

Cosetta1.0

Consolidation
Settlement
Analysis



Fonctionnalités de l'application

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Tassements sous remblai trapézoïdal

- Tassement à court terme
- Tassement œdométrique

1

Tassements sous remblai triangulaire

- Tassement à court terme
- Tassement œdométrique

Dimensionnement des DV

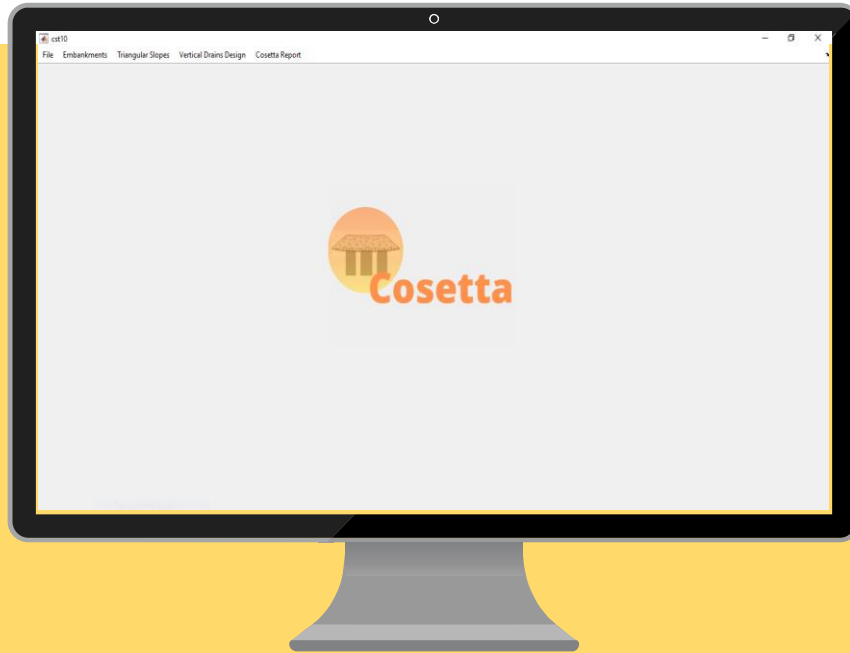
- Méthode de Barron
- Méthode de Carillo

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Notes de calcul





Interface d'accueil

A large yellow geometric shape, resembling a trapezoid or a triangle with a cut-off top, is positioned on the left side of the slide. It has a diagonal top edge and a vertical right edge.

Tassement à court terme ; remblai trapézoïdale



Figure 1: Short Term Settlement of Embankments

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Layer Type	Thickness (m)	Deformation Modulus E (MPa)	Poisson Ratio
Sand	11	7.6000	0.3000
Sand	3	21	0.3000
Sand	18	4	0.3000
Sand	26	20	0.3000
Sand	0	5	0.3000
Sand	0	5	0.3000
Sand	0	5	0.3000
Sand	0	5	0.3000
Sand	0	5	0.3000
Sand	0	5	0.3000
Sand	0	5	0.3000
Sand	0	5	0.3000
Sand	0	5	0.3000
Sand	0	5	0.3000

