

ภาคผนวก ก-4

รายการคำนวณเสถียรภาพความแข็งแรงบ่อหนองน้ำฝน 1 และ 2

รายการคำนวณเสถียรภาพความแข็งแรงบ่อหนองน้ำฝน 1

รายการคำนวณ ความมั่นคงของบ่อหนองน้ำ 1 2 และ 3

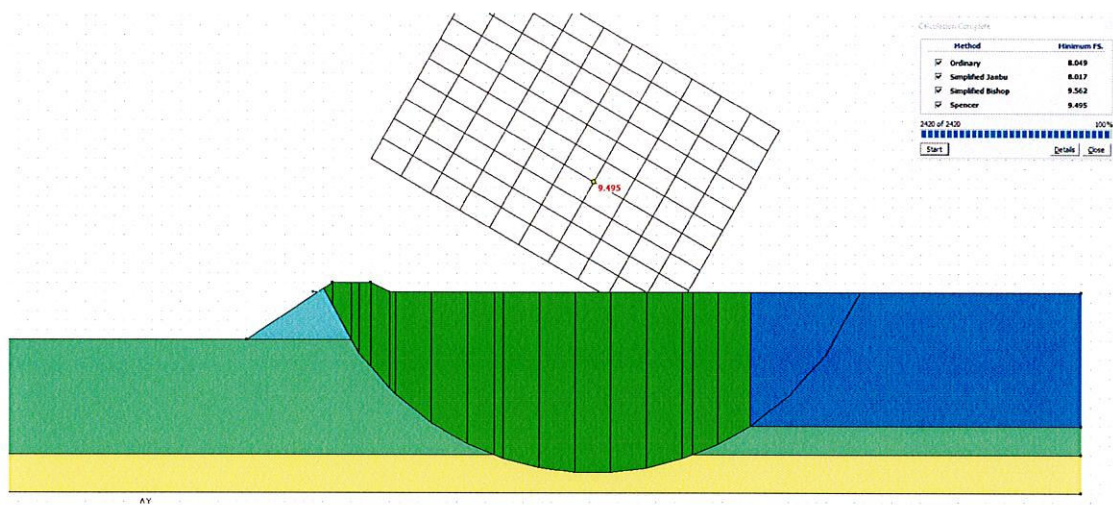
บ่อหนองน้ำ 1 มีความคันปอกกว้าง 4 เมตร ความลาดเอียงด้านหลังคัน 1:1.5 ภายในบ่อมีความลาดเอียง 1:2

คำนวณค่าความปลอดภัย กรณีน้ำเต็มบ่อ

คุณสมบัติของดิน Zone 1 ค่า cohesion 2 Phi 35 ค่าความหนาแน่น 1.8 t/m³

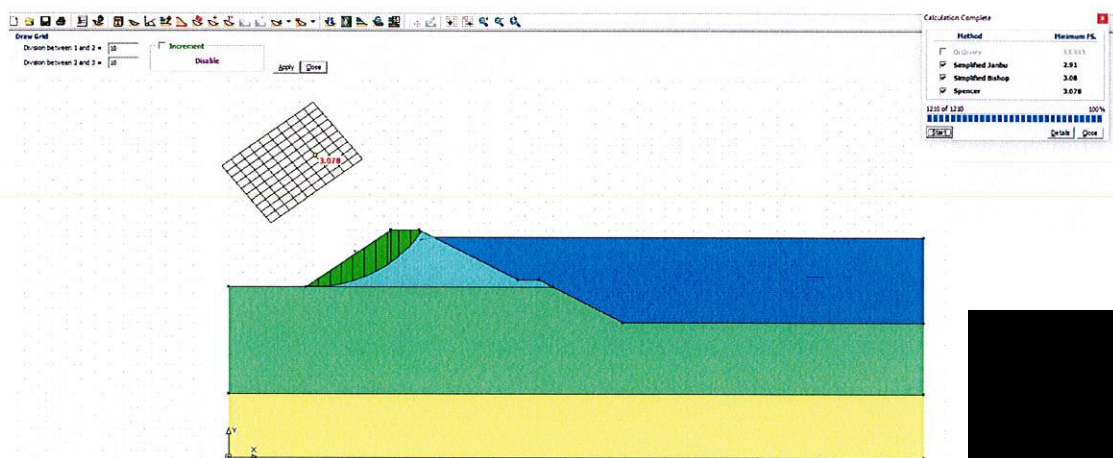
Zone 2 ค่า cohesion 4 Phi 30 ค่าความหนาแน่น 1.9 t/m³

Zone 3 ค่า cohesion 5 Phi 35 ค่าความหนาแน่น 1.9 t/m³



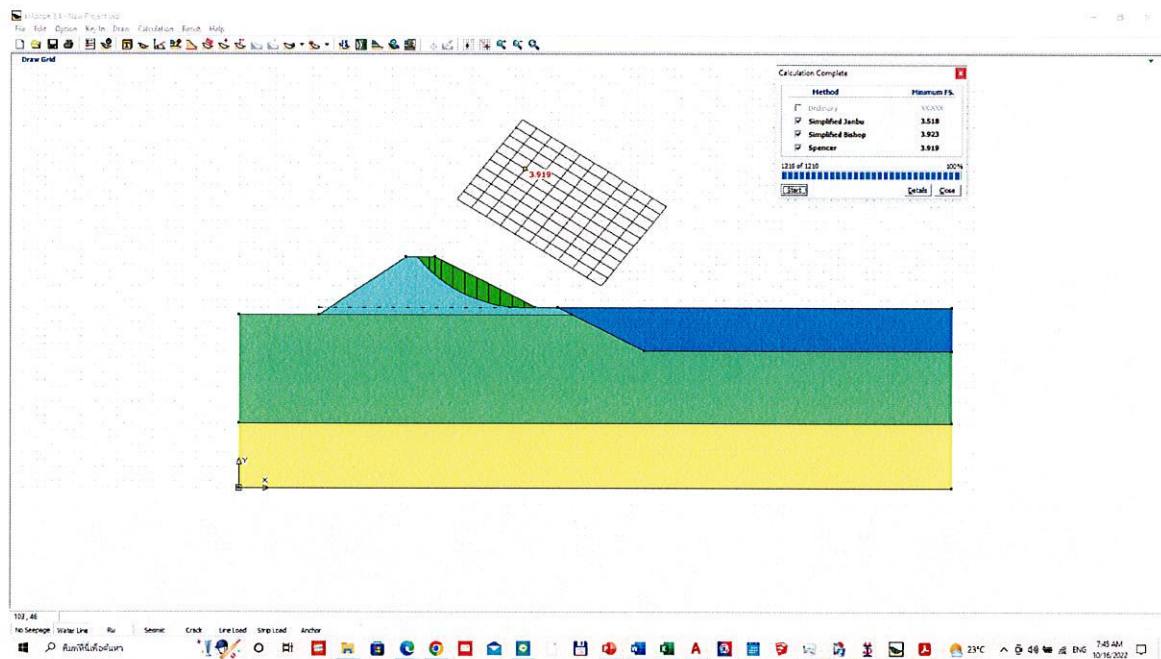
ความปลอดภัยลาดเสถียร ภายในบ่อ เท่ากับ $9.455 > 1.5$ OK

