EARTH FILL VOLUME TABLES

CUBIC YARDS OF EARTH PER LINEAR FOOT OF EMBANKMENT

SIDE SLOPES 3:1 AND 2:1

CENTER HEIGHT IN FEET	6 FOOT TOP WIDTH — Tenths of a Foot									
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3
1.0	0.3	0.4	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.8
2.0	0.8	0.9	0.9	1.0	1.1	1.1	1.2	1.3	1.3	1.4
3.0	1.5	1.6	1.7	1.7	1.8	1.9	2.0	2.1	2.2	2.3
4.0	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3
5.0	3.4	3.5	3.7	3.8	3.9	4.0	4.1	4.3	4.4	4.5
6.0	4.7	4.8	4.9	5.1	5.2	5.4	5.5	5.6	5.8	5.9
7.0	6.1	6.2	6.4	6.6	6.7	6.9	7.0	7.2	7.4	7.5
8.0	7.7	7.9	8.0	8.2	8.4	8.6	8.8	8.9	9.1	9.2
9.0	9.5	9.7	9.9	10.1	10.3	10.5	10.7	10.9	11.1	11.3
10.0	11.5	11.7	11.9	12.1	12.3	12.5	12.8	13.0	13.2	13.4
11.0	13.6	13.9	14.1	14.3	14.6	14.8	15.0	15.3	15.5	15.8
12.0	16.0	16.2	16.5	16.7	17.0	17.2	17.5	17.8	18.0	18.3
13.0	18.5	18.8	19.1	19.3	19.6	19.9	20.1	20.4	20.7	21.0
14.0	21.3	21.5	21.8	22.1	22.4	22.7	23.0	23.3	23.6	23.9
15.0	24.2	24.5	24.8	25.1	25.4	25.7	26.0	26.3	26.6	26.9
16.0	27.3	27.6	27.9	28.2	28.5	28.9	29.2	29.5	29.9	30.2
17.0	30.5	30.9	31.2	31.6	31.9	32.2	32.6	32.9	33.3	33.6
18.0	34.0	34.4	34.7	35.1	35.4	35.8	36.2	36.5	36.9	37.3
19.0	37.6	38.0	38.4	38.8	39.2	39.5	39.9	40.3	40.7	41.1
20.0	41.5	41.9	42.3	42.7	43.1	43.5	43.9	44.3	44.7	45.1
21.0	45.5	45.9	46.3	46.7	47.2	47.6	48.0	48.4	48.8	49.3
22.0	49.7	50.1	50.6	51.0	51.4	51.9	52.3	52.8	53.2	53.6
23.0	54.1	54.5	55.0	55.4	55.9	56.4	56.8	57.3	57.7	58.2
24.0	58.6	59.1	59.6	60.1	60.5	61.0	61.5	62.0	62.5	62.9

CENTER HEIGHT IN FEET	8 FOOT TOP WIDTH — Tenths of a Foot									
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4
1.0	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.8	0.9	0.9
2.0	1.0	1.0	1.1	1.2	1.3	1.3	1.4	1.5	1.6	1.6
3.0	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6
4.0	2.7	2.8	2.9	3.0	3.1	3.2	3.4	3.5	3.6	3.7
5.0	3.8	3.9	4.1	4.2	4.3	4.5	4.6	4.7	4.9	5.0
6.0	5.1	5.3	5.4	5.6	5.7	5.9	6.0	6.2	6.3	6.5
7.0	6.6	6.8	7.0	7.1	7.3	7.5	7.6	7.8	8.0	8.1
8.0	8.3	8.5	8.7	8.9	9.1	9.2	9.4	9.6	9.8	10.0
9.0	10.2	10.4	10.6	10.8	11.0	11.2	11.4	11.6	11.8	12.0
10.0	12.2	12.4	12.7	12.9	13.1	13.3	13.6	13.8	14.0	14.2
11.0	14.5	14.7	15.0	15.2	15.4	15.7	15.9	16.2	16.4	16.7
12.0	16.9	17.2	17.4	17.7	17.9	18.2	18.5	18.7	19.0	19.2
13.0	19.5	19.8	20.1	20.3	20.6	20.9	21.2	21.5	21.7	22.0
14.0	22.3	22.6	22.9	23.2	23.5	23.8	24.1	24.4	24.7	25.0
15.0	25.3	25.6	25.9	26.2	26.5	26.9	27.2	27.5	27.8	28.1
16.0	28.4	28.8	29.1	29.5	29.8	30.1	30.5	30.8	31.1	31.5
17.0	31.8	32.2	32.5	32.9	33.2	33.5	33.9	34.3	34.6	35.0
18.0	35.3	35.7	36.1	36.5	36.8	37.2	37.6	37.9	38.3	38.7
19.0	39.1	39.5	39.8	40.2	40.6	41.0	41.4	41.8	42.2	42.6
20.0	43.0	43.4	43.8	44.2	44.6	45.0	45.4	45.8	46.2	46.6
21.0	47.0	47.4	47.9	48.3	48.7	49.2	49.6	50.0	50.5	50.9
22.0	51.3	51.8	52.2	52.7	53.1	53.6	54.0	54.5	54.9	55.4
23.0	55.8	56.3	56.7	57.2	57.7	58.1	58.6	59.1	59.5	60.0
24.0	60.4	60.9	61.4	61.9	62.4	62.9	63.3	63.8	64.3	64.8

CENTER HEIGHT IN FEET	10 FOOT TOP WIDTH — Tenths of a Foot									
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.4
1.0	0.5	0.5	0.6	0.7	0.7	0.8	0.9	0.9	1.0	1.1
2.0	1.1	1.2	1.3	1.4	1.4	1.5	1.6	1.7	1.8	1.9
3.0	1.9	2.0	2.1	2.3	2.4	2.5	2.6	2.7	2.8	2.9
4.0	3.0	3.1	3.2	3.3	3.5	3.6	3.7	3.8	3.9	4.1
5.0	4.2	4.3	4.5	4.6	4.7	4.9	5.0	5.1	5.3	5.4
6.0	5.6	5.7	5.9	6.0	6.2	6.4	6.5	6.7	6.8	7.0
7.0	7.1	7.3	7.5	7.7	7.8	8.0	8.2	8.4	8.5	8.7
8.0	8.9	9.1	9.3	9.5	9.7	9.9	10.1	10.3	10.4	10.6
9.0	10.8	11.0	11.3	11.5	11.7	11.9	12.1	12.3	12.5	12.6
10.0	13.0	13.2	13.4	13.7	13.9	14.1	14.4	14.6	14.8	15.0
11.0	15.3	15.5	15.8	16.0	16.3	16.5	16.8	17.0	17.3	17.5
12.0	17.8	18.1	18.3	18.6	18.9	19.1	19.4	19.7	19.9	20.2
13.0	20.5	20.8	21.0	21.3	21.6	21.9	22.2	22.5	22.8	23.0
14.0	23.3	23.6	23.9	24.3	24.6	24.9	25.2	25.5	25.8	26.1
15.0	26.4	26.7	27.0	27.4	27.7	28.0	28.3	28.7	29.0	29.3
16.0	29.6	30.0	30.3	30.7	31.0	31.4	31.7	32.0	32.4	32.7
17.0	33.1	33.4	33.8	34.1	34.5	34.9	35.2	35.6	36.0	36.3
18.0	36.7	37.1	37.4	37.8	38.2	38.6	38.9	39.3	39.7	40.1
19.0	40.5	40.9	41.3	41.7	42.1	42.5	42.9	43.3	43.6	44.0
20.0	44.4	44.9	45.3	45.7	46.1	46.5	46.9	47.4	47.8	48.2
21.0	48.6	49.1	49.5	49.9	50.4	50.8	51.2	51.7	52.1	52.5
22.0	53.0	53.4	53.9	54.3	54.8	55.2	55.7	56.1	56.6	57.1
23.0	57.5	58.0	58.4	58.9	59.4	59.9	60.3	60.8	61.3	61.8
24.0	62.2	62.7	63.2	63.7	64.2	64.7	65.2	65.7	66.2	66.6

CENTER HEIGHT IN FEET	12 FOOT TOP WIDTH — Tenths of a Foot									
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.5
1.0	0.5	0.6	0.7	0.8	0.8	0.9	1.0	1.0	1.1	1.2
2.0	1.3	1.4	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1
3.0	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.2
4.0	3.3	3.4	3.5	3.6	3.8	3.9	4.0	4.2	4.3	4.4
5.0	4.5	4.7	4.8	5.0	5.1	5.3	5.4	5.6	5.7	5.9
6.0	6.0	6.2	6.3	6.5	6.7	6.8	7.0	7.2	7.3	7.5
7.0	7.7	7.8	8.0	8.2	8.4	8.6	8.8	8.9	9.1	9.3
8.0	9.5	9.7	9.9	10.1	10.3	10.5	10.7	10.9	11.1	11.3
9.0	11.5	11.7	11.9	12.2	12.4	12.6	12.8	13.0	13.3	13.5
10.0	13.7	13.9	14.2	14.4	14.7	14.9	15.1	15.4	15.6	15.9
11.0	16.1	16.4	16.6	16.9	17.1	17.4	17.6	17.9	18.2	18.4
12.0	18.7	19.0	19.2	19.5	19.8	20.1	20.3	20.6	20.9	21.2
13.0	21.4	21.7	22.0	22.3	22.6	22.9	23.2	23.5	23.8	24.1
14.0	24.4	24.7	25.0	25.3	25.6	25.9	26.3	26.6	26.9	27.2
15.0	27.5	27.8	28.2	28.5	28.8	29.2	29.5	29.8	30.2	30.5
16.0	30.8	31.2	31.5	31.9	32.2	32.6	32.9	33.3	33.6	34.0
17.0	34.3	34.7	35.1	35.4	35.8	36.2	36.5	36.9	37.3	37.6
18.0	38.0	38.4	38.8	39.2	39.6	39.9	40.3	40.7	41.1	41.5
19.0	41.9	42.3	42.7	43.1	43.5	43.9	44.3	44.7	45.1	45.5
20.0	45.9	46.4	46.8	47.2	47.6	48.1	48.5	48.9	49.3	49.8
21.0	50.2	50.6	51.1	51.5	51.9	52.4	52.8	53.3	53.7	54.2
22.0	54.6	55.1	55.5	56.0	56.4	56.9	57.4	57.8	58.3	58.7
23.0	59.2	59.7	60.2	60.6	61.1	61.6	62.1	62.6	63.0	63.5
24.0	64.0	64.5	65.0	65.5	66.0	66.5	67.0	67.5	68.0	68.5

