

APPENDIX I
POSTCLOSURE SETTLEMENT CALCULATIONS

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OBJECTIVE

Evaluate the post settlement cover grades to ensure minimum drainage grades are maintained.

ASSUMPTIONS

1. Primary settlements are complete.
2. Secondary Compression Index = 0.05 (conservative value, typical 0.02 to 0.04)
3. Average time after primary settlement is complete is 6 years (1/2 of phase A life). Evaluate cover settlement for a 30 year time period (post closure minimum 30 year). $t_2 = 36$ years.

METHODOLOGY

Secondary Settlement can be estimated using the soil consolidation equation:

$$\Delta s = C_a H \log\left(\frac{t_1}{t_2}\right)$$

Where

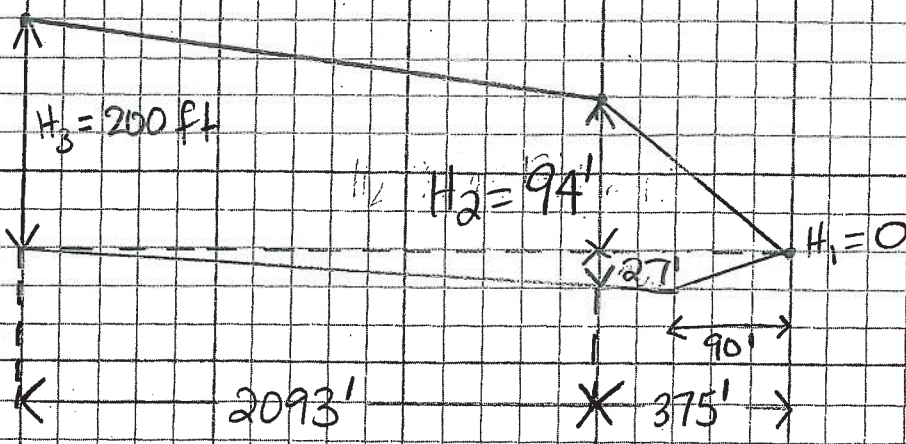
Δs = Secondary settlement

C_a = Secondary Compression Index = 0.05

H = Height of refuse = varies

t_1 = Time to end of primary settlement = 6 years

t_2 = Total time = 36 years



CROSS SECTION
(NOT TO SCALE)

POST SETTLEMENT GRADES

@ H_1 : $\Delta S = 0$

@ H_2 : $\Delta S = (0.05)(94+27) \log(30/6) = 4.71 \text{ ft}$

@ H_3 : $\Delta S = (0.05)(200) \log(30/6) = 7.78 \text{ ft}$

FINAL GRADES

$H_3 \text{ to } H_2 = \frac{(200 - 7.78) - (94 - 4.71)}{2093} = 4.9\%$

$H_2 \text{ to } H_1 = \frac{(94 - 4.71) - 0}{375} = 23.8\%$