คำนวณค่าความปลอดภัยของคันดินด้านนอกบ่อหนอง

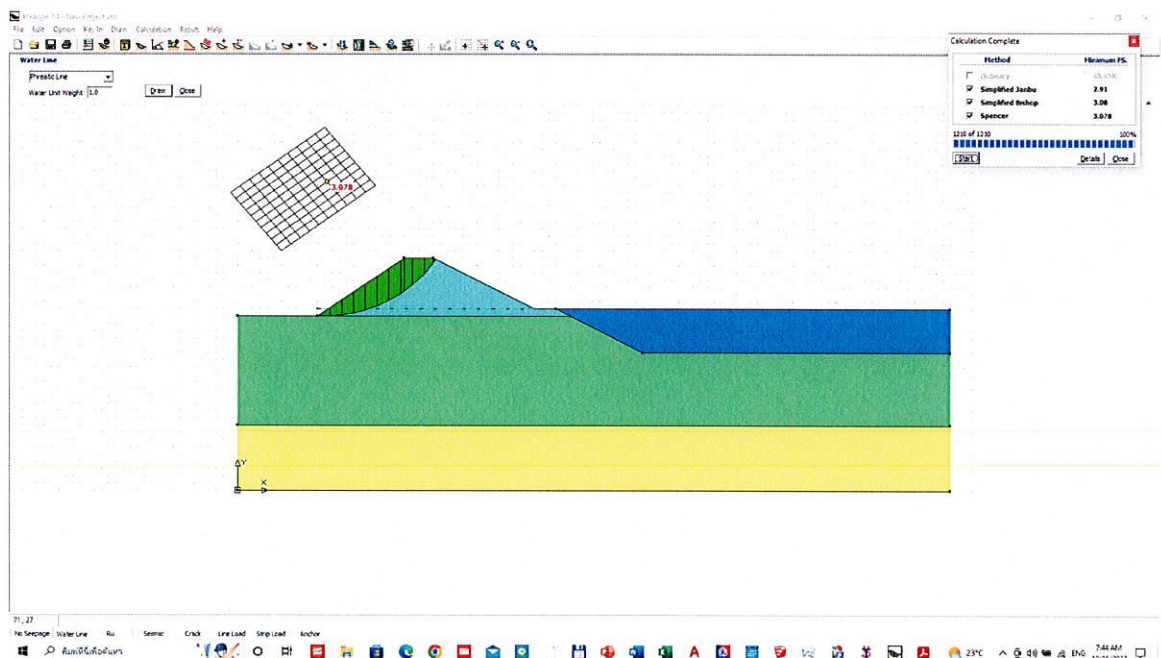


ความปลอดภัยลาดเสถียร ภายนอกบ่อ เท่ากับ $3.078 > 1.5$ OK

กรณี 2 น้ำลดลงถึงระดับคันป่อที่ 1



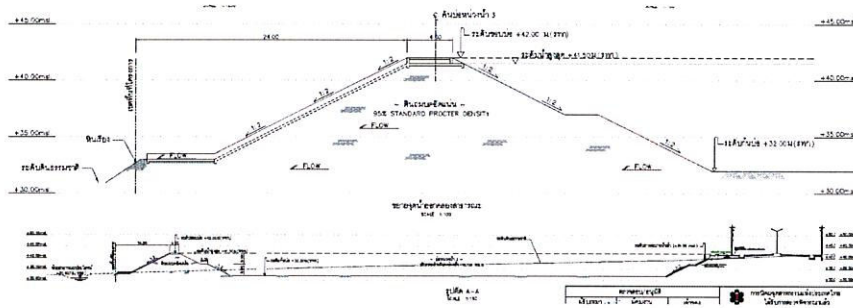
ความปลอดภัยลาดเสถียร ภายในป่อ เท่ากับ $3.915 > 1.5$ OK



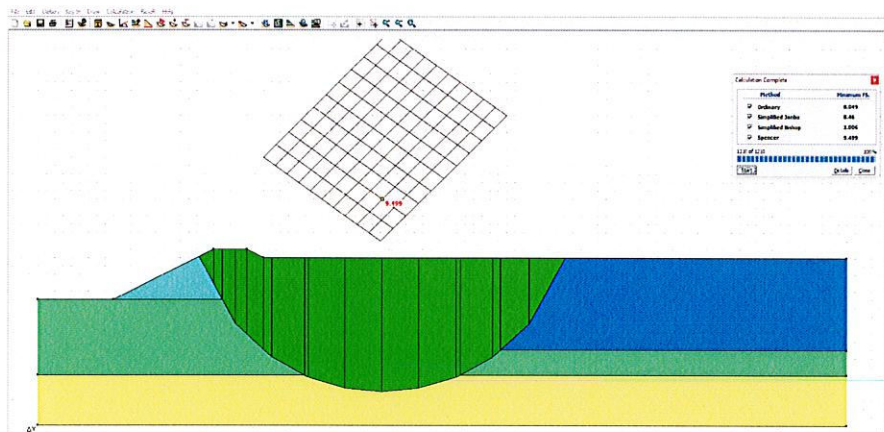
ความปลอดภัยลาดเสถียร ภายนอกป่อ เท่ากับ $3.078 > 1.5$ OK

รายการคำนวณค่าความปลอดภัยของ ป่อหนองน้ำหมายเลข 4

ป่อ 3

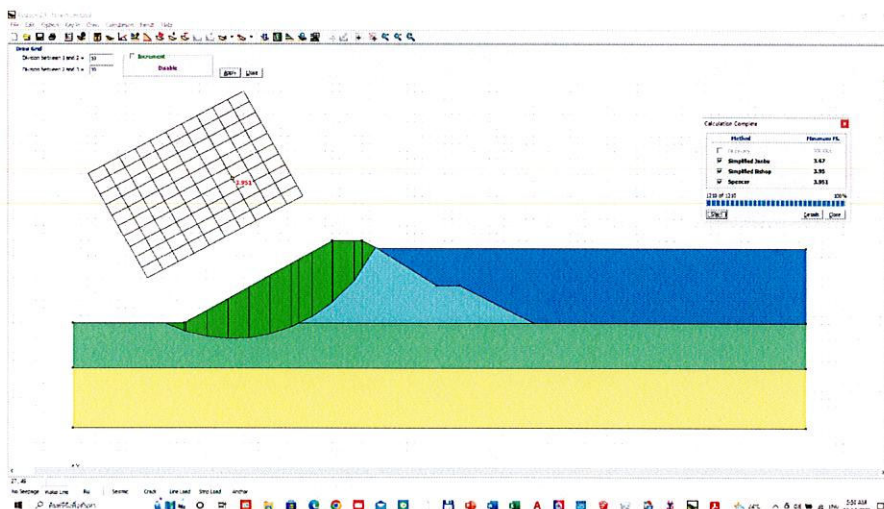


คำนวณค่าความปลอดภัยกรณีน้ำเต็มป่อ 3 ภายในป่อ



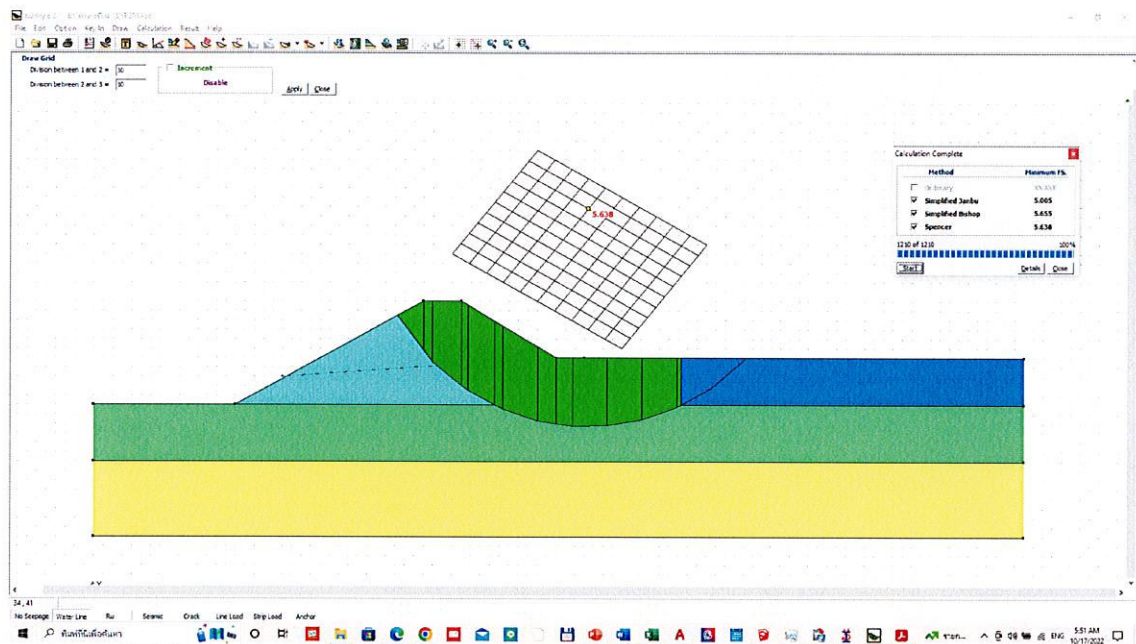
ค่าความปลอดภัยกรณีน้ำเต็มป่อภายในป่ออยู่ที่ $9.499 > 1.5$ ปลอดภัย

คำนวณค่าความปลอดภัย กรณีน้ำเต็มป่อ ภายนอกป่อ



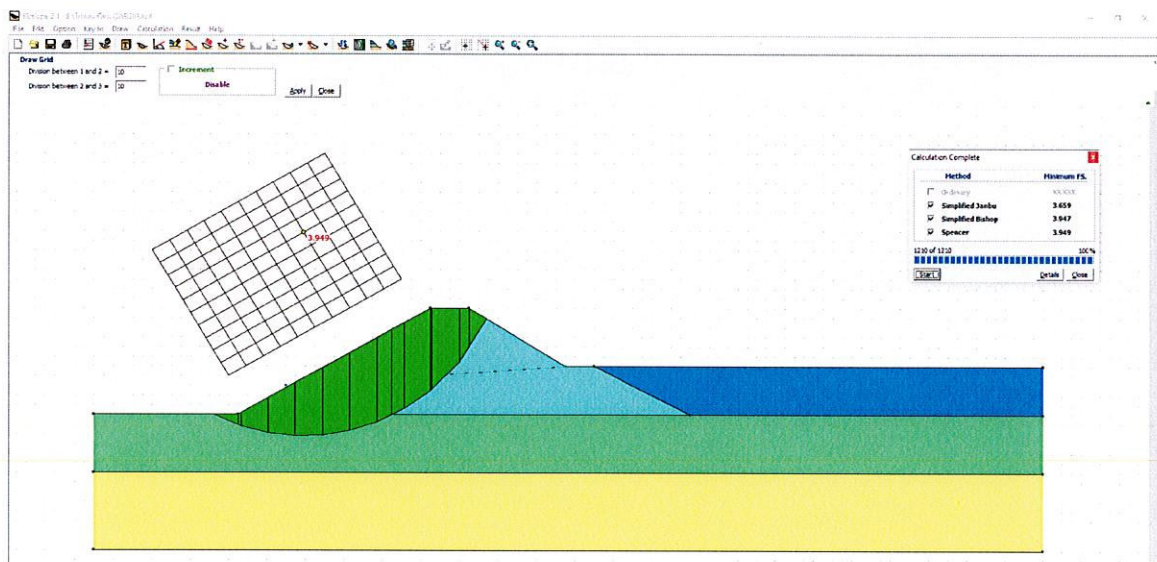
ค่าความปลอดภัยกรณีน้ำเต็มป่อภายนอกป่ออยู่ที่ $3.915 > 1.5$ ปลอดภัย