CENTER HEIGHT IN FEET	14 FOOT TOP WIDTH — Tenths of a Foot									
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.5	0.6
1.0	0.6	0.7	0.8	0.9	0.9	1.0	1.1	1.2	1.3	1.3
2.0	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3
3.0	2.4	2.5	2.6	2.7	2.9	3.0	3.1	3.2	3.3	3.4
4.0	3.6	3.7	3.8	4.0	4.1	4.2	4.4	4.5	4.6	4.8
5.0	4.9	5.1	5.2	5.4	5.5	5.7	5.8	6.0	6.1	6.3
6.0	6.4	6.6	6.8	7.0	7.1	7.3	7.5	7.7	7.8	8.0
7.0	8.2	8.4	8.6	8.7	8.9	9.1	9.3	9.5	9.7	9.9
8.0	10.1	10.3	10.5	10.7	10.9	11.1	11.3	11.5	11.8	12.0
9.0	12.2	12.4	12.6	12.9	13.1	13.3	13.5	13.8	14.0	14.2
10.0	14.4	14.7	14.9	15.2	15.4	15.7	15.9	16.2	16.4	16.7
11.0	16.9	17.2	17.4	17.7	18.0	18.2	18.5	18.8	19.0	19.3
12.0	19.6	19.8	20.1	20.4	20.7	21.0	21.3	21.5	21.8	22.1
13.0	22.4	22.7	23.0	23.3	23.6	23.9	24.2	24.5	24.8	25.1
14.0	25.4	25.8	26.1	26.4	26.7	27.0	27.3	27.7	28.0	28.3
15.0	28.6	29.0	29.3	29.6	30.0	30.3	30.6	31.0	31.3	31.7
16.0	32.0	32.4	32.7	33.1	33.4	33.8	34.1	34.5	34.9	35.2
17.0	35.6	36.0	36.3	36.7	37.1	37.5	37.8	38.2	38.6	39.0
18.0	39.3	39.7	40.1	40.5	40.9	41.3	41.7	42.1	42.5	42.9
19.0	43.3	43.7	44.1	44.5	44.9	45.4	45.8	46.2	46.6	47.0
20.0	47.4	47.8	48.3	48.7	49.1	49.6	50.0	50.4	50.9	51.3
21.0	51.7	52.2	52.6	53.1	53.4	54.0	54.4	54.9	55.3	55.8
22.0	56.2	56.7	57.2	57.6	58.1	58.6	59.0	59.5	60.0	60.4
23.0	60.9	61.4	61.9	62.4	62.9	63.4	63.8	64.3	64.8	65.3
24.0	65.8	66.3	66.8	67.3	67.8	68.3	68.8	69.3	69.8	70.3

CENTER HEIGHT IN FEET	16 FOOT TOP WIDTH — Tenths of a Foot									
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.5	0.6
1.0	0.7	0.8	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5
2.0	1.6	1.6	1.8	1.8	2.0	2.1	2.2	2.3	2.4	2.5
3.0	2.6	2.7	2.8	3.0	3.1	3.2	3.3	3.5	3.6	3.7
4.0	3.8	4.0	4.1	4.3	4.4	4.5	4.7	4.8	5.0	5.1
5.0	5.3	5.4	5.6	5.7	5.9	6.1	6.2	6.4	6.6	6.7
6.0	6.9	7.1	7.2	7.4	7.6	7.8	7.9	8.1	8.3	8.5
7.0	8.7	8.9	9.1	9.3	9.5	9.6	9.8	10.0	10.3	10.5
8.0	10.7	10.9	11.1	11.3	11.5	11.7	11.9	12.2	12.4	12.6
9.0	12.8	13.1	13.3	13.5	13.8	14.0	14.2	14.5	14.7	14.9
10.0	15.2	15.4	15.7	15.9	16.2	16.4	16.7	16.9	17.2	17.5
11.0	17.7	18.0	18.2	18.5	18.8	19.1	19.3	19.6	19.9	20.2
12.0	20.4	20.7	21.0	21.3	21.6	21.9	22.2	22.5	22.8	23.0
13.0	23.4	23.6	24.0	24.3	24.6	24.9	25.2	25.5	25.8	26.1
14.0	26.4	26.8	27.1	27.4	27.7	28.1	28.4	28.7	29.0	29.4
15.0	29.7	30.1	30.4	30.7	31.1	31.4	31.8	32.1	32.5	32.8
16.0	33.2	33.5	33.9	34.3	34.6	35.0	35.4	35.7	36.1	36.5
17.0	36.8	37.2	37.6	38.0	38.3	38.7	39.1	39.5	39.9	40.3
18.0	40.7	41.1	41.5	41.8	42.2	42.6	43.1	43.5	43.9	44.3
19.0	44.7	45.1	45.5	45.9	46.3	46.8	47.2	47.6	48.0	48.5
20.0	48.9	49.3	49.8	50.2	50.6	51.1	51.5	51.9	52.4	52.8
21.0	53.3	53.7	54.2	54.6	55.1	55.5	56.0	56.5	56.9	57.4
22.0	57.8	58.3	58.8	59.3	59.7	60.2	60.7	61.2	61.6	62.1
23.0	62.6	63.1	63.6	64.1	64.6	65.1	65.6			
24.0	67.6	68.1	68.6	69.1	69.6	70.1	70.6			

CENTER HEIGHT IN FEET	18 FOOT TOP WIDTH — Tenths of a Foot									
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.6	0.7
1.0	0.8	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6
2.0	1.7	1.8	1.9	2.0	2.1	2.2	2.4	2.5	2.6	2.7
3.0	2.8	3.0	3.1	3.2	3.3	3.5	3.6	3.7	3.9	4.0
4.0	4.2	4.3	4.4	4.6	4.7	4.9	5.0	5.2	5.3	5.5
5.0	5.6	5.8	6.0	6.1	6.3	6.5	6.6	6.8	7.0	7.2
6.0	7.3	7.5	7.7	7.9	8.1	8.2	8.4	8.6	8.8	9.0
7.0	9.2	9.4	9.6	9.8	10.0	10.2	10.4	10.6	10.8	11.0
8.0	11.3	11.5	11.7	11.9	12.1	12.4	12.6	12.8	13.0	13.3
9.0	13.5	13.7	14.0	14.2	14.4	14.7	14.9	15.2	15.4	15.7
10.0	15.9	16.2	16.4	16.7	17.0	17.2	17.5	17.7	18.0	18.3
11.0	18.5	18.8	19.1	19.4	19.6	19.9	20.2	20.5	20.8	21.0
12.0	21.3	21.6	21.9	22.2	22.5	22.8	23.1	23.4	23.7	24.0
13.0	24.3	24.6	24.9	25.2	25.6	25.9	26.2	26.5	26.8	27.2
14.0	27.5	27.8	28.1	28.5	28.8	29.1	29.5	29.8	30.2	30.5
15.0	30.8	31.2	31.5	31.9	32.2	32.6	32.9	33.3	33.6	34.0
16.0	34.4	34.7	35.1	35.5	35.8	36.2	36.6	37.0	37.3	37.7
17.0	38.1	38.5	38.9	39.2	39.6	40.0	40.4	40.8	41.2	41.6
18.0	42.0	42.4	42.8	43.2	43.6	44.0	44.4	44.8	45.3	45.7
19.0	46.1	46.5	46.9	47.4	47.8	48.2	48.6	49.1	49.5	49.9
20.0	50.4	50.8	51.2	51.7	52.1	52.6	53.0	53.5	53.9	54.4
21.0	54.8	55.3	55.8	56.2	56.7	57.1	57.6	58.1	58.5	59.1
22.0	59.5	60.0	60.4	60.9	61.4	61.9	62.4	62.8	63.3	63.8
23.0				65.8	66.3	66.8	67.3	67.8	68.3	68.8
24.0				70.9	71.4	71.9	72.4	73.0	73.5	74.0

CENTER HEIGHT IN FEET	20 FOOT TOP WIDTH — Tenths of a Foot									
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0	0.0	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.6	0.7
1.0	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7
2.0	1.8	2.0	2.1	2.2	2.3	2.4	2.6	2.7	2.8	2.9
3.0	3.1	3.2	3.3	3.4	3.6	3.7	3.9	4.0	4.2	4.3
4.0	4.4	4.6	4.7	4.9	5.0	5.2	5.4	5.5	5.7	5.8
5.0	6.0	6.2	6.4	6.5	6.7	6.9	7.0	7.2	7.4	7.6
6.0	7.8	8.0	8.2	8.3	8.5	8.7	8.9	9.1	9.3	9.5
7.0	9.7	9.9	10.1	10.3	10.6	10.8	11.0	11.2	11.4	11.6
8.0	11.8	12.1	12.3	12.5	12.8	13.0	13.2	13.4	13.7	13.9
9.0	14.2	14.4	14.6	14.9	15.1	15.4	15.6	15.9	16.2	16.4
10.0	16.7	16.9	17.2	17.4	17.7	18.0	18.3	18.5	18.8	19.1
11.0	19.4	19.6	19.9	20.2	20.5	20.8	21.0	21.3	21.6	21.9
12.0	22.2	22.5	22.8	23.1	23.4	23.7	24.0	24.3	24.6	25.0
13.0	25.3	25.6	25.9	26.2	26.6	26.9	27.2	27.5	27.9	28.2
14.0	28.5	28.8	29.2	29.5	29.9	30.2	30.6	30.9	31.2	31.6
15.0	31.9	32.3	32.6	33.0	33.4	33.7	34.1	34.4	34.8	35.2
16.0	35.6	35.9	36.3	36.7	37.0	37.4	37.8	38.2	38.6	39.0
17.0	39.4	39.7	40.1	40.5	40.9	41.3	41.7	42.1	42.5	42.9
18.0	43.3	43.7	44.2	44.6	45.0	45.4	45.8	46.2	46.6	47.1
19.0	47.5	47.9	48.4	48.8	49.2	49.6	50.1	50.5	51.0	51.4
20.0	51.8	52.3	52.7	53.2	53.6	54.1	54.6	55.0	55.5	55.9
21.0	56.4	56.8	57.3	57.8	58.3	58.7	59.2	59.7	60.2	60.6
22.0	61.1	61.6	62.1	62.6	63.0	63.5	64.0	64.5	65.0	65.5
23.0	66.0	66.5	67.0	67.5	68.0	68.5	69.0	69.6	70.1	70.6
24.0	71.1	71.6	72.2	72.7	73.2	73.7	74.3	74.8	75.3	75.8

Exhibit 11-6.1

11-56.1

REFERENCE

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

TSC - NE - ENG.