Height (m)	Density (kN/m ³)	a(m)	b(m)
4	20	6	19

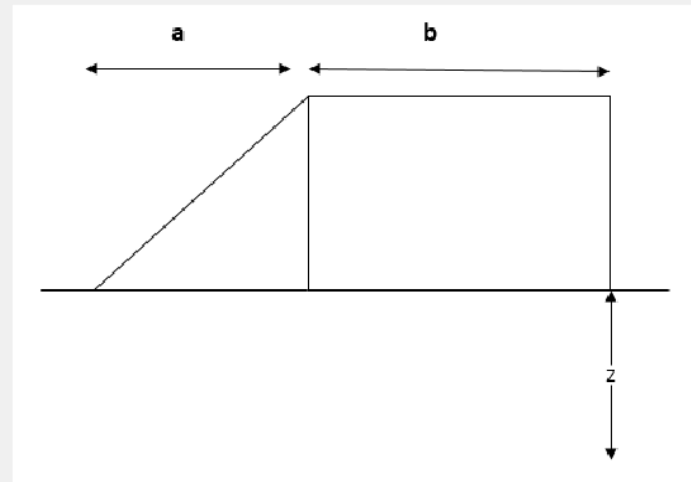
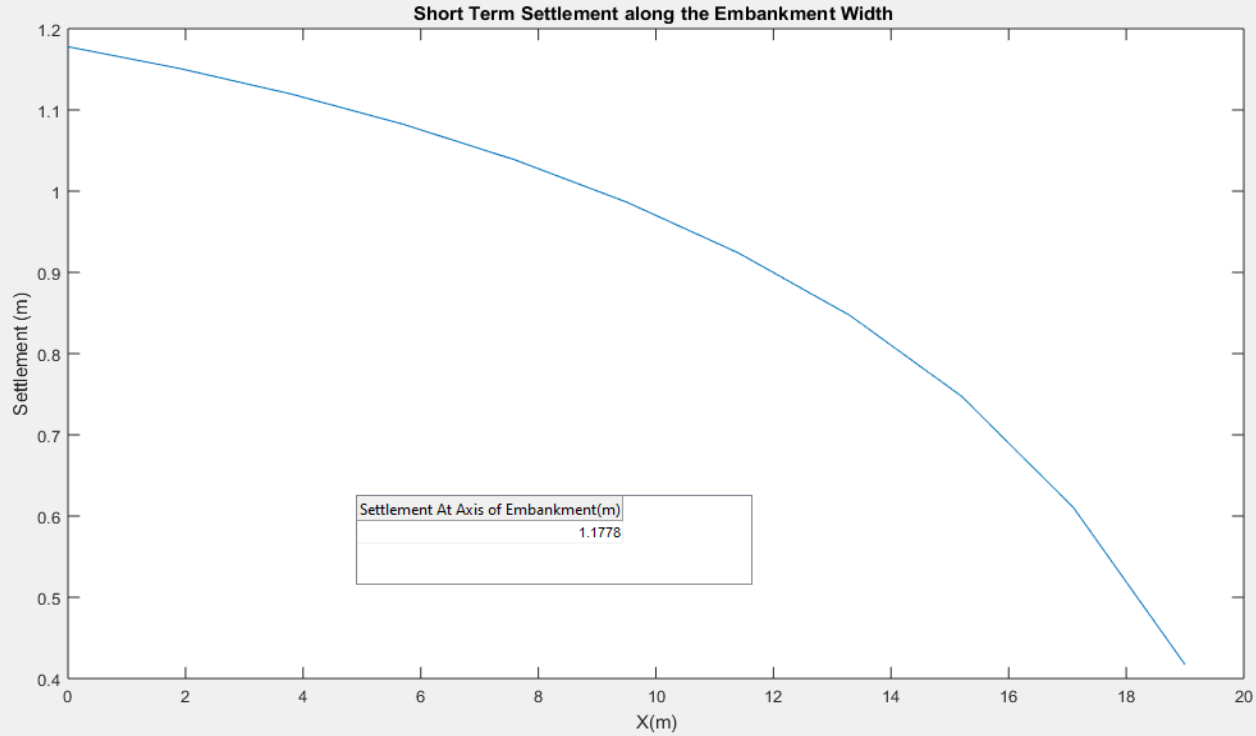


Figure 2: Short Term Settlement of Embankments / Results

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A large yellow geometric shape, resembling a trapezoid or a triangle with a missing corner, is positioned on the left side of the slide. It has a diagonal edge from the top-left to the bottom-right, and a vertical edge on the right side.

Tassement œdométrique ; remblai trapézoïdale

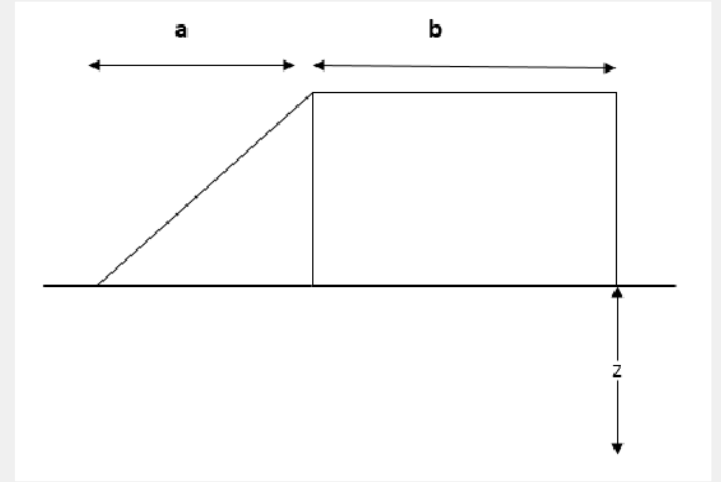
Figure 1: Oedometric Settlement of Embankments