คำนวณค่าความปลอดภัย กรณีน้ำในบ่อลดลง ด้านภายในบ่อ

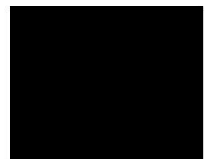


ค่าความปลอดภัยกรณีน้ำลดระดับลง บ่อภายนอกบ่ออยู่ที่ $5.638 > 1.5$ ปลอดภัย

คำนวณค่าความปลอดภัย กรณีน้ำในบ่อลดลง ด้านภายนอกบ่อ

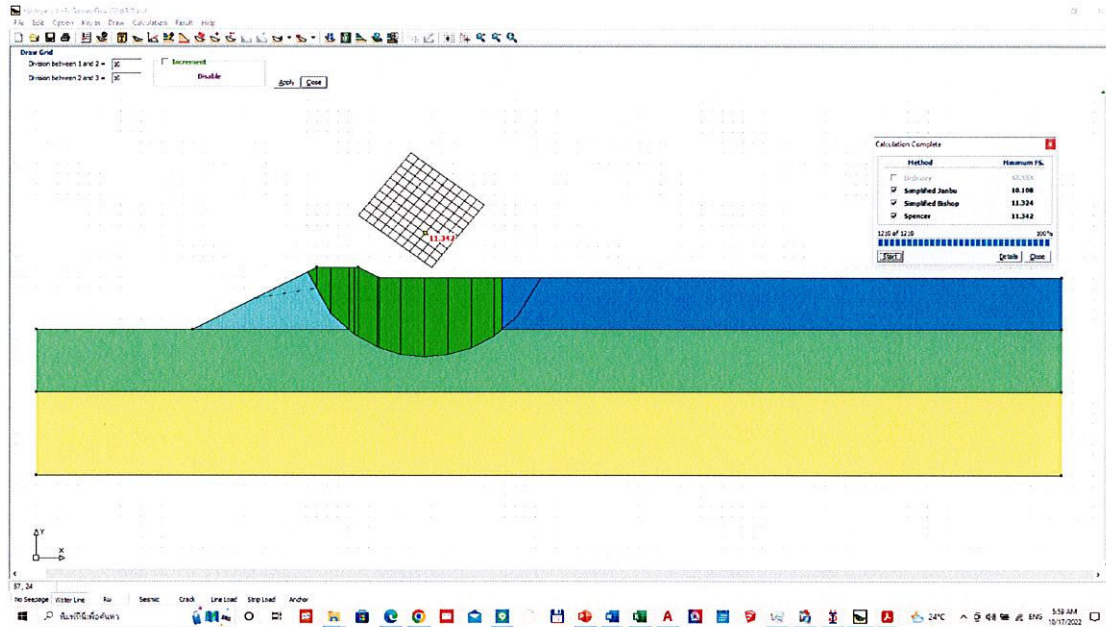


ค่าความปลอดภัยกรณีน้ำลดระดับลง บ่อภายนอกบ่ออยู่ที่ $3.949 > 1.5$ ปลอดภัย



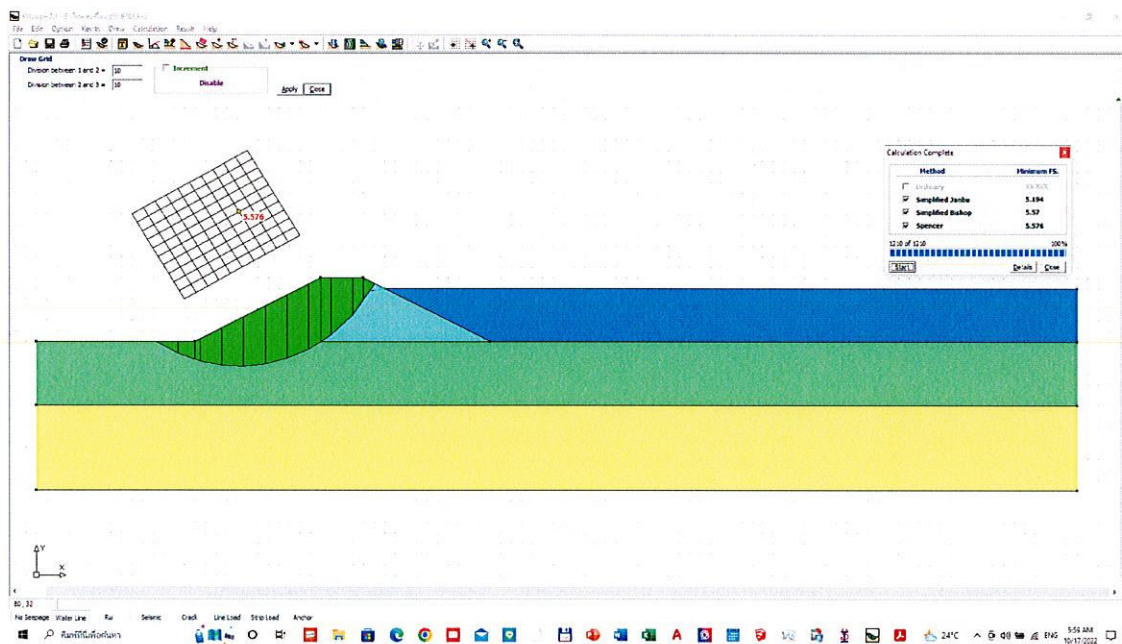
รายการคำนวณค่าความปลอดภัยของ ป่อหนึ่งน้ำหมายเลข 4

คำนวณค่าความปลอดภัยกรณีน้ำเต็มป่อ 4 ภายในป่อ



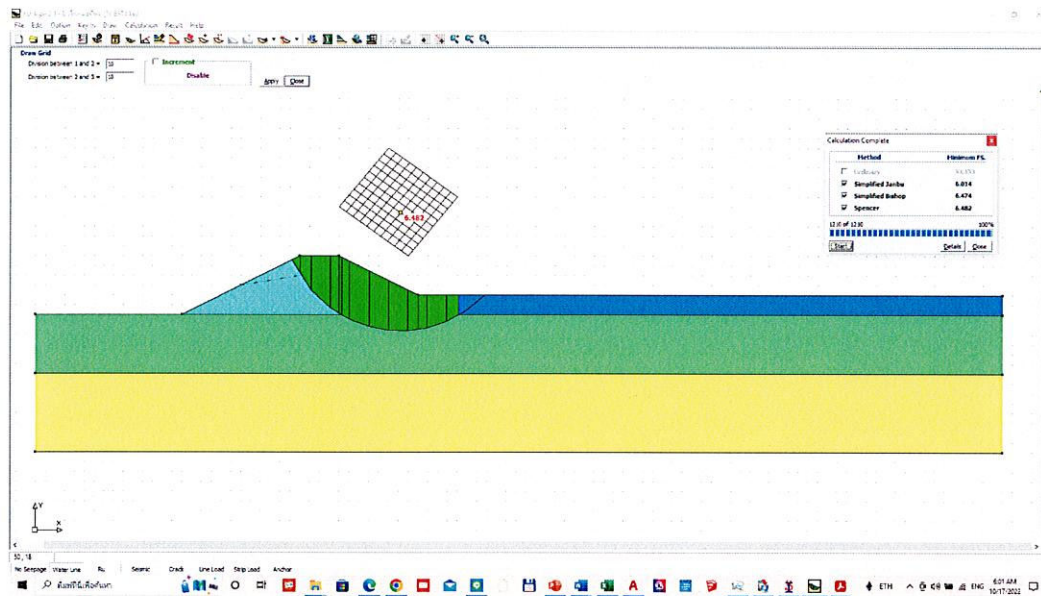
ค่าความปลอดภัยอยู่ที่ $13.434 > 1.5$ ปลอดภัย