1114

SHEET 1 OF 5

EARTH FILL VOLUME TABLES

CUBIC YARDS OF EARTH PER LINEAR FOOT OF EMBANKMENT

SIDE SLOPES
3:1 AND 2:1
2½:1 AND 2½:1

CENTER HEIGHT H, IN FEET	14 FOOT TOP WIDTH (W) — Tenths of a Foot									
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
25.0	70.8	71.4	71.9	72.4	72.9	73.4	74.0	74.5	75.0	75.5
26.0	76.1	76.6	77.1	77.7	78.2	78.8	79.3	79.9	80.4	81.0
27.0	81.5	82.1	82.6	83.2	83.7	84.3	84.8	85.4	86.0	86.5
28.0	87.1	87.7	88.3	88.8	89.4	90.0	90.6	91.2	91.7	92.3
29.0	92.9	93.5	94.1	94.7	95.3	95.9	96.5	97.1	97.7	98.3
30.0	98.9	99.5	100.1	100.7	101.3	102.0	102.6	103.2	103.8	104.4
31.0	105.1	105.7	106.3	106.9	107.6	108.2	108.8	109.5	110.1	110.8
32.0	111.4	112.1	112.7	113.4	114.0	114.7	115.3	116.0	116.6	117.3
33.0	117.9	118.6	119.3	119.9	120.6	121.3	122.0	122.6	123.3	124.0
34.0	124.7	125.4	126.0	126.7	127.4	128.1	128.8	129.5	130.2	130.9
35.0	131.6	132.3	133.0	133.7	134.4	135.1	135.8	136.5	137.2	138.0
36.0	138.7	139.4	140.1	140.8	141.6	142.3	143.0	143.7	144.5	145.2
37.0	145.9	146.7	147.4	148.2	148.9	149.7	150.4	151.2	151.9	152.7
38.0	153.4	154.2	154.9	155.7	156.4	157.2	158.0	158.7	159.5	160.3
39.0	161.1	161.8	162.6	163.4	164.3	165.0	165.7	166.5	167.3	168.1
40.0	168.9	169.7	170.5	171.3	172.1	172.9	173.7	174.5	175.3	176.1
41.0	176.9	177.7	178.5	179.4	180.2	181.0	181.8	182.6	183.5	184.3
42.0	185.1	185.9	186.8	187.6	188.4	189.3	190.1	191.0	191.8	192.7
43.0	193.5	194.4	195.2	196.1	196.9	197.8	198.6	199.5	200.3	201.2
44.0	202.1	202.9	203.8	204.7	205.6	206.4	207.3	208.2	209.1	210.0
45.0	210.8	211.7	212.6	213.5	214.4	215.3	216.2	217.1	218.0	218.9
46.0	219.8	220.7	221.6	222.5	223.4	224.3	225.2	226.2	227.1	228.0
47.0	228.9	229.8	230.8	231.7	232.6	233.5	234.5	235.4	236.3	237.3
48.0	238.2	239.2	240.1	241.1	242.0	243.0	243.9	244.9	245.8	246.8
49.0	247.7	248.7	249.6	250.6	251.6	252.5	253.5	254.5	255.5	256.4
50.0	257.4	258.4	259.4	260.4	261.3	262.3	263.3	264.3	265.3	266.3
51.0	267.3	268.3	269.3	270.3	271.3	272.3	273.3	274.3	275.3	276.3
52.0	277.3	278.4	279.4	280.4	281.4	282.4	283.5	284.5	285.5	286.5
53.0	287.6	288.6	289.6	290.7	291.7	292.8	293.8	294.8	295.9	297.0
54.0	298.0	299.1	300.1	301.2	302.2	303.3	304.3	305.4	306.5	307.5
55.0	308.6	309.7	310.8	311.8	312.9	314.0	315.1	316.2	317.2	318.3
56.0	319.4	320.5	321.6	322.7	323.8	324.9	326.0	327.1	328.2	329.3
57.0	330.4	331.5	332.6	333.7	334.8	336.0	337.1	338.2	339.3	340.4
58.0	341.6	342.7	343.8	344.9	346.1	347.2	348.3	349.5	350.6	351.8
59.0	352.9	354.1	355.2	356.4	357.5	358.7	359.8	361.0	362.1	363.3
60.0	364.4	365.6	366.8	367.9	369.1	370.3	371.5	372.6	373.8	375.0
61.0	376.2	377.4	378.5	379.7	380.9	382.1	383.3	384.5	385.7	386.9
62.0	NOTE: This sheet may be used for any combination of side slopes equaling five (5) e.g. 2½ : 1 with 2½ : 1. Data below heaviest lines apply to embankments whose ratio of top widths to center height is too narrow as indicated by, $w = \frac{H-32}{2}$									
63.0										
64.0										

CENTER HEIGHT H, IN FEET	16 FOOT TOP WIDTH (W) — Tenths of a Foot									
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
25.0	72.7	73.2	73.7	74.3	74.8	75.3	75.9	76.4	76.9	77.5
26.0	78.0	78.5	79.1	79.6	80.2	80.7	81.3	81.8	82.4	82.9
27.0	83.5	84.1	84.6	85.2	85.8	86.3	86.9	87.5	88.0	88.6
28.0	89.2	89.8	90.3	90.9	91.5	92.1	92.7	93.3	93.9	94.5
29.0	95.1	95.7	96.3	96.9	97.5	98.1	98.7	99.3	99.9	100.5
30.0	101.1	101.7	102.3	103.0	103.6	104.2	104.8	105.5	106.1	106.7
31.0	107.4	108.0	108.6	109.3	109.9	110.5	111.2	111.8	112.5	113.1
32.0	113.8	114.4	115.1	115.7	116.4	117.1	117.7	118.4	119.1	119.7
33.0	120.4	121.1	121.7	122.4	123.1	123.8	124.4	125.1	125.8	126.5
34.0	127.2	127.9	128.6	129.3	130.0	130.7	131.4	132.1	132.8	133.5
35.0	134.2	134.9	135.6	136.3	137.0	137.7	138.4	139.2	139.9	140.6
36.0	141.3	142.1	142.8	143.5	144.3	145.0	145.7	146.5	147.2	147.9
37.0	148.7	149.4	150.2	150.9	151.7	152.4	153.2	153.9	154.7	155.5
38.0	156.2	157.0	157.8	158.5	159.3	160.1	160.8	161.6	162.4	163.2
39.0	163.9	164.7	165.5	166.3	167.1	167.9	168.7	169.5	170.3	171.1
40.0	171.9	172.7	173.5	174.3	175.1	175.9	176.7	177.5	178.3	179.1
41.0	179.9	180.8	181.6	182.4	183.2	184.1	184.9	185.7	186.6	187.4
42.0	188.2	189.1	189.9	190.7	191.6	192.4	193.3	194.1	195.0	195.8
43.0	196.7	197.5	198.4	199.3	200.1	201.0	201.9	202.7	203.6	204.5
44.0	205.3	206.2	207.1	208.0	208.8	209.7	210.6	211.5	212.4	213.3
45.0	214.2	215.1	216.0	216.9	217.8	218.7	219.6	220.5	221.4	222.3
46.0	223.2	224.1	225.0	225.9	226.8	227.8	228.7	229.6	230.5	231.5
47.0	232.4	233.3	234.3	235.2	236.1	237.1	238.0	238.9	239.9	240.8
48.0	241.8	242.7	243.7	244.6	245.6	246.5	247.5	248.5	249.4	250.4
49.0	251.4	252.3	253.3	254.3	255.2	256.2	257.2	258.2	259.1	260.1
50.0	261.1	262.1	263.1	264.1	265.1	266.1	267.1	268.1	269.1	270.1
51.0	271.1	272.1	273.1	274.1	275.1	276.1	277.1	278.1	279.1	280.2
52.0	281.2	282.2	283.2	284.3	285.3	286.3	287.4	288.4	289.4	290.5
53.0	291.5	292.5	293.6	294.6	295.7	296.7	297.8	298.8	299.9	300.9
54.0	302.0	303.1	304.1	305.2	306.3	307.3	308.4	309.5	310.5	311.6
55.0	312.7	313.8	314.8	315.9	317.0	318.1	319.2	320.3	321.4	322.5
56.0	323.6	324.7	325.8	326.9	328.0	329.1	330.2	331.3	332.4	333.5
57.0	334.6	335.7	336.8	338.0	339.1	340.2	341.3	342.5	343.6	344.7
58.0	345.9	347.0	348.1	349.3	350.4	351.5	352.7	353.8	355.0	356.1
59.0	357.3	358.4	359.6	360.7	361.9	363.1	364.2	365.4	366.6	367.7
60.0	368.9	370.1	371.2	372.4	373.6	374.8	375.9	377.1	378.3	379.5
61.0	380.7	381.9	383.1	384.3	385.5	386.7	387.9	389.1	390.3	391.5
62.0	392.7	393.9	395.1	396.3	397.5	398.7	399.9	401.2	402.4	403.6
63.0	404.8	406.1	407.3	408.5	409.8	411.0	412.2			
64.0	417.2	418.4	419.7	420.9	422.2	423.4	424.7			

CENTER HEIGHT H, IN FEET	18 FOOT TOP WIDTH (W) — Tenths of a Foot									
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
25.0	74.5	75.1	75.6	76.1	76.7	77.2	77.8	78.3	78.8	79.4
26.0	79.9	80.5	81.0	81.6	82.1	82.7	83.3	83.8	84.4	84.9
27.0	85.5	86.1	86.6	87.2	87.8	88.4	88.9	89.5	90.1	90.7
28.0	91.3	91.9	92.4	93.0	93.6	94.2	94.8	95.4	96.0	96.6
29.0	97.2	97.8	98.4	99.0	99.6	100.3	100.9	101.5	102.1	102.7
30.0	103.3	104.0	104.6	105.2	105.8	106.5	107.1	107.7	108.4	109.0
31.0	109.7	110.3	110.9	111.6	112.2	112.9	113.5	114.2	114.8	115.5
32.0	116.2	116.8	117.5	118.1	118.8	119.5	120.1	120.8	121.5	122.2
33.0	122.8	123.5	124.2	124.9	125.6	126.3	126.9	127.6	128.3	129.0
34.0	129.7	130.4	131.1	131.8	132.5	133.2	133.9	134.6	135.3	136.1
35.0	136.8	137.5	138.2	138.9	139.6	140.4	141.1	141.8	142.5	143.3
36.0	144.0	144.7	145.5	146.2	147.0	147.7	148.4	149.2	149.9	150.7
37.0	151.4	152.2	152.9	153.7	154.5	155.2	156.0	156.7	157.5	158.3
38.0	159.0	159.8	160.6	161.4	162.1	162.9	163.7	164.5	165.3	166.1
39.0	166.8	167.6	168.4	169.2	170.0	170.8	171.6	172.4	173.2	174.0
40.0	174.8	175.6	176.4	177.3	178.1	178.9	179.7	180.5	181.3	182.2
41.0	183.0	183.8	184.6	185.5	186.3	187.1	188.0	188.8	189.7	190.5
42.0	191.3	192.2	193.0	193.9	194.7	195.6	196.4	197.3	198.2	199.0
43.0	199.9	200.7	201.6	202.5	203.3	204.2	205.1	206.0	206.8	207.7
44.0	208.6	209.5	210.4	211.3	212.1	213.0	213.9	214.8	215.7	216.6
45.0	217.5	218.4	219.3	220.2	221.1	222.0	222.9	223.9	224.8	225.7
46.0	226.6	227.5	228.4	229.4	230.3	231.2	232.1	233.1	234.0	234.9
47.0	235.9	236.8	237.8	238.7	239.6	240.6	241.5	242.4	243.4	244.4
48.0	245.3	246.3	247.3	248.2	249.2	250.1	251.1	252.1	253.0	254.0
49.0	255.0	256.0	256.9	257.9	258.9	259.9	260.9	261.9	262.8	263.8
50.0	264.8	265.8	266.8	267.8	268.8	269.8	270.8	271.8	272.8	273.8
51.0	274.8	275.9	276.9	277.9	278.9	279.9	280.9	282.0	283.0	284.0
52.0	285.0	286.1	287.1	288.1	289.2	290.2	291.3	292.3	293.3	294.4
53.0	295.4	296.5	297.5	298.6	299.6	300.7	301.8	302.8	303.9	304.9
54.0	306.0	307.1	308.1	309.2	310.3	311.4	312.4	313.5	314.6	315.7
55.0	316.8	317.9	318.9	320.0	321.1	322.2	323.3	324.4	325.5	326.6
56.0	327.7	328.8	329.9	331.0	332.1	333.3	334.4	335.5	336.6	337.7
57.0	338.8	340.0	341.1	342.2	343.3	344.5	345.6	346.7	347.9	349.0
58.0	350.2	351.3	352.4	353.6	354.7	355.9	357.0	358.2	359.3	360.5
59.0	361.7	362.8	364.0	365.1	366.3	367.5	368.6	369.8	371.0	372.2
60.0	373.3	374.5	375.7	376.9	378.1	379.3	380.4	381.6	382.8	384.0
61.0	385.2	386.4	387.6	388.8	390.0	391.2	392.4	393.6	394.8	396.1
62.0	397.3	398.5	399.7	400.9	402.1	403.4	404.6	405.8	407.0	408.3
63.0				413.2	414.5	415.7	416.9	418.2	419.4	420.7
64.0				425.7	427.0	428.2	429.5	430.7	432.0	433.3