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Layer Thickness(m)	Density (kN/m3)	Cr	Cc	Sigpp (kPa)	e0
11	18	0.0500	0.4000	83.6000	1.1700
18	18	0.0500	0.4000	94.1000	1.1700
26	18	0.0500	0.4000	102.5000	1.1700
0	18	0.0100	0.2000	75	1.1000
0	18	0.0100	0.2000	75	1.1000
0	18	0.0100	0.2000	75	1.1000
0	18	0.0100	0.2000	75	1.1000

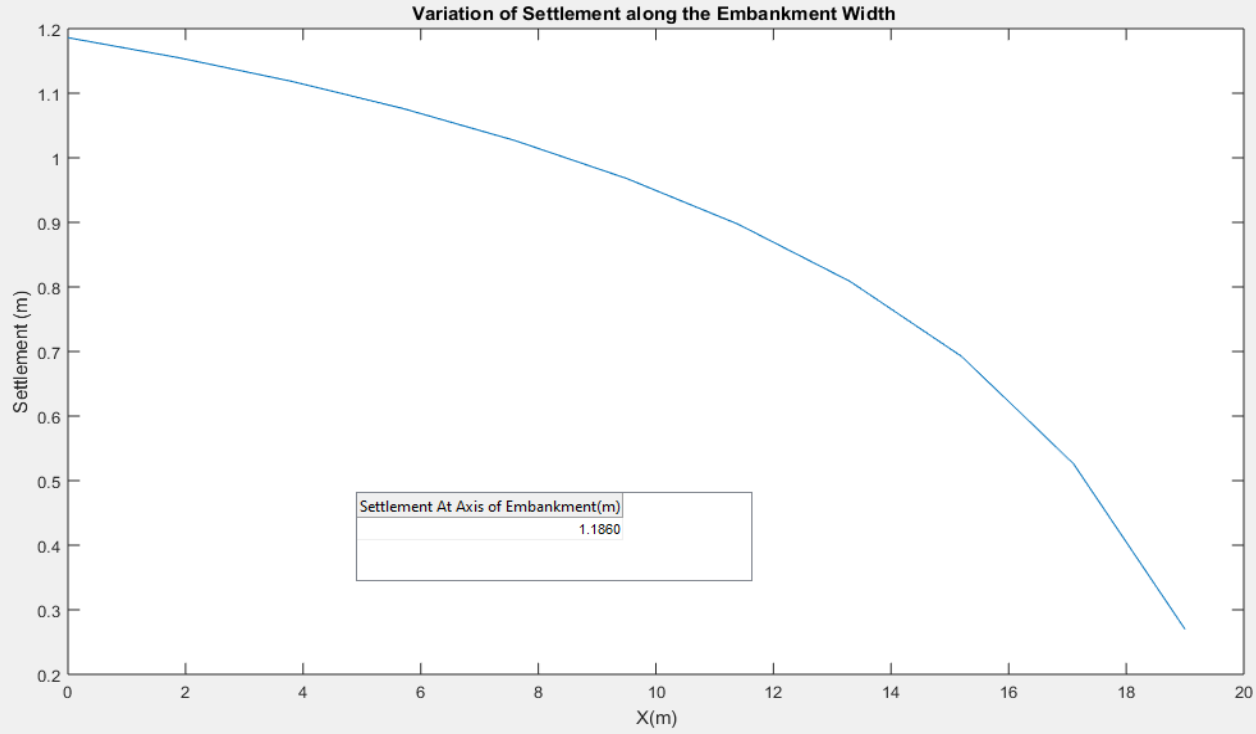
Height (m)	Density (kN/m3)	Water Table (m)	a(m)	b(m)
4	20	0	6	19



Capture Palm screen

Figure 2: Oedometric Settlement Results

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Settlement At Axis of Embankment(m)
1.1860

A large yellow geometric shape, resembling a right-angled triangle with a diagonal cut, occupies the left side of the slide. It is composed of a yellow square on the left and a yellow triangle on the right, with the hypotenuse of the triangle forming a diagonal line from the top-left to the bottom-right.