คำนวณค่าความปลอดภัยกรณีน้ำเต็มป่อ 4 ภายนอกป่อ



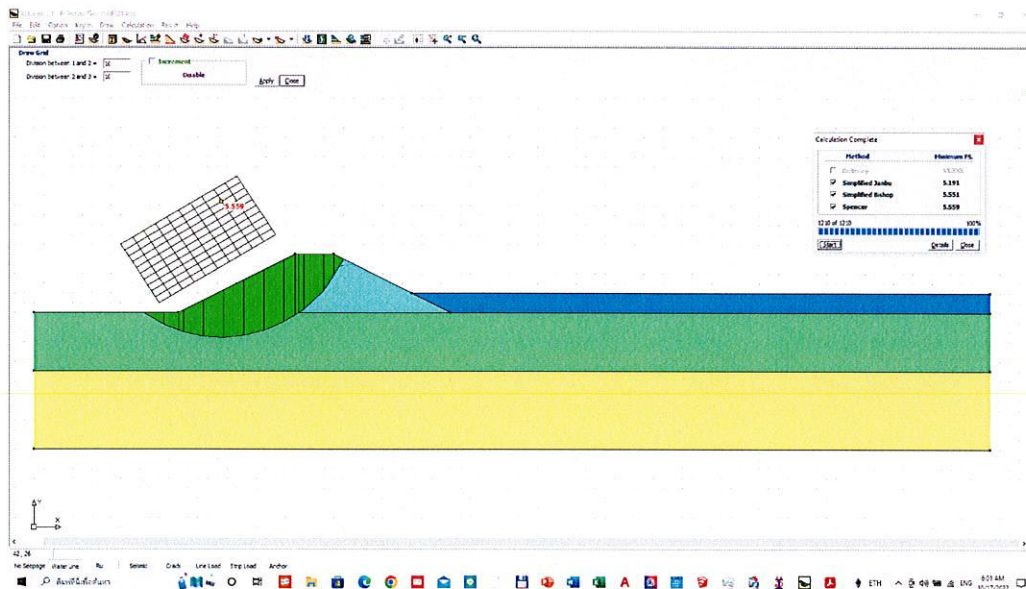
ค่าความปลอดภัยอยู่ที่ $5.576 > 1.5$ ปลอดภัย

คำนวณค่าความปลอดภัยกรณีน้ำลดระดับลง บ่อ 4 ภายในบ่อ



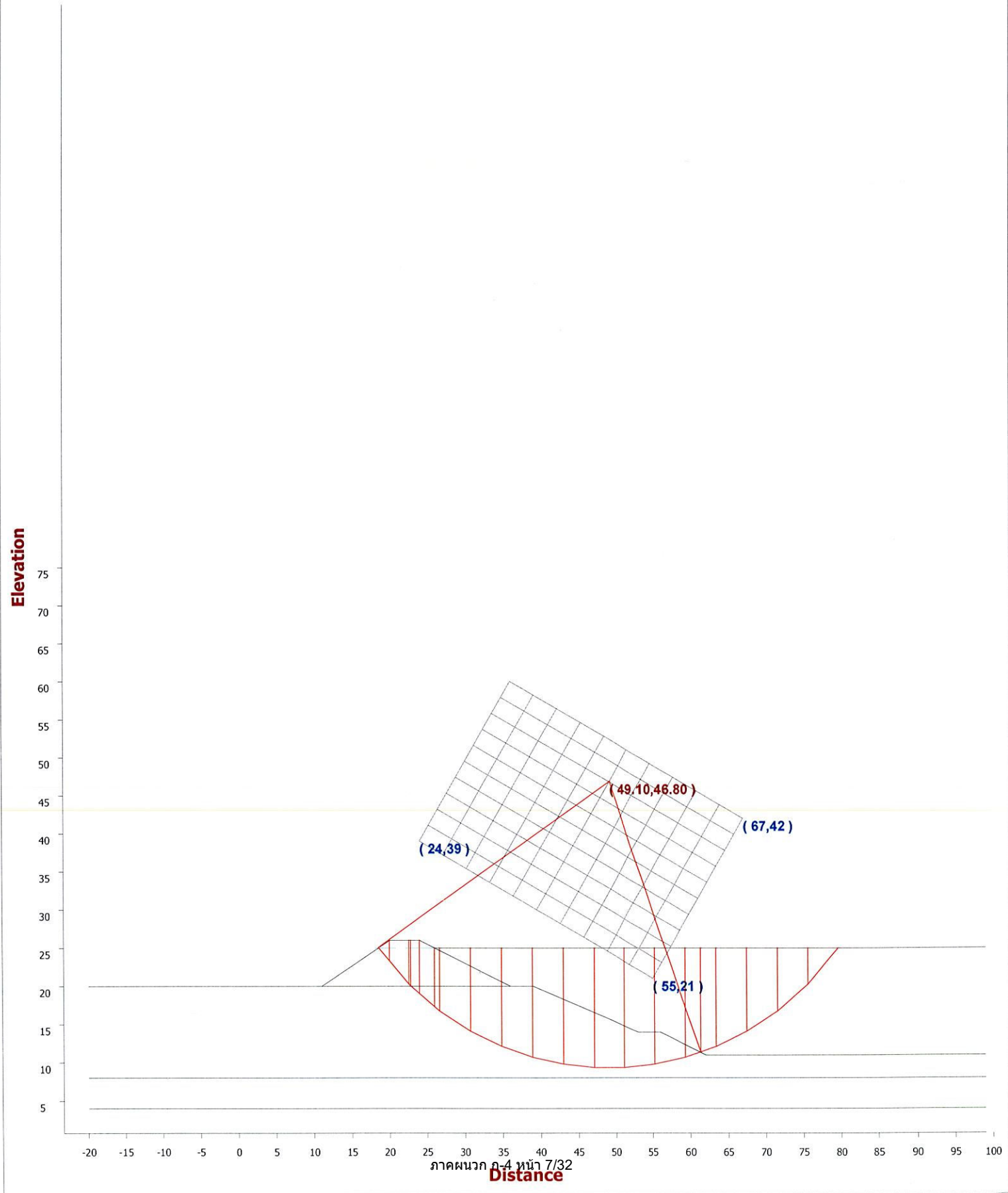
ค่าความปลอดภัยอยู่ที่ $6.482 > 1.5$ ปลอดภัย

คำนวณค่าความปลอดภัยกรณีน้ำลดระดับลง บ่อ 4 ภายนอกบ่อ



ค่าความปลอดภัยอยู่ที่ $5.539 > 1.5$ ปลอดภัย

CPGC
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SIRIWAT JITTASILP
FS. by Ord / Jan / Bis / Spe
11.982/11.057/12.953/12.889



GERD

KUSlope Version 2.0

File Name : B1_01_01.ksd Time : 1:30:29 PM Date : 10/15/2022

PROJECT : CPGC

LOCATION : RAYONG

ENGINEER : SIRIWAT JITTASILP

SOIL PROPERTIES

No of Boundary Line = 5

Soil No.	Cohesion	Fric. Angle	Unit Weight
1	15.000	35.000	1.780
2	10.000	30.000	1.800
3	8.000	35.000	1.900
4	0.000	0.000	1.000
5	0.000	0.000	0.000

GEOMETRY

Line No.	Points No.	X Coord.	Y Coord.
1	1	-20.000	4.000
1	2	99.000	4.000

2	1	-20.000	8.000
2	2	99.000	8.000

3	1	11.000	20.000
3	2	36.000	20.000

4	1	26.000	25.000
4	2	36.000	20.000
4	3	39.000	20.000
4	4	53.000	14.000
4	5	56.000	14.000
4	6	62.000	11.000
4	7	99.000	11.000

5	1	-20.000	20.000
5	2	11.000	20.000
5	3	20.000	26.000
5	4	24.000	26.000
5	5	26.000	25.000
5	6	99.000	25.000