CENTER HEIGHT H, IN FEET	20 FOOT TOP WIDTH (W) — Tenths of a Foot										CENTER HEIGHT IN FEET
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	
25.0	76.4	76.9	77.5	78.0	78.6	79.1	79.6	80.2	80.7	81.3	25.0
26.0	81.9	82.4	83.0	83.5	84.1	84.7	85.2	85.8	86.4	86.9	26.0
27.0	87.5	88.1	88.7	89.2	89.8	90.4	91.0	91.6	92.2	92.7	27.0
28.0	93.3	93.9	94.5	95.1	95.7	96.3	96.9	97.5	98.1	98.7	28.0
29.0	99.4	100.0	100.6	101.2	101.8	102.4	103.1	103.7	104.3	104.9	29.0
30.0	105.6	106.2	106.8	107.5	108.1	108.7	109.4	110.0	110.7	111.3	30.0
31.0	111.9	112.6	113.2	113.9	114.6	115.2	115.9	116.5	117.2	117.9	31.0
32.0	118.5	119.2	119.9	120.5	121.2	121.9	122.6	123.2	123.9	124.6	32.0
33.0	125.3	126.0	126.7	127.3	128.0	128.7	129.4	130.1	130.8	131.5	33.0
34.0	132.2	132.9	133.6	134.3	135.1	135.8	136.5	137.2	137.9	138.6	34.0
35.0	139.4	140.1	140.8	141.5	142.3	143.0	143.7	144.5	145.2	145.9	35.0
36.0	146.7	147.4	148.2	148.9	149.6	150.4	151.1	151.9	152.7	153.4	36.0
37.0	154.2	154.9	155.7	156.5	157.2	158.0	158.8	159.5	160.3	161.1	37.0
38.0	161.9	162.6	163.4	164.2	165.0	165.8	166.6	167.3	168.1	168.9	38.0
39.0	169.7	170.5	171.3	172.1	172.9	173.7	174.5	175.3	176.2	177.0	39.0
40.0	177.8	178.6	179.4	180.2	181.1	181.9	182.7	183.5	184.4	185.2	40.0
41.0	186.0	186.9	187.7	188.5	189.4	190.2	191.1	191.9	192.7	193.6	41.0
42.0	194.4	195.3	196.2	197.0	197.9	198.7	199.6	200.5	201.3	202.2	42.0
43.0	203.1	203.9	204.8	205.7	206.6	207.4	208.3	209.2	210.1	211.0	43.0
44.0	211.9	212.7	213.6	214.5	215.4	216.3	217.2	218.1	219.0	219.9	44.0
45.0	220.8	221.7	222.7	223.6	224.5	225.4	226.3	227.2	228.2	229.1	45.0
46.0	230.0	230.9	231.9	232.8	233.7	234.7	235.6	236.5	237.5	238.4	46.0
47.0	239.4	240.3	241.3	242.2	243.1	244.1	245.1	246.0	247.0	247.9	47.0
48.0	248.9	249.9	250.8	251.8	252.8	253.7	254.7	255.7	256.7	257.6	48.0
49.0	258.6	259.6	260.6	261.6	262.6	263.5	264.5	265.5	266.6	267.5	49.0
50.0	268.5	269.5	270.5	271.5	272.5	273.5	274.6	275.6	276.6	277.6	50.0
51.0	278.6	279.6	280.7	281.7	282.7	283.7	284.8	285.8	286.8	287.9	51.0
52.0	288.9	289.9	291.0	292.0	293.1	294.1	295.1	296.2	297.2	298.3	52.0
53.0	299.4	300.4	301.5	302.5	303.6	304.7	305.7	306.8	307.9	308.9	53.0
54.0	310.0	311.1	312.2	313.2	314.3	315.4	316.5	317.6	318.7	319.7	54.0
55.0	320.8	321.9	323.0	324.1	325.2	326.3	327.4	328.5	329.6	330.7	55.0
56.0	331.9	333.0	334.1	335.2	336.3	337.4	338.6	339.7	340.8	341.9	56.0
57.0	343.1	344.2	345.3	346.5	347.6	348.7	349.9	351.0	352.2	353.3	57.0
58.0	354.4	355.6	356.7	357.9	359.1	360.2	361.4	362.5	363.7	364.9	58.0
59.0	366.0	367.2	368.4	369.5	370.7	371.9	373.1	374.2	375.4	376.6	59.0
60.0	377.8	379.0	380.2	381.3	382.5	383.7	384.9	386.1	387.3	388.5	60.0
61.0	389.7	390.9	392.1	393.3	394.6	395.8	397.0	398.2	399.4	400.6	61.0
62.0	401.9	403.1	404.3	405.5	406.8	408.0	409.2	410.5	411.7	412.9	62.0
63.0	414.2	415.4	416.7	417.9	419.1	420.4	421.6	422.9	424.2	425.4	63.0
64.0	426.7	427.9	429.2	430.5	431.7	433.0	434.3	435.5	436.8	438.1	64.0

