1.40	1.61	1.80	1.98	2.14	2.28	2.42	2.55	3.13	3.61	4.04	4.42	4.77	5.10	5.41	5.71
14.0	1.03	1.45	1.78	2.05	2.29	2.51	2.72	2.90	3.08	3.25	3.98	4.59	5.13	5.62	6.07	6.49	6.88	7.26
16.0	1.27	1.80	2.20	2.54	2.84	3.11	3.36	3.59	3.81	4.01	4.92	5.68	6.35	6.95	7.51	8.03	8.52	8.98
18.0	1.54	2.17	2.66	3.07	3.43	3.76	4.06	4.34	4.61	4.86	5.95	6.87	7.68	8.41	9.09	9.71	10.30	10.86
20.0	1.82	2.58	3.16	3.65	4.08	4.47	4.83	5.16	5.47	5.77	7.07	8.16	9.12	9.99	10.79	11.54	12.24	12.90
25.0	2.63	3.73	4.56	5.27	5.89	6.45	6.97	7.45	7.90	8.33	10.20	11.78	13.17	14.43	15.59	16.66	17.67	18.63
30.0	3.56	5.03	6.16	7.11	7.95	8.71	9.41	10.06	10.67	11.25	13.78	15.91	17.79	19.48	21.04	22.50	23.86	25.15
40.0	5.66	8.00	9.80	11.32	12.65	13.86	14.97	16.01	16.98	17.30	21.92	25.31	28.30	31.00	33.48			
50.0	7.97	11.27	13.81	15.94	17.82	19.53	21.09	22.55	23.91	25.21	30.87							
60.0	10.35	14.64	17.93	20.71	23.15	25.36	27.39	29.29	31.06	32.74								

Source: U.S. Department of Agriculture, Soil Conservation Service, Storrs, Connecticut

TABLE 7-5

Cover Index Factor (C)
for Construction Sites

TYPE OF COVER		FACTOR C	PERCENT 1/
None (fallow ground)		1.0	0.0
Temporary Seedings (90 percent stand)			
Ryegrass (perennial type)		0.05	95
Ryegrass (annuals)		0.1	90
Small grain		0.05	95
Millet or sudan grass		0.05	95
Field bromegrass		0.03	97
Permanent Seeding (90 percent stand)		0.01	99
Sod (laid immediately)		0.01	99
	APPLICATION RATE *Tons Per Acre*		
Mulch			
Hay	0.50	0.25	75
Hay	1.00	0.13	87
Hay	1.50	0.07	93
Hay	2.00	0.02	98
Small grain straw	2.00	0.02	98
Wood chips	6.00	0.06	94
Wood cellulose	1.75	0.10	90
Fiberglass	0.50	0.05	95
Asphalt emulsion (1,250 gals/acre)		0.02	98

Fiber matting, excelsior, gravel and stone may also be used as protective cover.
1/ Percent soil loss reduction as compared with fallow ground

Source: U.S. Department of Agriculture, Soil Conservation Service, West Warwick, Rhode Island

TABLE 7-6

Practice Factor (P) for Surface Conditions for Construction Sites

SURFACE CONDITION WITH NO COVER 1/	FACTOR P
Compact and smooth, scraped with bulldozer or scraper up and down hill	1.3
Same condition, except raked with bulldozer root rake up and down hill	1.2
Compact and smooth, scraped with bulldozer or scraper across the slope	1.2
Same condition, except raked with bulldozer root rake across the slope	0.9
Loose as a disked plow layer	1.0
Rough irregular surface equipment tracks in all directions	0.9
Loose with rough surface greater than 12" depth	0.8
Loose with smooth surface greater than 12" depth	0.9

1/ Values based on estimates

Source: U.S. Department of Agriculture, Soil Conservation Service, West Warwick, Rhode Island

TABLE 7-7

Adjustment Factor (M) for Estimating Monthly and Portions of Annual Soil Loss in Rhode Island

MONTH	M (%)	MONTH	M (%)
January	3	July	13
February	3	August	18
March	5	September	13
April	4	October	8
May	6	November	8
June	12	December	7
SUBTOTAL	33	TOTAL	100

Adapted from: Virginia Erosion and Sedimentation Handbook, Virginia Soil & Water Conservation Commission, 1980

TABLE 7-8

Approximate Soil Weights per Unit Volumes

SOILS TEXTURE	POUNDS PER CUBIC FOOT	CUBIC YARDS PER TON
Sandy and loamy sands	110	0.67
Sandy loam	105	0.71
Fine sandy loam	100	0.74
Loam	90	0.82
Silt loam	85	0.87
Silty clay loam	80	0.93
Clay loam	75	0.99
Silty, sandy clay and clay	70	1.06
Aerated sediment	80 *	0.93
Saturated sediment	60 *	1.24

*These are the approximate aerated and saturated weights to be used at damage sites (streams or reservoirs).

Source: U.S. Department of Agriculture, Soil Conservation Service, West Warwick, Rhode Island