BOTTOM LINE

Bottom Line No. = 1

SEEPAGE CONDITION : Use Phreatic Surface

Unit Weight of Water = 1.000

No Point of Water Table = 2

Point No.	X Coord.	Y Coord.
1	26.000	25.000
2	18.000	25.000

LOAD EFFECT

SEARCH CONDITION

Passing Criteria = 0.01000

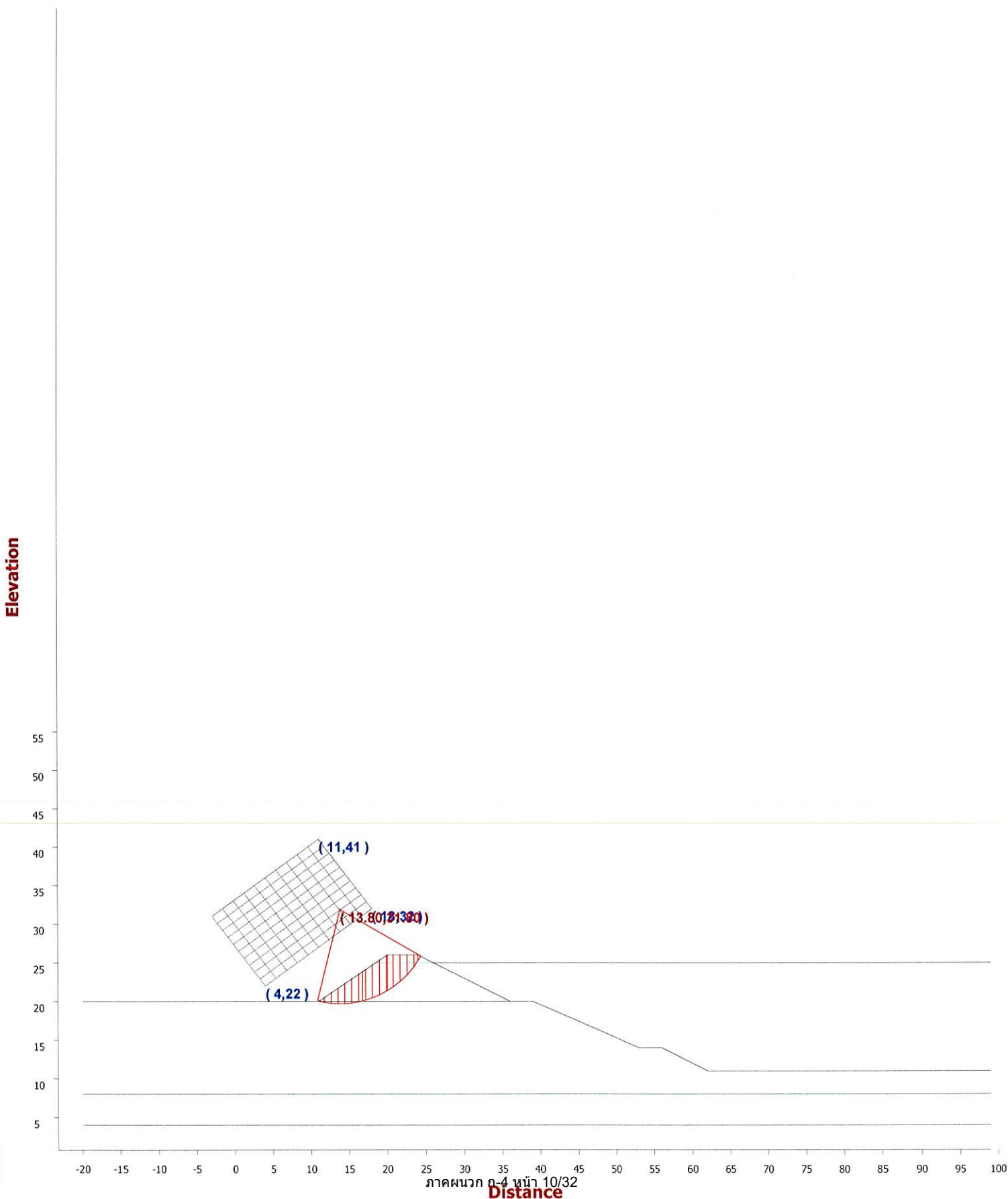
Circular Search : by Grid

No of Circle = 20
No of Slice = 15
Min Depth of Tallest Slice = 1.000
No of Add Radii = 3
Point 1 Coord.X = 24.000 Point 1 Coord.Y = 39.000
Point 2 Coord.X = 55.000 Point 2 Coord.Y = 21.000
Point 3 Coord.X = 67.000 Point 3 Coord.Y = 42.000
No of Divisions Between Point 1 and 2 = 10
No of Divisions Between Point 2 and 3 = 10

Non-Circular Search : by Random

No of Slice = 10
Min Depth of Tallest Slice = 0.000
No. of Direction = 8
Moving Length = 0.000
Divide Step = 3
X Axis = 0.000 Y Axis = 0.000
| Point No. | X Coord. | Y Coord. |

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FS. by Ord / Jan / Bis / Spe
6.737/6.500/6.883/6.870



GERD

KUslope Version 2.0

File Name : B1_01_02.ksd Time : 1:33:23 PM Date : 10/15/2022

PROJECT : CPGC

LOCATION : RAYONG

ENGINEER : SIRIWAT JITTASILP

SOIL PROPERTIES

No of Boundary Line = 5

Soil No.	Cohesion	Fric. Angle	Unit Weight
1	15.000	35.000	1.780
2	10.000	30.000	1.800
3	8.000	35.000	1.900
4	0.000	0.000	1.000
5	0.000	0.000	0.000

GEOMETRY

Line No.	Points No.	X Coord.	Y Coord.
1	1	-20.000	4.000
1	2	99.000	4.000

2	1	-20.000	8.000
2	2	99.000	8.000

3	1	11.000	20.000
3	2	36.000	20.000

4	1	26.000	25.000
4	2	36.000	20.000
4	3	39.000	20.000
4	4	53.000	14.000
4	5	56.000	14.000
4	6	62.000	11.000
4	7	99.000	11.000

5	1	-20.000	20.000
5	2	11.000	20.000
5	3	20.000	26.000
5	4	24.000	26.000
5	5	26.000	25.000
5	6	99.000	25.000

BOTTOM LINE

Bottom Line No. = 1

SEEPAGE CONDITION : Use Phreatic Surface

Unit Weight of Water = 1.000

No Point of Water Table = 2

Point No.	X Coord.	Y Coord.
1	26.000	25.000
2	18.000	25.000

LOAD EFFECT

SEARCH CONDITION

Passing Criteria = 0.01000

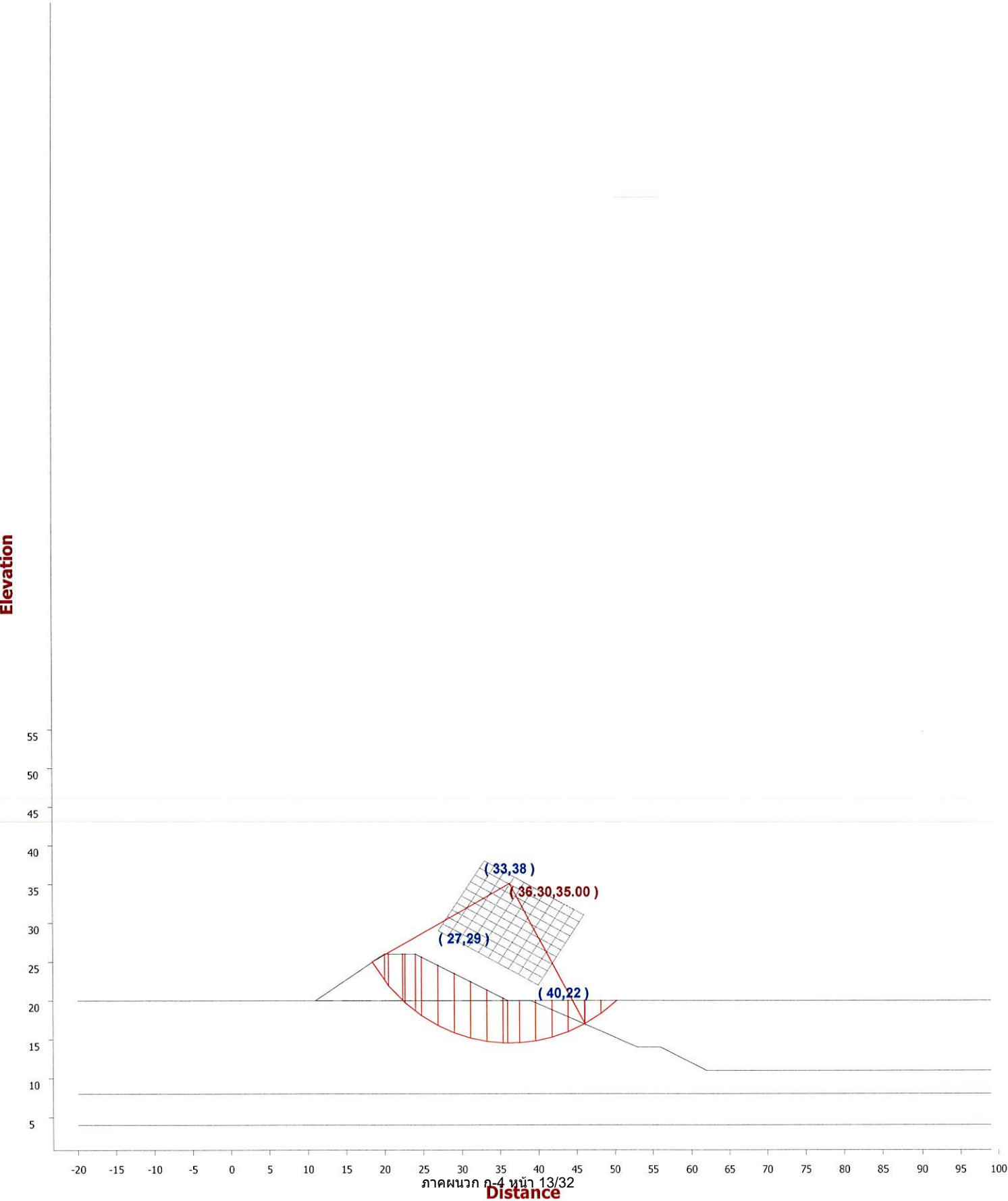
Circular Search : by Grid

No of Circle = 20
No of Slice = 15
Min Depth of Tallest Slice = 1.000
No of Add Radii = 3
Point 1 Coord.X = 4.000 Point 1 Coord.Y = 22.000
Point 2 Coord.X = 18.000 Point 2 Coord.Y = 32.000
Point 3 Coord.X = 11.000 Point 3 Coord.Y = 41.000
No of Divisions Between Point 1 and 2 = 10
No of Divisions Between Point 2 and 3 = 10