Exhibit 11-6.1

11-56.2

REFERENCE

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

TSC - NE - ENG.
1114
SHEET 2 OF 5

EARTH FILL VOLUME TABLES

CUBIC YARDS OF EARTH PER LINEAR FOOT OF EMBANKMENT

SIDE SLOPES 3:1 AND 3:1

CENTER HEIGHT IN FEET	6 FOOT TOP WIDTH (Tenths of a Foot)										8 FOOT TOP WIDTH (Tenths of a Foot)										10 FOOT TOP WIDTH (Tenths of a Foot)										12 FOOT TOP WIDTH (Tenths of a Foot)										CENTER HEIGHT IN FEET
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	
0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.0	0.0	0.1	0.1	0.2	0.3	0.3	0.4	0.4	0.5	0.0
1.0	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.8	0.8	0.4	0.5	0.5	0.6	0.6	0.7	0.8	0.8	0.9	1.0	0.5	0.5	0.6	0.7	0.7	0.8	0.8	1.0	1.0	1.1	0.6	0.6	0.7	0.8	0.8	0.9	1.0	1.1	1.2	1.2	1.0
2.0	0.9	1.0	1.0	1.1	1.2	1.2	1.3	1.4	1.5	1.6	1.0	1.1	1.2	1.3	1.3	1.4	1.5	1.6	1.7	1.8	1.2	1.3	1.4	1.4	1.5	1.6	1.7	1.8	1.9	2.0	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.0
3.0	1.7	1.8	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.6	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.1	2.2	2.3	2.4	2.5	2.7	2.8	2.9	3.0	3.1	2.3	2.4	2.6	2.7	2.8	2.9	3.0	3.2	3.3	3.4	3.0
4.0	2.7	2.8	2.9	3.0	3.1	3.2	3.4	3.5	3.6	3.8	3.0	3.1	3.2	3.3	3.5	3.6	3.7	3.8	4.0	4.1	3.3	3.4	3.5	3.6	3.8	3.9	4.1	4.2	4.3	4.5	3.6	3.7	3.8	4.0	4.1	4.2	4.4	4.5	4.7	4.8	4.0
5.0	3.9	4.0	4.2	4.3	4.4	4.6	4.7	4.9	5.0	5.2	4.3	4.4	4.5	4.7	4.8	5.0	5.1	5.3	5.5	5.6	4.6	4.8	4.9	5.1	5.2	5.4	5.6	5.7	5.9	6.1	5.0	5.2	5.3	5.5	5.6	5.8	6.0	6.1	6.3	6.5	5.0
6.0	5.3	5.5	5.6	5.8	6.0	6.1	6.3	6.5	6.6	6.8	5.8	5.9	6.1	6.3	6.4	6.6	6.8	7.0	7.2	7.3	6.2	6.4	6.6	6.7	6.9	7.1	7.3	7.5	7.7	7.8	6.7	6.8	7.0	7.2	7.4	7.6	7.8	8.0	8.2	8.4	6.0
7.0	7.0	7.2	7.4	7.5	7.7	7.9	8.1	8.3	8.5	8.7	7.5	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	8.0	8.2	8.4	8.6	8.8	9.0	9.2	9.4	9.6	9.9	8.6	8.8	9.0	9.2	9.4	9.6	9.8	10.0	10.2	10.4	7.0
8.0	8.9	9.1	9.3	9.5	9.7	9.9	10.1	10.3	10.6	10.8	9.5	9.7	9.9	10.1	10.3	10.5	10.8	11.0	11.2	11.4	10.1	10.3	10.5	10.7	11.0	11.2	11.4	11.6	11.9	12.1	10.7	10.9	11.1	11.3	11.6	11.8	12.0	12.3	12.5	12.8	8.0
9.0	11.0	11.2	11.4	11.7	11.9	12.1	12.4	12.6	12.8	13.1	11.7	11.9	12.1	12.4	12.6	12.8	13.1	13.3	13.6	13.8	12.3	12.6	12.8	13.1	13.3	13.5	13.8	14.0	14.3	14.6	13.0	13.2	13.5	13.7	14.0	14.3	14.5	14.8	15.0	15.3	9.0
10.0	13.3	13.6	13.8	14.1	14.3	14.6	14.8	15.1	15.4	15.6	14.1	14.3	14.6	14.8	15.1	15.4	15.6	15.9	16.2	16.4	14.8	15.1	15.3	15.6	15.9	16.1	16.4	16.7	17.0	17.2	15.6	15.8	16.1	16.4	16.6	16.9	17.2	17.5	17.8	18.0	10.0
11.0	15.9	16.1	16.4	16.7	17.0	17.2	17.5	17.8	18.1	18.4	16.7	17.0	17.3	17.5	17.8	18.1	18.4	18.7	19.0	19.3	17.5	17.8	18.1	18.4	18.7	19.0	19.2	19.5	19.8	20.1	18.3	18.6	18.9	19.2	19.5	19.8	20.1	20.4	20.7	21.0	11.0
12.0	18.7	19.0	19.2	19.5	19.8	20.1	20.4	20.7	21.0	21.3	19.5	19.8	20.2	20.5	20.8	21.0	21.4	21.7	22.0	22.3	20.4	20.7	21.1	21.4	21.7	22.0	22.3	22.6	22.9	23.3	21.3	21.6	22.0	22.3	22.6	22.9	23.2	23.6	23.9	24.2	12.0
13.0	21.6	22.0	22.3	22.6	22.9	23.2	23.6	23.9	24.2	24.6	22.6	23.0	23.3	23.6	23.9	24.2	24.6	24.9	25.2	25.6	23.6	23.9	24.2	24.6	24.9	25.2	25.6	25.9	26.3	26.6	24.5	24.9	25.2	25.6	25.9	26.2	26.6	26.9	27.3	27.6	13.0
14.0	24.9	25.2	25.6	25.9	26.2	26.6	26.9	27.3	27.6	28.0	25.9	26.3	26.6	27.0	27.3	27.7	28.0	28.4	28.7	29.1	27.0	27.3	27.7	28.0	28.4	28.7	29.1	29.4	29.8	30.2	28.0	28.4	28.7	29.1	29.4	29.8	30.2	30.5	30.9	31.3	14.0
15.0	28.3	28.7	29.0	29.4	29.8	30.1	30.5	30.9	31.2	31.6	29.4	29.8	30.2	30.5	30.9	31.3	31.7	32.0	32.4	32.8	30.5	30.9	31.3	31.7	32.0	32.4	32.8	33.2	33.6	34.0	31.6	32.0	32.4	32.8	33.2	33.6	34.0	34.4	34.8	35.2	15.0
16.0	32.0	32.4	32.8	33.1	33.5	33.9	34.3	34.7	35.1	35.5	33.2	33.6	34.0	34.3	34.7	35.1	35.5	35.9	36.3	36.7	34.4	34.8	35.2	35.6	36.0	36.4	36.8	37.2	37.5	38.0	35.6	36.0	36.4	36.8	37.2	37.6	38.0	38.4	38.8	39.2	16.0
17.0	35.8	36.3	36.7	37.1	37.5	37.9	38.3	38.7	39.2	39.6	37.1	37.6	38.0	38.4	38.8	39.2	39.6	40.1	40.5	40.9	38.4	38.8	39.2	39.7	40.1	40.5	40.9	41.4	41.8	42.2	39.6	40.1	40.5	40.9	41.4	41.8	42.2	42.7	43.1	43.5	17.0
18.0	40.0	40.4	40.8	41.3	41.7	42.1	42.6	43.0	43.4	43.9	41.3	41.8	42.2	42.6	43.1	43.5	44.0	44.4	44.8	45.3	42.7	43.1	43.5	44.0	44.4	44.9	45.3	45.8	46.2	46.7	44.0	44.4	44.9	45.3	45.8	46.2	46.7	47.2	47.6	48.1	18.0
19.0	44.3	44.8	45.2	45.7	46.1	46.6	47.0	47.5	48.0	48.4	45.7	46.2	46.6	47.1	47.6	48.0	48.5	48.9	49.4	49.9	47.1	47.6	48.0	48.5	49.0	49.5	49.9	50.4	50.9	51.4	48.6	49.0	49.4	50.0	50.4	50.9	51.4	51.9	52.4	52.8	19.0
20.0	48.9	49.4	49.8	50.3	50.8	51.2	51.7	52.2	52.7	53.2	50.4	50.8	51.3	51.8	52.3	52.8	53.2	53.7	54.2	54.7	51.9	52.3	52.8	53.3	53.8	54.3	54.8	55.3	55.8	56.3	53.3	53.8	54.3	54.8	55.3	55.8	56.3	56.8	57.3	57.8	20.0
21.0	53.7	54.2	54.6	55.1	55.6	56.1	56.6	57.1	57.6	58.2	55.2	55.7	56.2	56.7	57.2	57.7	58.2	58.8	59.3	59.8	56.8	57.3	57.8	58.3	58.8	59.3	59.8	60.4	60.9	61.4	58.3	58.8	59.4	59.9	60.4	60.9	61.4	62.0	62.5	63.0	21.0
22.0	58.7	59.2	59.7	60.2	60.7	61.2	61.8	62.3	62.8	63.4	60.3	60.8	61.3	61.9	62.4	62.9	63.4	64.0	64.5	65.0	61.9	62.4	63.0	63.5	64.0	64.6	65.1	65.7	66.2	66.7	63.6	64.1	64.6	65.2	65.7	66.2	66.8	67.3	67.8	68.4	22.0
23.0	63.9	64.4	65.0	65.5	66.0	66.6	67.1	67.7	68.2	68.8	65.6	66.1	66.7	67.2	67.8	68.3	68.9	69.4	70.0	70.6	67.3	67.8	68.4	68.9	69.5	70.1	70.6	71.2	71.7	72.3	69.0	69.6	70.1	70.7	71.2	71.7	72.3	72.9	73.5	74.1	23.0
24.0	69.3	69.9	70.4	71.0	71.6	72.1	72.7	73.3	73.8	74.4	71.1	71.7	72.2	72.8	73.4	73.9	74.5	75.1	75.7	76.3	72.9	73.5	74.0	74.6	75.2	75.8	76.3	76.9	77.5	78.1	74.7	75.2	75.8	76.4	77.0	77.6	78.2	78.8	79.4	80.0	24.0