Tassement à court terme ; remblai triangulaire



Figure 1: Short Term Settlement of triangular slopes

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Layer Type	Thickness (m)	Deformation Modulus E (MPa)	Poisson Ratio
Sand	5	6.3000	0.3000
Sand	7	12.6000	0.3000
Sand	10	20.6000	0.3000
Sand	15	86.4000	0.3000
Sand	0	5	0.3000
Sand	0	5	0.3000
Sand	0	5	0.3000
Sand	0	5	0.3000
Sand	0	5	0.3000
Sand	0	5	0.3000
Sand	0	5	0.3000
Sand	0	5	0.3000
Sand	0	5	0.3000
Sand	0	5	0.3000

Height (m)	Density (kN/m ³)	a(m)
7	20	6

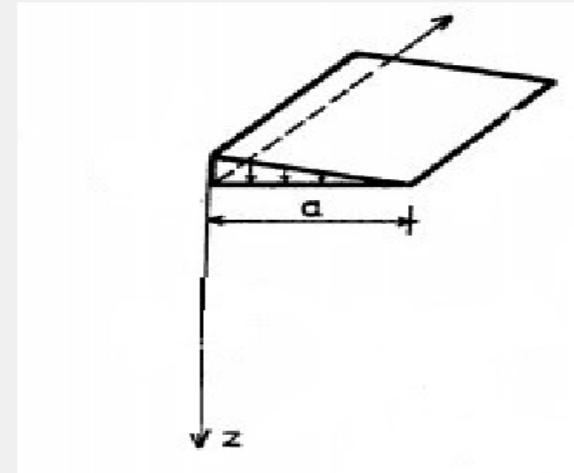
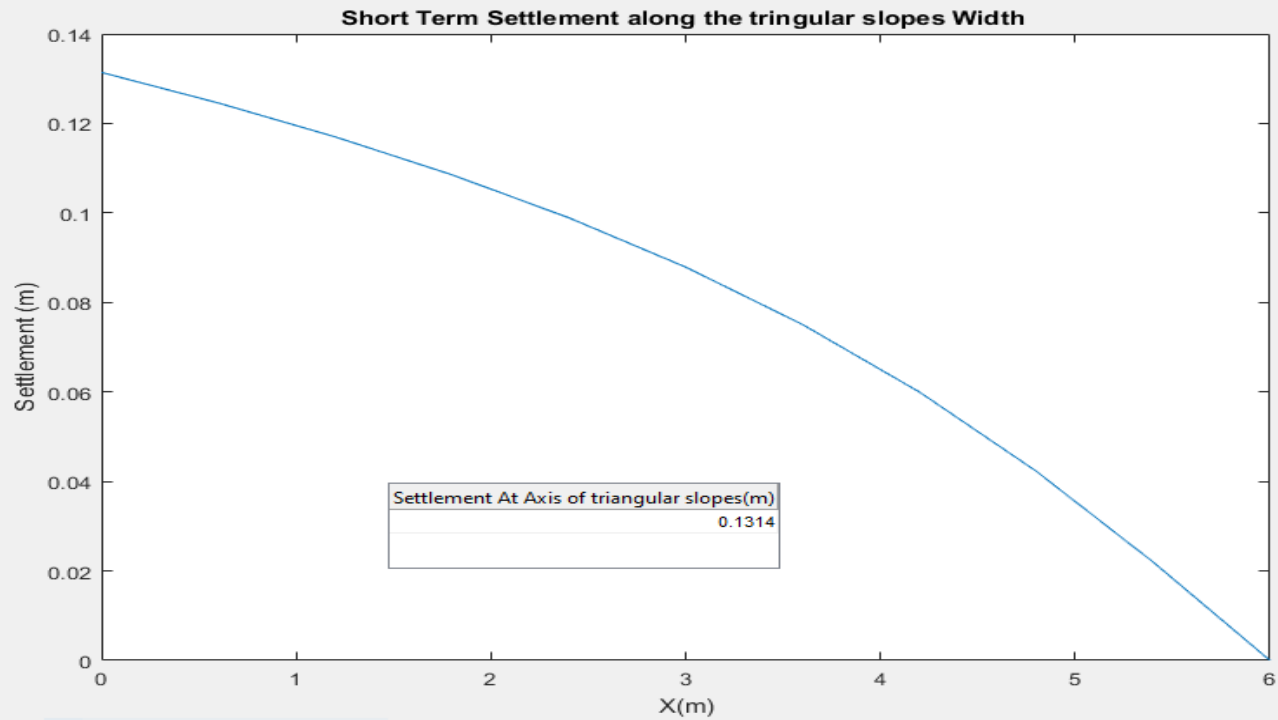