Non-Circular Search : by Random

No of Slice = 10
Min Depth of Tallest Slice = 0.000
No. of Direction = 8
Moving Length = 0.000
Divide Step = 3
X Axis = 0.000 Y Axis = 0.000
| Point No. | X Coord. | Y Coord. |

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RAYOUNG
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6.888/6.357/7.307/7.288



GERD

KUslope Version 2.0

File Name : B1_02_01.ksd Time : 1:35:15 PM Date : 10/15/2022

PROJECT : CPGC

LOCATION : RAYOUNG

ENGINEER : SIRIWAT JITTASILP

SOIL PROPERTIES

No of Boundary Line = 5

Soil No.	Cohesion	Fric. Angle	Unit Weight
1	15.000	35.000	1.780
2	10.000	30.000	1.800
3	8.000	35.000	1.900
4	0.000	0.000	1.000
5	0.000	0.000	0.000

GEOMETRY

Line No.	Points No.	X Coord.	Y Coord.
1	1	-20.000	4.000
1	2	99.000	4.000

2	1	-20.000	8.000
2	2	99.000	8.000

3	1	11.000	20.000
3	2	36.000	20.000

4	1	36.000	20.000
4	2	36.000	20.000
4	3	39.000	20.000
4	4	53.000	14.000
4	5	56.000	14.000
4	6	62.000	11.000
4	7	99.000	11.000

5	1	-20.000	20.000
5	2	11.000	20.000
5	3	20.000	26.000
5	4	24.000	26.000
5	5	36.000	20.000
5	6	99.000	20.000

BOTTOM LINE

Bottom Line No. = 1

SEEPAGE CONDITION : Use Phreatic Surface

Unit Weight of Water = 1.000

No Point of Water Table = 2

Point No.	X Coord.	Y Coord.
1	39.000	20.000
2	11.000	20.000

LOAD EFFECT

SEARCH CONDITION

Passing Criteria = 0.01000

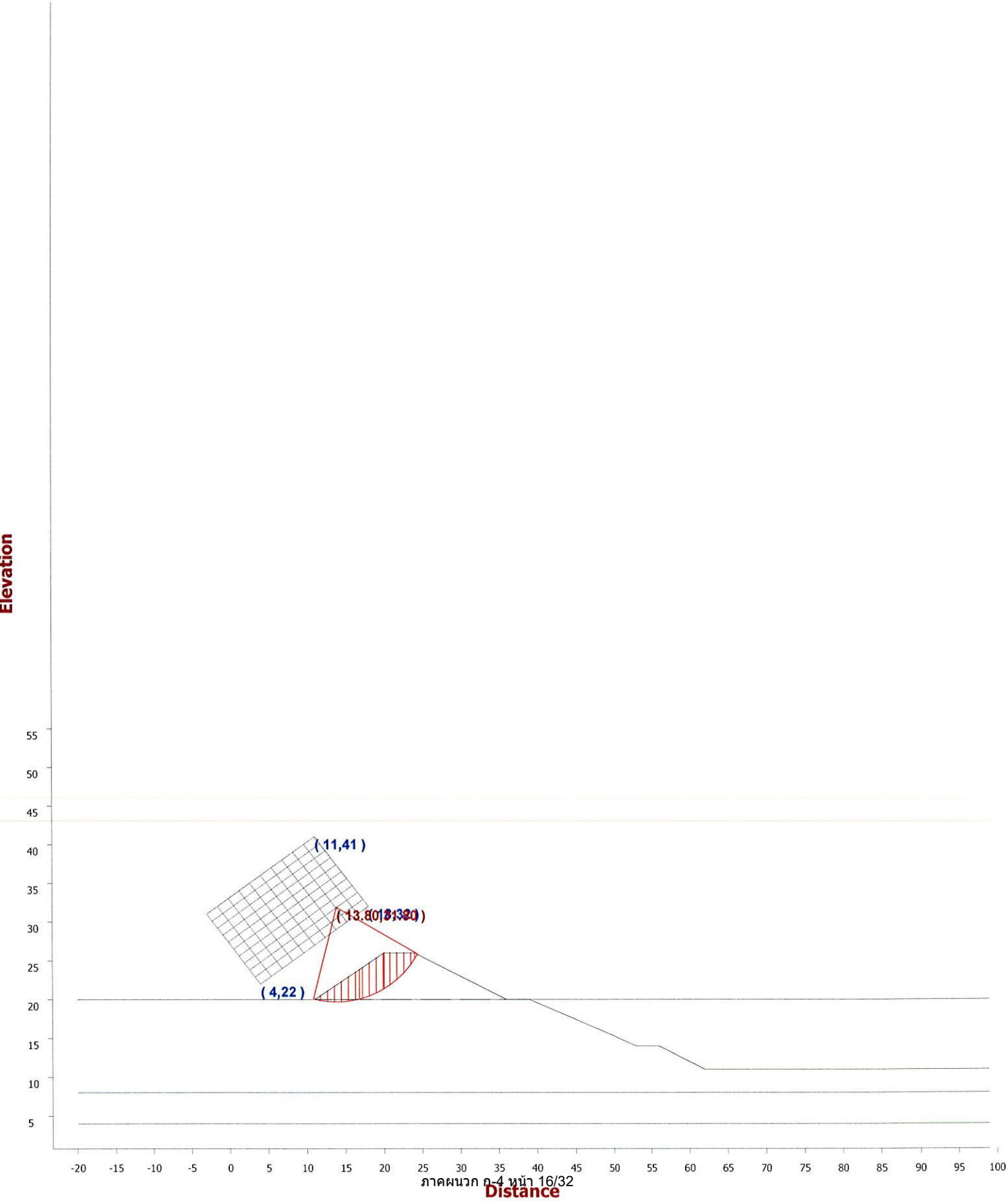
Circular Search : by Grid

No of Circle = 20
No of Slice = 15
Min Depth of Tallest Slice = 1.000
No of Add Radii = 3
Point 1 Coord.X = 40.000 Point 1 Coord.Y = 22.000
Point 2 Coord.X = 27.000 Point 2 Coord.Y = 29.000
Point 3 Coord.X = 33.000 Point 3 Coord.Y = 38.000
No of Divisions Between Point 1 and 2 = 10
No of Divisions Between Point 2 and 3 = 10

Non-Circular Search : by Random

No of Slice = 10
Min Depth of Tallest Slice = 0.000
No. of Direction = 8
Moving Length = 0.000
Divide Step = 3
X Axis = 0.000 Y Axis = 0.000
| Point No. | X Coord. | Y Coord. |

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6.737/6.500/6.883/6.870



GERD

KUSlope Version 2.0

File Name : B1_02_02.ksd Time : 1:36:28 PM Date : 10/15/2022

PROJECT : CPGC
LOCATION : RAYONG
ENGINEER : SIRIWAT JITTASILP

SOIL PROPERTIES

No of Boundary Line = 5

Soil No.	Cohesion	Fric. Angle	Unit Weight
1	15.000	35.000	1.780
2	10.000	30.000	1.800
3	8.000	35.000	1.900
4	0.000	0.000	1.000
5	0.000	0.000	0.000

GEOMETRY

Line No.	Points No.	X Coord.	Y Coord.
1	1	-20.000	4.000
1	2	99.000	4.000
2	1	-20.000	8.000
2	2	99.000	8.000
3	1	11.000	20.000
3	2	36.000	20.000
4	1	36.000	20.000
4	2	36.000	20.000
4	3	39.000	20.000
4	4	53.000	14.000
4	5	56.000	14.000
4	6	62.000	11.000
4	7	99.000	11.000
5	1	-20.000	20.000
5	2	11.000	20.000
5	3	20.000	26.000
5	4	24.000	26.000
5	5	36.000	20.000
5	6	99.000	20.000

BOTTOM LINE

Bottom Line No. = 1

SEEPAGE CONDITION : Use Phreatic Surface

Unit Weight of Water = 1.000

No Point of Water Table = 2

Point No.	X Coord.	Y Coord.
1	39.000	20.000
2	11.000	20.000

LOAD EFFECT

SEARCH CONDITION

Passing Criteria = 0.01000

Circular Search : by Grid

No of Circle = 20
No of Slice = 15
Min Depth of Tallest Slice = 1.000
No of Add Radii = 3
Point 1 Coord.X = 4.000 Point 1 Coord.Y = 22.000
Point 2 Coord.X = 18.000 Point 2 Coord.Y = 32.000
Point 3 Coord.X = 11.000 Point 3 Coord.Y = 41.000
No of Divisions Between Point 1 and 2 = 10
No of Divisions Between Point 2 and 3 = 10