CENTER HEIGHT IN FEET	14 FOOT TOP WIDTH (Tenths of a Foot)										16 FOOT TOP WIDTH (Tenths of a Foot)										18 FOOT TOP WIDTH (Tenths of a Foot)										20 FOOT TOP WIDTH (Tenths of a Foot)										CENTER HEIGHT IN FEET
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	
0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.0	0.1	0.1	0.2	0.3	0.3	0.4	0.5	0.5	0.6	0.0	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.6	0.7	0.0	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.0
1.0	0.6	0.7	0.8	0.9	0.9	1.0	1.1	1.2	1.3	1.4	0.7	0.8	0.9	1.0	1.1	1.1	1.2	1.3	1.4	1.5	0.8	0.9	1.0	1.1	1.2	1.2	1.4	1.5	1.6	1.7	0.8	0.9	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.0
2.0	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	1.6	1.7	1.8	2.0	2.1	2.2	2.3	2.4	2.5	2.7	1.8	1.9	2.0	2.1	2.2	2.4	2.5	2.6	2.7	2.9	1.9	2.1	2.2	2.3	2.4	2.5	2.7	2.8	2.9	3.1	2.0
3.0	2.6	2.7	2.8	2.9	3.0	3.2	3.3	3.4	3.6	3.7	2.8	2.9	3.0	3.2	3.3	3.4	3.6	3.7	3.9	4.0	3.0	3.1	3.3	3.4	3.6	3.7	3.8	4.0	4.1	4.3	3.2	3.4	3.5	3.6	3.8	4.0	4.1	4.3	4.4	4.6	3.0
4.0	3.9	4.0	4.1	4.3	4.4	4.6	4.7	4.9	5.1	5.2	4.1	4.3	4.4	4.6	4.8	4.9	5.1	5.2	5.4	5.6	4.4	4.6	4.8	4.9	5.1	5.2	5.4	5.6	5.8	5.9	4.7	4.9	5.1	5.2	5.4	5.6	5.8	5.9	6.1	6.3	4.0
5.0	5.4	5.5	5.7	5.9	6.0	6.2	6.4	6.6	6.7	6.9	5.7	5.9	6.1	6.3	6.4	6.6	6.8	7.0	7.2	7.4	6.1	6.3	6.5	6.7	6.8	7.0	7.2	7.4	7.6	7.8	6.5	6.7	6.9	7.1	7.2	7.4	7.6	7.8	8.0	8.2	5.0
6.0	7.1	7.3	7.5	7.7	7.9	8.1	8.3	8.5	8.7	8.9	7.6	7.8	7.9	8.1	8.3	8.5	8.8	9.0	9.2	9.4	8.0	8.2	8.4	8.6	8.8	9.0	9.2	9.5	9.7	9.9	8.4	8.7	8.9	9.1	9.3	9.5	9.7	9.9	10.2	10.4	6.0
7.0	9.1	9.3	9.5	9.7	9.9	10.1	10.4	10.6	10.8	11.0	9.6	9.8	10.0	10.2	10.5	10.7	10.9	11.2	11.4	11.6	10.1	10.3	10.6	10.8	11.0	11.3	11.5	11.7	12.0	12.2	10.6	10.9	11.1	11.3	11.6	11.8	12.0	12.3	12.5	12.8	7.0
8.0	11.3	11.5	11.7	12.0	12.2	12.4	12.7	12.9	13.2	13.4	11.9	12.1	12.3	12.6	12.8	13.1	13.3	13.6	13.8	14.1	12.4	12.7	12.9	13.2	13.4	13.7	14.0	14.2	14.5	14.7	13.0	13.3	13.5	13.8	14.1	14.3	14.6	14.8	15.1	15.4	8.0
9.0	13.7	13.9	14.2	14.4	14.7	15.0	15.2	15.5	15.8	16.0	14.3	14.6	14.9	15.1	15.4	15.7	15.9	16.2	16.5	16.8	15.0	15.3	15.5	15.8	16.1	16.4	16.6	16.9	17.2	17.5	15.7	15.9	16.2	16.5	16.8	17.1	17.3	17.6	17.9	18.2	9.0
10.0	16.3	16.6	16.9	17.1	17.4	17.7	18.0	18.3	18.6	18.8	17.0	17.3	17.6	17.9	18.2	18.5	18.8	19.1	19.4	19.7	17.8	18.1	18.4	18.7	18.9	19.2	19.6	19.9	20.2	20.5	18.5	18.8	19.1	19.4	19.7	20.0	20.3	20.7	21.0	21.3	10.0
11.0	19.2	19.4	19.8	20.0	20.4	20.7	21.0	21.3	21.6	21.9	20.0	20.3	20.6	20.9	21.2	21.5	21.8	22.1	22.5	22.8	20.8	21.1	21.4	21.7	22.0	22.4	22.7	23.0	23.3	23.7	21.6	21.9	22.2	22.6	22.9	23.2	23.5	23.9	24.2	24.5	11.0
12.0	22.2	22.5	22.9	23.2	23.5	23.8	24.2	24.5	24.8	25.2	23.1	23.4	23.8	24.1	24.4	24.8	25.1	25.4	25.8	26.1	24.0	24.3	24.7	25.0	25.4	25.7	26.0	26.4	26.7	27.1	24.9	25.2	25.6	25.9	26.3	26.6	27.0	27.3	27.7	28.0	12.0
13.0	25.5	25.9	26.2	26.6	26.9	27.2	27.6	28.0	28.3	28.7	26.5	26.8	27.2	27.5	27.9	28.2	28.6	29.0	29.3	29.7	27.4	27.8	28.2	28.5	28.9	29.2	29.6	30.0	30.4	30.7	28.4	28.8	29.1	29.5	29.9	30.2	30.6	31.0	31.4	31.8	13.0
14.0	29.0	29.4	29.8	30.1	30.5	30.9	31.3	31.6	32.0	32.4	30.1	30.4	30.8	31.2	31.6	32.0	32.3	32.7	33.1	33.5	31.1	31.5	31.8	32.3	32.6	33.0	33.4	33.8	34.2	34.6	32.1	32.5	32.9	33.3	33.7	34.1	34.5	34.9	35.3	35.7	14.0
15.0	32.8	33.2	33.6	33.9	34.3	34.7	35.1	35.5	35.9	36.3	33.9	34.3	34.7	35.1	35.4	35.9	36.3	36.7	37.1	37.5	35.0	35.4	35.8	36.2	36.6	37.0	37.4	37.8	38.2	38.7	36.1	36.5	36.9	37.3	37.8	38.2	38.6	39.0	39.4	40.0	15.0
16.0	36.7	37.2	37.6	38.0	38.4	38.8	39.2	39.6	40.0	40.5	37.9	38.3	38.8	39.2	39.6	40.0	40.5	40.9	41.3	41.8	39.1	39.5	40.0	40.4	40.8	41.2	41.7	42.1	42.5	43.0	40.5	40.7	41.2	41.6	42.0	42.5	42.9	43.4	43.8	44.3	16.0
17.0	40.9	41.4	41.8	42.2	42.7	43.1	43.5	44.0	44.4	44.9	42.2	42.6	43.1	43.5	44.0	44.4	44.8	45.3	45.8	46.2	43.4	43.9	44.3	44.8	45.2	45.7	46.2	46.6	47.1	47.5	44.7	45.2	45.6	46.1	46.5	47.0	47.5	47.9	48.4	48.9	17.0
18.0	45.3	45.7	46.2	46.7	47.2	47.6	48.1	48.6	49.0	49.5	46.7	47.1	47.6	48.1	48.5	49.0	49.5	49.9	50.4	50.9	48.0	48.5	48.9	49.4	49.9	50.4	50.8	51.3	51.8	52.3	49.3	49.8	50.3	50.8	51.2	51.7	52.2	52.7	53.2	53.7	18.0
19.0	50.0	50.4	50.9	51.4	51.9	52.4	52.8	53.3	53.8	54.3	51.4	51.8	52.3	52.8	53.3	53.8	54.3	54.8	55.3	55.8	52.8	53.3	53.7	54.3	54.7	55.2	55.8	56.2	56.8	57.3	54.2	54.7	55.1	55.7	56.2	56.7	57.2	57.7	58.2	58.7	19.0
20.0	54.8	55.3	55.8	56.3	56.8	57.3	57.8	58.3	58.9	59.4	56.3	56.8	57.3	57.8	58.3	58.8	59.4	59.9	60.4	60.9	57.8	58.3	58.8	59.3	59.8	60.4	60.9	61.4	61.9	62.5	59.3	59.8	60.3	60.8	61.3	61.9	62.4	62.9	63.5	64.0	20.0
21.0	59.9	60.4	60.9	61.5	62.0	62.5	63.0	63.6	64.1	64.6	61.4	62.0	62.5	63.0	63.6	64.1	64.6	65.2	65.7	66.3	63.0	63.5	64.1	64.6	65.1	65.7	66.2	66.8	67.3	67.9	64.6	65.1	65.6	66.2	66.7	67.3	67.8	68.4	69.0	69.5	21.0
22.0	65.2	65.7	66.3	66.8	67.4	67.9	68.5	69.0	69.6	70.1	66.8	67.4	67.9	68.5	69.0	69.6	70.1	70.7	71.3	71.8	68.4	69.0	69.6	70.1	70.7	71.2	71.8	72.4	73.0	73.5	70.1	70.6	71.2	71.8	72.3	72.9	73.5	74.1	74.6	75.2	22.0
23.0	70.7	71.3	71.8	72.4	73.0	73.5	74.1	74.7	75.3	75.9	72.4	73.0	73.5	74.1	74.7	75.3	75.9							75.8	76.4	77.0	77.6	78.2	78.8	79.4	75.8	76.4	77.0	77.6	78.2	78.8	79.4	80.0	80.6	81.2	23.0
24.0	76.4	77.0	77.6	78.2	78.8	79.4	80.0	80.6	81.2	81.8	78.2	78.8	79.4	80.0	80.6	81.2	81.8							81.8	82.4	83.0	83.6	84.3	84.9	85.5	81.8	82.4	83.0	83.6	84.2	84.8	85.5	86.1	86.7	87.3	24.0