Figure 2: Short Term Settlement of triangular slopes / Results

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• Capture rectangulaire

A large yellow geometric shape, resembling a triangle with a diagonal cut, occupies the left side of the slide.

Tassement œdométrique ; remblai triangulaire

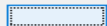
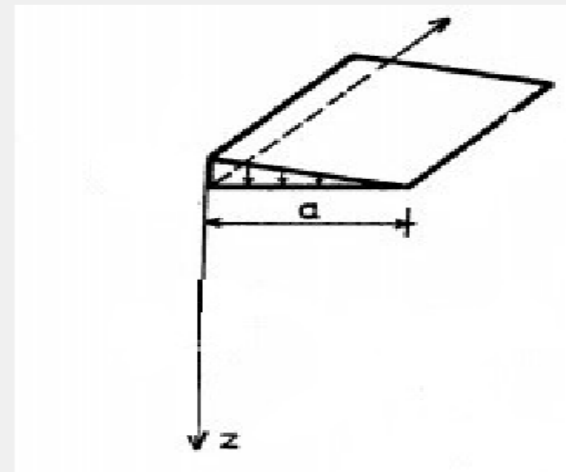
Figure 1: Oedometric Settlement of triangular slopes

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Layer Thickness(m)	Density (kN/m ³)	Cr	Cc	Sigp (kPa)	e0
3.7000	18	0.0200	0.3150	40	1.0780
8	18	0.0200	0.3150	40	1.0780
0	18	0.0200	0	75	1.1000
0	18	0.0100	0.2000	75	1.1000
0	18	0.0100	0.2000	75	1.1000
0	18	0.0100	0.2000	75	1.1000
0	18	0.0100	0.2000	75	1.1000