Non-Circular Search : by Random

No of Slice = 10
Min Depth of Tallest Slice = 0.000
No. of Direction = 8
Moving Length = 0.000
Divide Step = 3
X Axis = 0.000 Y Axis = 0.000
| Point No. | X Coord. | Y Coord. |

GERD

KUslope Version 2.0

File Name : B1_02_02.ksd Time : 1:37:03 PM Date : 10/15/2022

PROJECT : CPGC

LOCATION : RAYONG

ENGINEER : SIRIWAT JITTASILP

SOIL PROPERTIES

No of Boundary Line = 5

Soil No.	Cohesion	Fric. Angle	Unit Weight
1	15.000	35.000	1.780
2	10.000	30.000	1.800
3	8.000	35.000	1.900
4	0.000	0.000	1.000
5	0.000	0.000	0.000

GEOMETRY

Line No.	Points No.	X Coord.	Y Coord.
1	1	-20.000	4.000
1	2	99.000	4.000

2	1	-20.000	8.000
2	2	99.000	8.000

3	1	11.000	20.000
3	2	36.000	20.000

4	1	36.000	20.000
4	2	36.000	20.000
4	3	39.000	20.000
4	4	53.000	14.000
4	5	56.000	14.000
4	6	62.000	11.000
4	7	99.000	11.000

5	1	-20.000	20.000
5	2	11.000	20.000
5	3	20.000	26.000
5	4	24.000	26.000
5	5	36.000	20.000
5	6	99.000	20.000

BOTTOM LINE

Bottom Line No. = 1

SEEPAGE CONDITION : Use Phreatic Surface

Unit Weight of Water = 1.000

No Point of Water Table = 2

Point No.	X Coord.	Y Coord.
1	39.000	20.000
2	11.000	20.000

LOAD EFFECT

SEARCH CONDITION

Passing Criteria = 0.01000

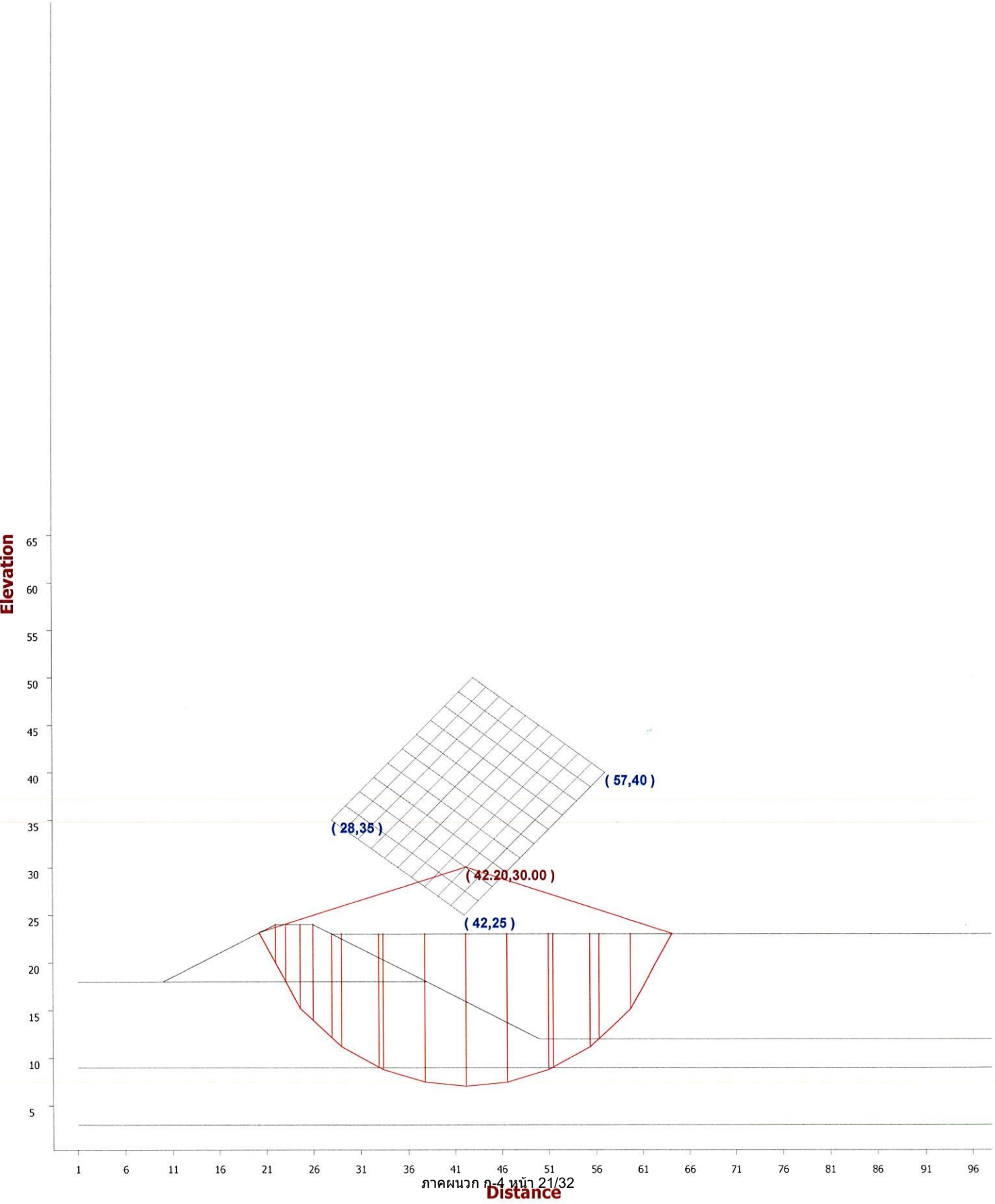
Circular Search : by Grid

No of Circle = 20
No of Slice = 15
Min Depth of Tallest Slice = 1.000
No of Add Radii = 3
Point 1 Coord.X = 4.000 Point 1 Coord.Y = 22.000
Point 2 Coord.X = 18.000 Point 2 Coord.Y = 32.000
Point 3 Coord.X = 11.000 Point 3 Coord.Y = 41.000
No of Divisions Between Point 1 and 2 = 10
No of Divisions Between Point 2 and 3 = 10

Non-Circular Search : by Random

No of Slice = 10
Min Depth of Tallest Slice = 0.000
No. of Direction = 8
Moving Length = 0.000
Divide Step = 3
X Axis = 0.000 Y Axis = 0.000
| Point No. | X Coord. | Y Coord. |

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8.138/8.460/1.006/9.499



GERD

KUSlope Version 2.0

File Name : B0201.ksd Time : 2:02:26 PM Date : 10/15/2022

PROJECT : CPGC

LOCATION : RAYONG

ENGINEER : SIRIWAT JITTASILP

SOIL PROPERTIES

No of Boundary Line = 5

Soil No.	Cohesion	Fric. Angle	Unit Weight
1	2.000	30.000	1.800
2	8.000	35.000	1.850
3	5.000	35.000	1.900
4	0.000	0.000	1.000
5	0.000	0.000	0.000

GEOMETRY

Line No.	Points No.	X Coord.	Y Coord.
1	1	1.000	3.000
1	2	98.000	3.000

2	1	1.000	9.000
2	2	98.000	9.000

3	1	1.000	18.000
3	2	10.000	18.000
3	3	38.000	18.000

4	1	28.000	23.000
4	2	38.000	18.000
4	3	50.000	12.000
4	4	98.000	12.000

5	1	1.000	18.000
5	2	10.000	18.000
5	3	22.000	24.000
5	4	26.000	24.000
5	5	28.000	23.000
5	6	98.000	23.000

BOTTOM LINE

Bottom Line No. = 1

SEEPAGE CONDITION : No Seepage

LOAD EFFECT

SEARCH CONDITION

Passing Criteria = 0.01000

Circular Search : by Grid

No of Circle = 10

No of Slice = 10

Min Depth of Tallest Slice = 1.000

No of Add Radii = 0

Point 1 Coord.X = 28.000 Point 1 Coord.Y = 35.000

Point 2 Coord.X = 42.000 Point 2 Coord.Y = 25.000

Point 3 Coord.X = 57.000 Point 3 Coord.Y = 40.000

No of Divisions Between Point 1 and 2 = 10
No of Divisions Between Point 2 and 3 = 10