Exhibit 11-6.1

11-56.3

REFERENCE

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

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SHEET 3 OF 5

1114

USDA-SCS-HYATTSVILLE, MD. 1970

EARTH FILL VOLUME TABLES

CUBIC YARDS OF EARTH PER LINEAR FOOT OF EMBANKMENT

SIDE SLOPES 3:1 AND 3:1

CENTER HEIGHT H, IN FEET	14 FOOT TOP WIDTH (W) — Tenths of a Foot										16 FOOT TOP WIDTH (W) — Tenths of a Foot										18 FOOT TOP WIDTH (W) — Tenths of a Foot										20 FOOT TOP WIDTH (W) — Tenths of a Foot										CENTER HEIGHT IN FEET
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	
25.0	82.4	83.0	83.6	84.3	84.8	85.5	86.1	86.7	87.3	88.0	84.3	84.9	85.5	86.1	86.7	87.4	88.0	88.6	89.3	89.9	86.1	86.7	87.4	88.0	88.6	89.3	89.8	90.5	91.2	91.8	88.0	88.6	89.2	89.9	90.5	91.1	91.8	92.4	93.1	93.7	25.0
26.0	88.6	89.2	89.8	90.5	91.1	91.8	92.4	93.0	93.7	94.3	90.5	91.2	91.8	92.4	93.1	93.7	94.4	95.0	95.7	96.3	92.4	93.1	93.7	94.4	95.0	95.7	96.4	97.0	97.7	98.3	94.4	95.0	95.7	96.4	97.0	97.7	98.4	99.0	99.7	100.3	26.0
27.0	95.0	95.7	96.3	97.0	97.6	98.3	98.9	99.6	100.3	101.0	97.0	97.7	98.3	99.0	99.7	100.3	101.0	101.7	102.3	103.0	99.0	99.7	100.3	101.0	101.7	102.4	103.0	103.7	104.4	105.1	101.0	101.7	102.3	103.0	103.7	104.4	105.1	105.8	106.5	107.2	27.0
28.0	101.6	102.3	103.0	103.7	104.4	105.0	105.7	106.4	107.1	107.8	103.7	104.4	105.1	105.8	106.5	107.1	107.8	108.5	109.2	109.9	105.8	106.5	107.2	107.9	108.6	109.3	110.0	110.7	111.4	112.1	107.8	108.5	109.3	110.0	110.7	111.4	112.1	112.8	113.5	114.2	28.0
29.0	108.5	109.2	109.9	110.6	111.3	112.0	112.7	113.4	114.1	114.8	110.6	111.3	112.0	112.8	113.5	114.2	114.9	115.6	116.3	117.0	112.8	113.5	114.2	114.9	115.6	116.4	117.1	117.8	118.5	119.3	114.9	115.7	116.4	117.1	117.8	118.6	119.3	120.0	120.7	121.5	29.0
30.0	115.6	115.6	117.0	117.7	118.5	119.2	120.0	120.7	121.4	122.1	117.7	117.8	119.2	120.0	120.7	121.4	122.2	122.9	123.7	124.4	120.0	120.1	121.5	122.2	123.0	123.7	124.4	125.2	125.9	126.7	122.2	122.3	123.7	124.5	125.2	126.0	126.7	127.5	128.2	129.0	30.0
31.0	122.8	123.6	124.3	125.1	125.8	126.6	127.3	128.1	128.8	129.6	125.1	125.9	126.7	127.4	128.2	128.9	129.6	130.4	131.2	132.0	127.4	128.2	129.0	129.7	130.5	131.3	132.0	132.8	133.6	134.3	129.7	130.5	131.3	132.0	132.8	133.6	134.4	135.1	135.9	136.7	31.0
32.0	130.4	131.1	131.9	132.7	133.4	134.2	135.0	135.8	136.5	137.3	132.7	133.5	134.3	135.1	135.8	136.6	137.4	138.2	139.0	139.8	135.1	135.9	136.7	137.5	138.2	139.0	139.8	140.6	141.4	142.2	137.5	138.3	139.1	139.8	140.6	141.4	142.2	143.0	143.8	144.6	32.0
33.0	138.1	138.9	139.7	140.5	141.3	142.1	142.9	143.7	144.5	145.3	140.6	141.4	142.1	142.9	143.8	144.6	145.4	146.2	147.0	147.8	143.0	143.8	144.6	145.4	146.2	147.0	147.8	148.7	149.5	150.3	145.4	146.3	147.1	147.9	148.7	149.5	150.3	151.2	152.0	152.8	33.0
34.0	146.1	146.9	147.7	148.5	149.3	150.1	151.0	151.8	152.6	153.4	148.6	149.4	150.2	151.1	151.9	152.7	153.5	154.4	155.2	156.0	151.1	151.9	152.8	153.6	154.4	155.3	156.1	156.9	157.8	158.6	153.6	154.5	155.3	156.1	157.0	157.8	158.6	159.5	160.3	161.2	34.0
35.0	154.3	155.1	155.9	156.8	157.6	158.4	159.3	160.1	161.0	161.8	156.9	157.7	158.5	159.4	160.2	161.1	161.9	162.8	163.6	164.5	159.4	160.3	161.1	162.0	162.8	163.7	164.6	165.4	166.3	167.1	162.0	162.9	163.8	164.6	165.5	166.3	167.2	168.1	168.9	169.8	35.0
36.0	162.7	163.5	164.4	165.2	166.1	167.0	167.8	168.7	169.5	170.4	165.3	166.2	167.1	167.9	168.8	169.2	170.5	171.4	172.3	173.2	168.0	168.9	169.7	170.6	171.5	172.4	173.2	174.1	175.0	175.9	170.7	171.5	172.4	173.3	174.2	175.1	176.0	176.8	177.7	178.6	36.0
37.0	171.3	172.2	173.0	173.9	174.8	175.7	176.6	177.5	178.4	179.3	174.0	174.9	175.8	176.7	177.6	178.5	179.4	180.3	181.2	182.1	176.8	177.7	178.6	179.5	180.4	181.3	182.2	183.1	184.0	184.9	179.5	180.4	181.3	182.2	183.1	184.0	184.9	185.8	186.8	187.7	37.0
38.0	180.2	181.1	181.9	182.8	183.8	184.7	185.6	186.5	187.4	188.3	183.0	183.9	184.8	185.7	186.6	187.5	186.4	189.3	190.3	191.2	185.8	186.7	187.6	188.5	189.4	190.4	191.3	192.2	193.1	194.1	188.6	189.5	190.4	191.4	192.3	193.2	194.1	195.1	196.0	197.0	38.0
39.0	189.2	190.1	191.1	192.0	192.9	193.8	194.8	195.7	196.6	197.7	192.1	193.0	194.0	194.9	195.8	196.8	197.7	198.7	199.6	200.5	195.0	195.9	196.9	197.8	198.8	199.7	200.6	201.6	202.5	203.5	197.9	198.8	199.8	200.7	201.7	202.6	203.6	204.5	205.5	206.5	39.0
40.0	198.5	199.5	200.4	201.3	202.3	203.3	204.2	205.2	206.1	207.1	201.5	202.4	203.4	204.3	205.3	206.3	207.2	208.2	209.1	210.1	204.4	205.4	206.4	207.3	208.3	209.3	210.2	211.2	212.2	213.1	207.4	208.4	209.3	210.3	211.3	212.3	213.2	214.2	215.2	216.2	40.0
41.0	208.0	209.0	210.0	210.9	211.9	212.9	213.9	214.8	215.8	216.8	211.1	212.1	213.0	214.0	215.0	216.0	216.9	217.9	218.9	219.9	214.1	215.1	216.1	217.1	218.0	219.0	220.0	221.0	222.0	223.0	217.2	218.1	219.1	220.1	221.1	222.1	223.1	224.1	225.1	226.1	41.0
42.0	217.8	218.8	219.7	220.8	221.7	222.7	223.7	224.7	225.7	226.7	220.9	221.9	222.9	223.9	224.9	225.9	226.9	227.9	228.9	229.9	224.0	225.0	226.0	227.0	228.0	229.0	230.0	231.1	232.1	233.1	227.1	228.1	229.1	230.1	231.2	232.2	233.2	234.2	235.2	236.3	42.0
43.0	227.7	228.8	229.8	230.8	231.9	232.8	233.8	234.8	235.9	236.9	230.9	231.9	233.0	234.0	235.0	236.0	237.0	238.1	239.1	240.1	234.1	235.1	236.2	237.2	238.2	239.3	240.3	241.3	242.4	243.4	237.3	238.3	239.4	240.4	241.4	242.5	243.5	244.6	245.6	246.6	43.0
44.0	237.9	238.9	240.0	241.0	242.1	243.1	244.2	245.2	246.2	247.3	241.2	242.2	243.3	244.3	245.4	246.4	247.5	248.5	249.5	250.6	244.4	245.5	246.5	247.6	248.6	249.7	250.8	251.8	252.9	253.9	247.7	248.8	249.8	250.9	251.9	253.0	254.1	255.1	256.2	257.3	44.0
45.0	248.3	249.4	250.4	251.5	252.6	253.6	254.7	255.8	256.8	257.9	251.7	252.7	253.8	254.9	255.9	257.0	258.1	259.1	260.2	261.3	255.0	256.1	257.1	258.2	259.3	260.4	261.4	262.5	263.6	264.7	258.3	259.4	260.5	261.6	262.6	263.7	264.8	265.9	267.0	268.1	45.0
46.0	259.0	260.0	261.1	262.2	263.3	264.4	265.4	266.5	267.6	268.7	262.4	263.5	264.5	265.6	266.7	267.8	268.9	270.0	271.1	272.2	265.0	266.9	268.0	269.1	270.2	271.3	272.4	273.5	274.6	275.7	269.2	270.3	271.4	272.5	273.6	274.7	275.8	276.9	278.0	279.1	46.0
47.0	269.8	270.9	272.0	273.1	274.2	275.3	276.4	277.5	278.7	279.8	273.3	274.4	275.5	276.6	277.7	278.8	279.9	281.1	282.2	283.3	276.9	277.9	279.0	280.1	281.2	282.4	283.5	284.6	285.7	286.9	280.3	281.4	282.5	283.6	284.7	285.9	287.0	288.1	289.3	290.4	47.0
48.0	280.9	282.0	283.1	284.2	285.4	286.5	287.6	288.8	289.9	291.0	284.4	285.6	286.7	287.8	289.0	290.1	291.2	292.4	293.5	294.7	288.0	289.1	290.3	291.4	292.6	293.7	294.8	296.0	297.1	298.1	291.6	292.7	293.8	295.0	296.1	297.3	298.4	299.6	300.7	301.9	48.0
49.0	292.2	293.3	294.5	295.6	296.8	297.9	299.1	300.2	301.4	302.5	295.8	297.0	298.1	299.3	300.4	301.6	302.7	303.9	305.1	306.2	299.4	300.6	301.8	302.9	304.1	305.3	306.4	307.6	308.8	309.9	303.1	304.2	305.4	306.6	307.7	308.9	310.1	311.3	312.4	313.6	49.0
50.0	303.7	304.9	306.0	307.2	308.4	309.5	310.7	311.9	313.1	314.3	307.4	308.6	309.7	310.9	312.1	313.3	314.5	315.7	316.8	318.0	311.1	312.3	313.5	314.7	315.8	317.0	318.2	319.4	320.6	321.8	314.8	316.0	317.2	318.4	319.6	320.8	322.0	323.2	324.4	325.6	50.0
51.0	315.4	316.6	317.8	319.0	320.2	321.4	322.6	323.8	325.0	326.2	319.2	320.4	321.6	322.8	324.0	325.2	326.4	327.6	328.8	330.0	323.0	324.2	325.4	326.6	327.8	329.0	330.2	331.5	332.7	333.9	326.8	328.0	329.2	330.4	331.6	332.8	334.1	335.3	336.5	337.7	51.0
52.0	327.4	328.6	329.8	331.1	332.3	333.5	334.7	335.9	337.1	338.4	331.3	332.5	333.7	334.9	336.1	337.4	338.6	339.8	341.1	342.3	335.1	336.3	337.6	338.8	340.0	341.3	342.5	343.7	345.0	346.2	339.0	340.2	341.4	342.7	343.9	345.1	346.4	347.6	348.9	350.1	52.0
53.0	339.6	340.8	342.1	343.3	344.5	345.8	347.0	348.3	349.5	350.7	343.5	344.8	346.0	347.2	348.5	349.7	351.0	352.2	353.5	354.7	347.4	348.7	349.9	351.2	352.4	353.7	355.0	356.2	357.5	358.7	351.4	352.6	353.9	355.1	356.4	357.7	358.9	360.2	361.5	362.7	53.0
54.0	352.0	353.3	354.5	355.8	357.0	358.3	359.6	360.8	362.1	363.4	356.0	357.3	358.5	359.8	361.1	362.3	363.6	364.9	366.1	367.4	360.0	361.3	362.5	363.8	365.1	366.4	367.6	368.9	370.2	371.5	364.0	365.3	366.6	367.8	369.1	370.4	371.7	373.0	374.3	375.6	54.0
55.0	364.6	365.9	367.2	368.5	369.7	371.0	372.3	373.6	374.9	376.2	368.7	370.0	371.3	372.5	373.8	375.1	376.4	377.7	379.0	380.3	372.8	374.1	375.4	376.7	378.0	379.3	380.6	381.9	383.2	384.5	376.9	378.2	379.4	380.8	382.1	383.4	384.7	386.0	387.3	388.6	55.0
56.0	377.5	378.8	380.1	381.4	382.7	384.0	385.3	386.6	387.9	389.3	381.6	382.9	384.2	385.5	386.9	388.2	389.5	390.8	392.1	393.5	385.8	387.1	388.4	389.7	391.0	392.4	393.7	395.0	396.3	397.7	389.9	391.2	392.6	393.9	395.2	396.5	397.9	399.2	400.5	401.9	56.0
57.0	390.6	391.9	393.2	394.5	395.8	397.2	398.5	399.8	401.2	402.5	394.8	396.1	397.4	398.8	400.1	401.4	402.8	404.1	405.5	406.8	399.0	400.3	401.7	403.0	404.4	405.7	407.0	408.4	409.7	411.1	403.2	404.6	405.9	407.3	408.6	409.9	411.3	412.7	414.0	415.4	57.0
58.0	403.8	405.2	406.5	407.9	409.2	410.6	411.9	413.3	414.6	416.0	408.1	409.5	410.8	412.2	413.6	414.9	416.3	417.6	419.0	420.4	412.4	413.8	415.2	416.5	417.9	419.3	420.6	422.0	423.4	424.7	416.7	418.1	419.5	420.8	422.2	423.6	425.0	426.3	427.7	429.1	58.0
59.0	417.4	418.7	420.1	421.5	422.8	424.2	425.6	427.0	428.3	429.7	421.7	423.1	424.5	425.9	427.2	428.6	430.0	431.4	432.8	434.2	426.1	427.5	428.9	430.3	431.6	433.0	434.4	435.8	437.2	438.6	430.5	431.9	433.3	434.6	436.0	437.4	438.8	440.2	441.6	443.0	59.0
60.0	431.1	432.5	433.9	435.3	436.7	438.1	439.5	440.9	442.3	443.7	435.6	436.9	438.3	439.7	441.2	442.5	443.9	445.4	446.8	448.2	440.0	441.4	442.8	444.2	445.6	447.0	448.4	449.9	451.3	452.7	444.4	445.8	447.3	448.7	450.1	451.5	452.9	454.3	455.8	457.2	60.0
61.0	445.1	446.5	447.9	449.3	450.7	452.1	453.6	455.0	456.4	457.8	449.6	451.0	452.4	453.8	455.3	456.1	458.1	459.5	461.0	462.4	454.1	455.5	457.0	458.4	459.8	461.3	462.7	464.1	465.6	467.0	458.6	460.1	461.5	462.9	464.4	465.8	467.2	468.7	470.1	471.6	61.0
62.0	NOTE This sheet may be used for any combination of side slopes equaling six (6) e.g. 2½ : 1 with 3½ : 1. Data below heaviest lines apply to embankments whose ratio of top widths to center height is too narrow as indicated by, $W = \frac{H+35}{5}$										463.8	465.3	466.7	468.2	469.6	471.1	472.5	474.0	475.4	476.9	468.4	469.9	471.3	472.8	474.2	475.7	477.2	478.6	480.1	481.5	473.0	474.5	475.9	477.4	478.9	480.3	481.8	483.3	484.7	486.2	62.0
63.0											478.3	479.8	481.3	482.7	484.2	485.7	487.1							487.4	488.9	490.4	491.8	493.3	494.8	496.3	487.7	489.1	490.6	492.1	493.6	495.1	496.5	498.0	499.5	501.0	63.0
64.0											493.0	494.5	496.0	497.5	499.0	500.5	502.0							502.3	503.8	505.3	506.8	508.3	509.8	511.3	502.5	504.0	505.5	507.0	508.5	510.0	511.5	513.0	514.6	516.1	64.0

Exhibit 11-6.1

11-56.4

REFERENCE

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

TSC - NE - ENG.