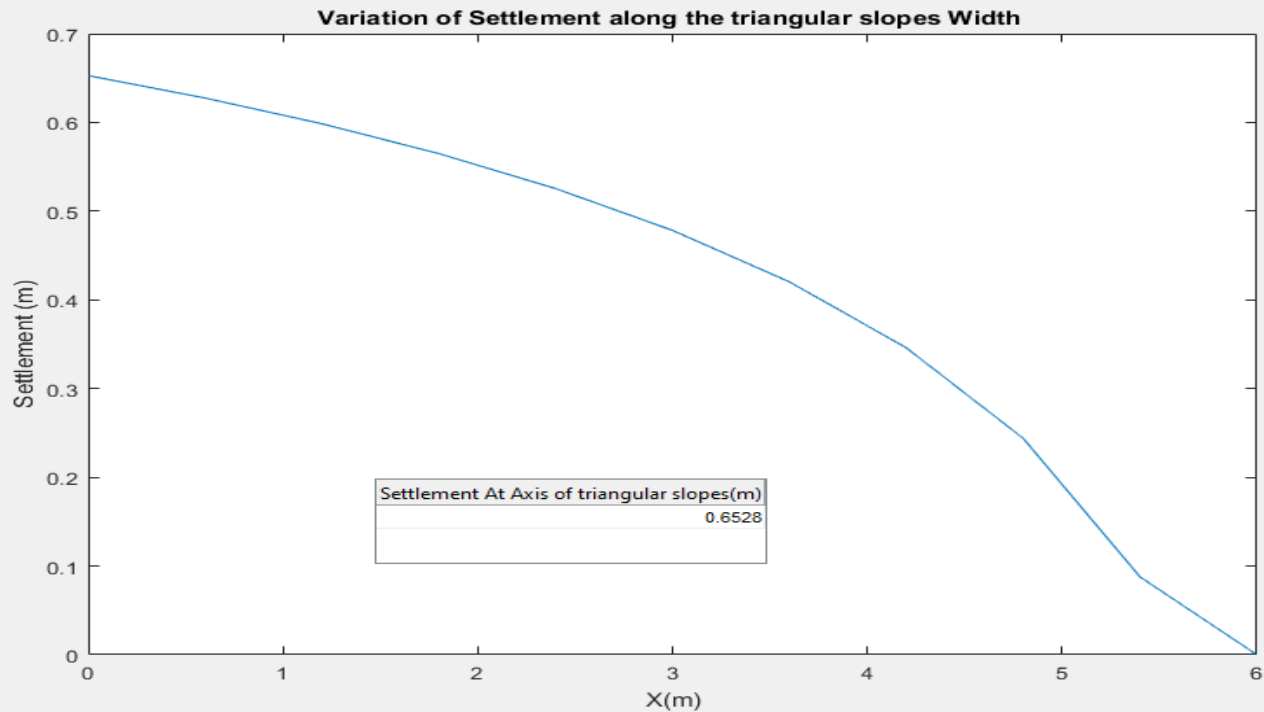
Height (m)	Density (kN/m ³)	Water Table (m)	a(m)
7	20	0	6



Capture rectangulaire

Figure 2: Oedometric Settlement Results

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Capture rectangular



Dimensionnement des drains verticaux Méthode de Barron

Figure 1: Design of Vertical Drains :Barron Method

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Target Time (months)	Cv	k	Dw	U(%)	pattern
9	0.1870	0.5000	0.45	90	squared__ ▾

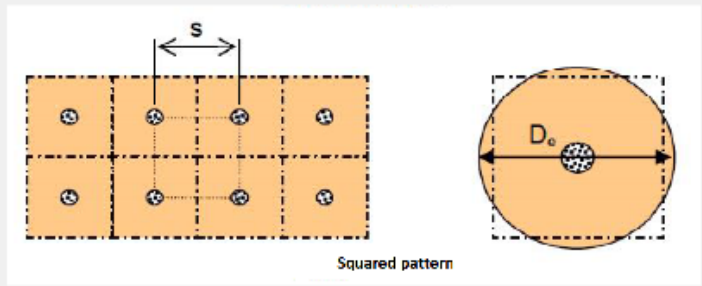
Capture rectangulaire

Figure 2: Results of Vertical Drains Design

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Spacing (m)
1.9000



Squared pattern



Dimensionnement des drains verticaux Méthode de Carillo

Figure 1: Design of Vertical Drains :Carillo Method

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Layer Type	Thickness (m)	Cv
Sand	10	0.1000
Clay	9.2000	0.1870
Sand	5	0.1000
Clay	0	0.1000
Clay	0	0.1000
Clay	0	0.1000
Clay	0	0.1000
Clay	0	0.1000
Clay	0	0.1000
Clay	0	0.1000
Clay	0	0.1000

Target Time (months)	k	Dw	U(%)	pattern
9	0.5000	0.45	90	squared

Capture rectangulaire

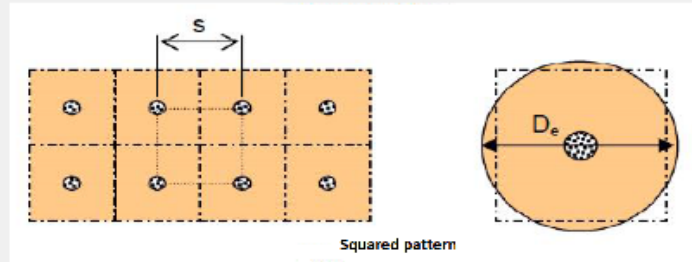
Figure 2: Results of Vertical Drains Design

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Spacing (m)

1.7387



Squared pattern