SHEET 4 1114 OF 5

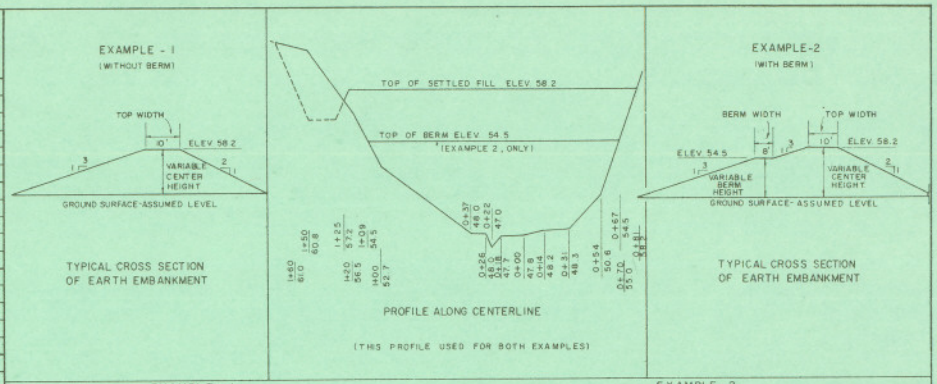
USDA-SCS-HYATTSVILLE, MD. 1970

EARTH FILL VOLUME TABLES

CUBIC YARDS OF EARTH PER LINEAR FOOT OF EMBANKMENT

BERM HEIGHT IN FEET	4 FOOT BERM WIDTH — Tenths of a Foot										5 FOOT BERM WIDTH — Tenths of a Foot									
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2
1.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.4
2.0	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5
3.0	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7
4.0	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.9
5.0	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.1	1.1	1.1
6.0	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.3	1.3
7.0	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.3	1.3	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.5
8.0	1.2	1.2	1.2	1.2	1.2	1.3	1.3	1.3	1.3	1.3	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.6
9.0	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8
10.0	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.8	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0
11.0	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.8	2.0	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2
12.0	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4
13.0	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.4	2.4	2.4	2.5	2.5	2.5	2.5	2.5	2.6	2.6
14.0	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.6	2.6	2.6	2.6	2.7	2.7	2.7	2.7	2.7	2.8
15.0	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.8	2.8	2.8	2.8	2.8	2.9	2.9	2.9	2.9	2.9
16.0	2.4	2.4	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.5	3.0	3.0	3.0	3.0	3.0	3.1	3.1	3.1	3.1	3.1
17.0	2.5	2.5	2.5	2.6	2.6	2.6	2.6	2.6	2.6	2.6	3.2	3.2	3.2	3.2	3.2	3.2	3.3	3.3	3.3	3.3
18.0	2.7	2.7	2.7	2.7	2.7	2.7	2.8	2.8	2.8	2.8	3.3	3.4	3.4	3.4	3.4	3.4	3.4	3.5	3.5	3.5
19.0	2.8	2.8	2.8	2.9	2.9	2.9	2.9	2.9	2.9	3.0	3.5	3.5	3.6	3.6	3.6	3.6	3.6	3.6	3.7	3.7
20.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.1	3.1	3.1	3.7	3.7	3.7	3.8	3.8	3.8	3.8	3.8	3.8	3.9
21.0	3.1	3.1	3.1	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.9	3.9	3.9	3.9	4.0	4.0	4.0	4.0	4.0	4.1
22.0	3.3	3.3	3.3	3.3	3.3	3.3	3.4	3.4	3.4	3.4	4.1	4.1	4.1	4.1	4.2	4.2	4.2	4.2	4.2	4.2
23.0	3.4	3.4	3.4	3.4	3.5	3.5	3.5	3.5	3.5	3.5	4.3	4.3	4.3	4.3	4.3	4.4	4.4	4.4	4.4	4.4
24.0	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.7	3.7	3.7	4.4	4.5	4.5	4.5	4.5	4.5	4.6	4.6	4.6	4.6

BERM HEIGHT IN FEET	6 FOOT BERM WIDTH — Tenths of a Foot										8 FOOT BERM WIDTH — Tenths of a Foot									
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3
1.0	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.6
2.0	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.8	0.8	0.8	0.9
3.0	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.2
4.0	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.1	1.1	1.2	1.2	1.2	1.3	1.3	1.3	1.4	1.4	1.4	1.4
5.0	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.3	1.3	1.3	1.5	1.5	1.5	1.6	1.6	1.6	1.7	1.7	1.7	1.8
6.0	1.3	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.5	1.8	1.8	1.8	1.9	1.9	1.9	2.0	2.0	2.0	2.0
7.0	1.6	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.8	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.3	2.3
8.0	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	2.0	2.0	2.4	2.4	2.4	2.5	2.5	2.5	2.6	2.6	2.6	2.6
9.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.7	2.7	2.7	2.8	2.8	2.8	2.8	2.9	2.9	2.9
10.0	2.2	2.2	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4	3.0	3.0	3.0	3.0	3.1	3.1	3.1	3.2	3.2	3.2
11.0	2.4	2.5	2.5	2.5	2.5	2.6	2.6	2.6	2.6	2.6	3.3	3.3	3.3	3.4	3.4	3.4	3.4	3.5	3.5	3.5
12.0	2.7	2.7	2.7	2.7	2.8	2.8	2.8	2.8	2.8	2.9	3.6	3.6	3.6	3.6	3.7	3.7	3.7	3.8	3.8	3.8
13.0	2.9	2.9	2.9	3.0	3.0	3.0	3.0	3.0	3.1	3.1	3.8	3.9	3.9	3.9	4.0	4.0	4.0	4.1	4.1	4.1
14.0	3.1	3.1	3.2	3.2	3.2	3.2	3.2	3.3	3.3	3.3	4.2	4.2	4.2	4.2	4.3	4.3	4.3	4.4	4.4	4.4
15.0	3.3	3.4	3.4	3.4	3.4	3.4	3.5	3.5	3.5	3.5	4.4	4.5	4.5	4.5	4.6	4.6	4.6	4.6	4.7	4.7
16.0	3.6	3.6	3.6	3.6	3.6	3.7	3.7	3.7	3.7	3.8	4.7	4.8	4.8	4.8	4.9	4.9	4.9	5.0	5.0	5.0
17.0	3.8	3.8	3.8	3.8	3.9	3.9	3.9	3.9	4.0	4.0	5.0	5.1	5.1	5.1	5.2	5.2	5.2	5.2	5.3	5.3
18.0	4.0	4.0	4.0	4.1	4.1	4.1	4.1	4.2	4.2	4.2	5.3	5.4	5.4	5.4	5.4	5.4	5.5	5.5	5.6	5.6
19.0	4.2	4.2	4.3	4.3	4.3	4.3	4.4	4.4	4.4	4.4	5.6	5.7	5.7	5.7	5.8	5.8	5.8	5.8	5.9	5.9
20.0	4.4	4.5	4.5	4.5	4.5	4.6	4.6	4.6	4.6	4.6	5.9	6.0	6.0	6.0	6.0	6.1	6.1	6.1	6.2	6.2
21.0	4.7	4.7	4.7	4.7	4.8	4.8	4.8	4.8	4.8	4.9	6.2	6.2	6.3	6.3	6.3	6.4	6.4	6.4	6.5	6.5
22.0	4.9	4.9	4.9	5.0	5.0	5.0	5.0	5.0	5.1	5.1	6.5	6.6	6.6	6.6	6.6	6.7	6.7	6.7	6.8	6.8
23.0	5.1	5.1	5.2	5.2	5.2	5.2	5.2	5.3	5.3	5.3	6.8	6.8	6.9	6.9	6.9	7.0	7.0	7.0	7.1	7.1
24.0	5.3	5.4	5.4	5.4	5.4	5.4	5.5	5.5	5.5	5.5	7.1	7.1	7.2	7.2	7.2	7.3	7.3	7.3	7.4	7.4



EXAMPLE - 1

GIVEN - Elevation of top of embankment 58.2
Cross Sections Data (See profile along centerline above)
Top width of embankment = 10' - No Berm
Side Slopes 3:1 & 2:1

FIND - Volume of Embankment

1 STATION FEET	2 GROUND ELEV. FEET	3 CENTER HEIGHTS EMBANK. 58.2-(2) FEET	4 VOLUME EMBANK. CU.YDS./FT	5 SUMMATION VOLUME	6 AVERAGE VOLUME (5) ÷ 2 CU.YDS./FT	7 DISTANCE BETWEEN STATIONS FEET	8 VOLUME EMBANK (6) x (7) CU. YDS.
IL+25	-	0	0				
				0.9	0.4	5	2
IL+20	56.5	1.7	0.9				
				5.8	2.9	20	58
IL+00	52.7	5.5	4.9				
				18.3	9.2	63	580
OL+37	48.0	10.2	13.4				
				26.8	13.4	11	147
OL+26	48.0	10.2	13.4				
				29.2	14.6	4	58
OL+22	47.0	11.2	15.8				
				29.9	15.0	4	60
OL+18	47.7	10.5	14.1				
				28.0	14.0	18	252
0+00	47.8	10.4	13.9				
				26.9	13.4	14	188
OR+14	48.2	10.0	13.0				
				25.8	12.9	17	219
OR+31	48.3	9.9	12.8				
				21.0	10.5	23	242
OR+54	50.6	7.6	8.2				
				10.3	5.2	16	83
OR+70	55.0	3.2	2.1				
				2.1	1.0	11	11
OR+81	58.2	0	0				
				(IL+25)-(OR+81)=		206	1900
				SHRINKAGE 20% x 1900 = + 380			
				TOTAL VOLUME - CU. YDS = 2280			

EXAMPLE - 2

GIVEN - Elevation of top of embankment 58.2
Cross Sections Data (See profile along centerline above)
Top width of Embankment = 10' - Top width Berm = 8'
Sides Slopes 3:1 & 2:1

FIND - Combined Volume of Embankment & Berm

1 STATION FEET	2 GROUND ELEV. FEET	3 CENTER HEIGHTS EMBANK. 58.2-(2) FEET	4 FILL HEIGHTS BERM 54.5-(2) FEET	5 VOLUME EMBANK CU.YDS./FT	6 VOLUME BERM CU.YDS./FT	7 TOTAL VOLUME (5)+(6) CU.YDS./FT	8 SUMMATION VOLUME	9 AVERAGE VOLUME (8) ÷ 2 CU.YDS./FT	10 DISTANCE BETWEEN STATIONS FEET	11 VOLUME EMBANK PLUS BERM (9) x (10) CU YDS.
IL+25	-	0	-	0	-	0				
							0.9	0.4	5	2
IL+20	56.5	1.7	-	0.9	-	0.9				
							3.6	1.8	11	20
IL+09	54.5	3.7	0	2.7	0	2.7				
							8.1	4.0	9	36
IL+00	52.7	5.5	1.8	4.9	0.5	5.4				
							20.7	10.4	63	655
OL+37	48.0	10.2	6.5	13.4	1.9	15.3				
							30.6	15.3	11	168
OL+26	48.0	10.2	6.5	13.4	1.9	15.3				
							33.3	16.6	4	66
OL+22	47.0	11.2	7.5	15.8	2.2	18.0				
							34.1	17.0	4	68
OL+18	47.7	10.5	6.8	14.1	2.0	16.1				
							32.0	16.0	18	288
0+00	47.8	10.4	6.7	13.9	2.0	15.9				
							30.8	15.4	14	216
OR+14	48.2	10.0	6.3	13.0	1.9	14.9				
							29.5	14.8	17	252
OR+31	48.3	9.9	6.2	12.8	1.8	14.6				
							24.0	12.0	23	276
OR+54	50.6	7.6	3.9	8.2	1.2	9.4				
							12.1	6.0	13	78
OR+67	54.5	3.7	0	2.7	0	2.7				
							4.8	2.4	3	7
OR+70	55.0	3.2	-	2.1	-	2.1				
							2.1	1.0	11	11
OR+81	58.2	0	-	0	-	0				
							(IL+25)-(OR+81)=		206	2143
							SHRINKAGE 20% x 2143 = + 429			
							TOTAL VOLUME - CU YDS = 2572			

11-56.5

Exhibit 11-6.1

REFERENCE

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
ENGINEERING & WATERSHED PLANNING UNIT
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SHEET 5 OF 5