Non-Circular Search : by Random

No of Slice = 10

Min Depth of Tallest Slice = 0.000

No. of Direction = 8

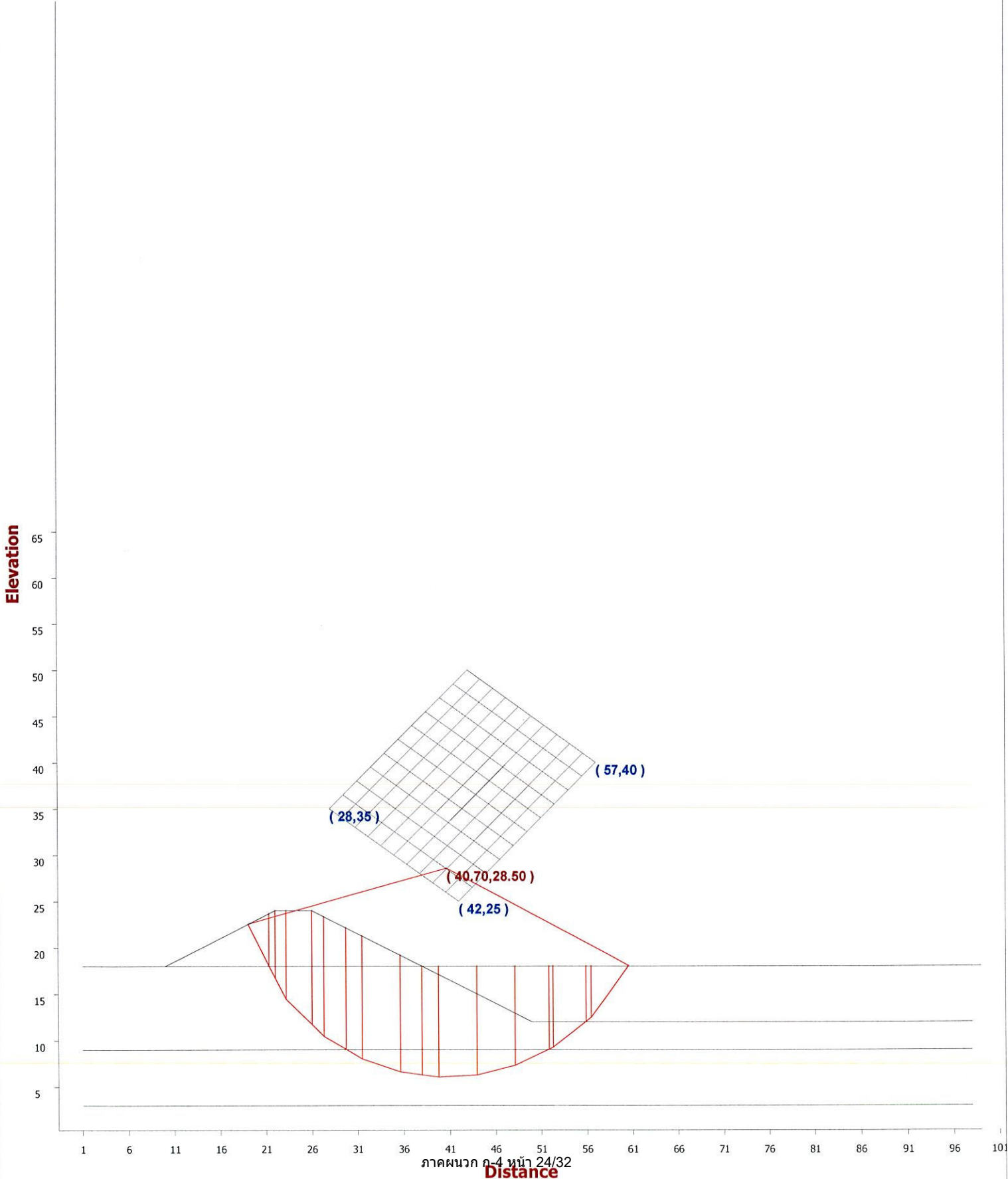
Moving Length = 0.000

Divide Step = 3

X Axis = 0.000 Y Axis = 0.000

	Point No.		X Coord.		Y Coord.	
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New Project
New Location
New Engineer
FS. by Ord / Jan / Bis / Spe
4.847/4.777/5.573/5.571



GERD

KUslope Version 2.0

File Name : B0201.ksd Time : 2:04:55 PM Date : 10/15/2022

PROJECT : New Project
LOCATION : New Location
ENGINEER : New Engineer

SOIL PROPERTIES

No of Boundary Line = 5

Soil No.	Cohesion	Fric. Angle	Unit Weight
1	2.000	30.000	1.800
2	8.000	35.000	1.850
3	5.000	35.000	1.900
4	0.000	0.000	1.000
5	0.000	0.000	0.000

GEOMETRY

Line No.	Points No.	X Coord.	Y Coord.
1	1	1.000	3.000
1	2	98.000	3.000

2	1	1.000	9.000
2	2	98.000	9.000

3	1	1.000	18.000
3	2	10.000	18.000
3	3	38.000	18.000

4	1	38.000	18.000
4	2	38.000	18.000
4	3	50.000	12.000
4	4	98.000	12.000

5	1	1.000	18.000
5	2	10.000	18.000
5	3	22.000	24.000
5	4	26.000	24.000
5	5	38.000	18.000
5	6	99.000	18.000

BOTTOM LINE

Bottom Line No. = 1

SEEPAGE CONDITION : No Seepage

LOAD EFFECT

SEARCH CONDITION

Passing Criteria = 0.01000

Circular Search : by Grid

No of Circle = 10

No of Slice = 10

Min Depth of Tallest Slice = 1.000

No of Add Radii = 0

Point 1 Coord.X = 28.000 Point 1 Coord.Y = 35.000

Point 2 Coord.X = 42.000 Point 2 Coord.Y = 25.000

Point 3 Coord.X = 57.000 Point 3 Coord.Y = 40.000

No of Divisions Between Point 1 and 2 = 10
No of Divisions Between Point 2 and 3 = 10

Non-Circular Search : by Random

No of Slice = 10

Min Depth of Tallest Slice = 0.000

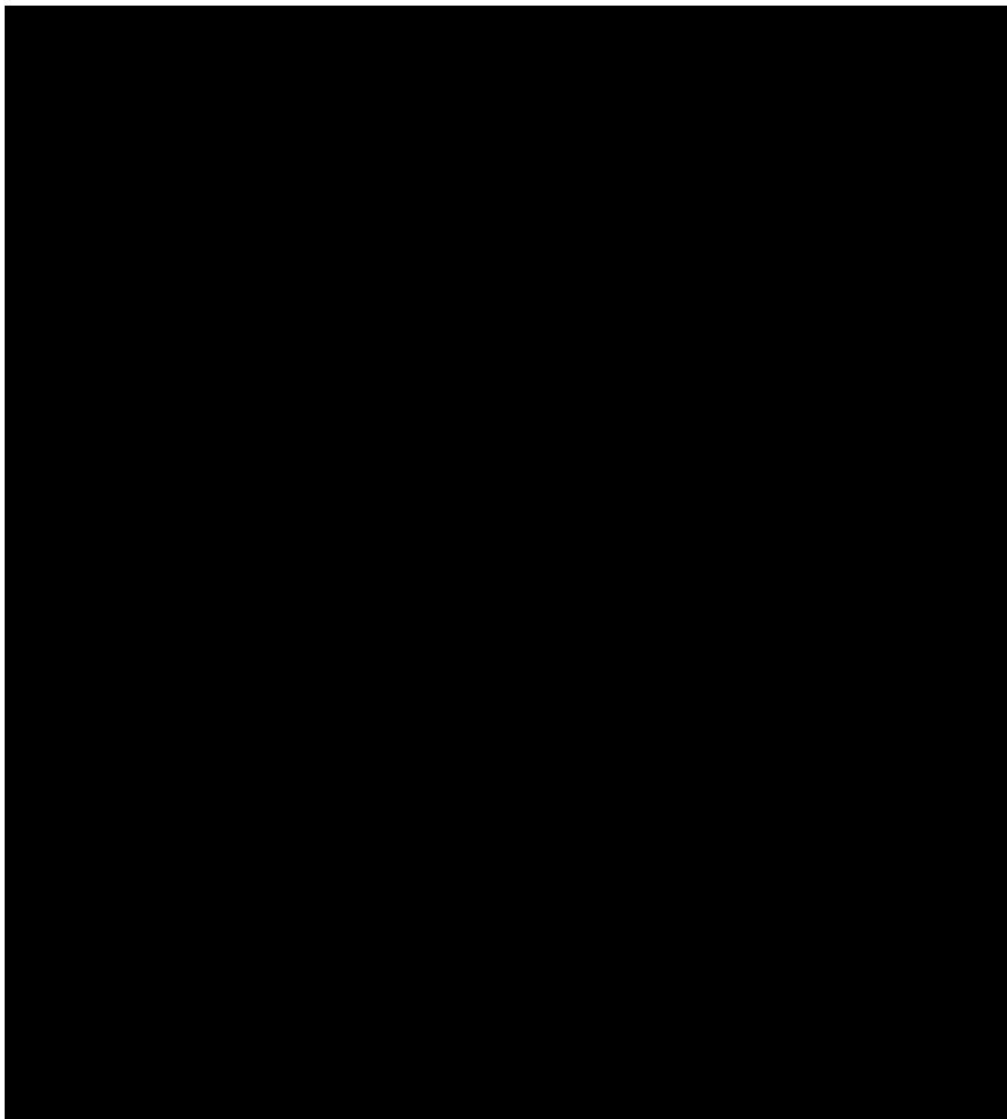
No. of Direction = 8

Moving Length = 0.000

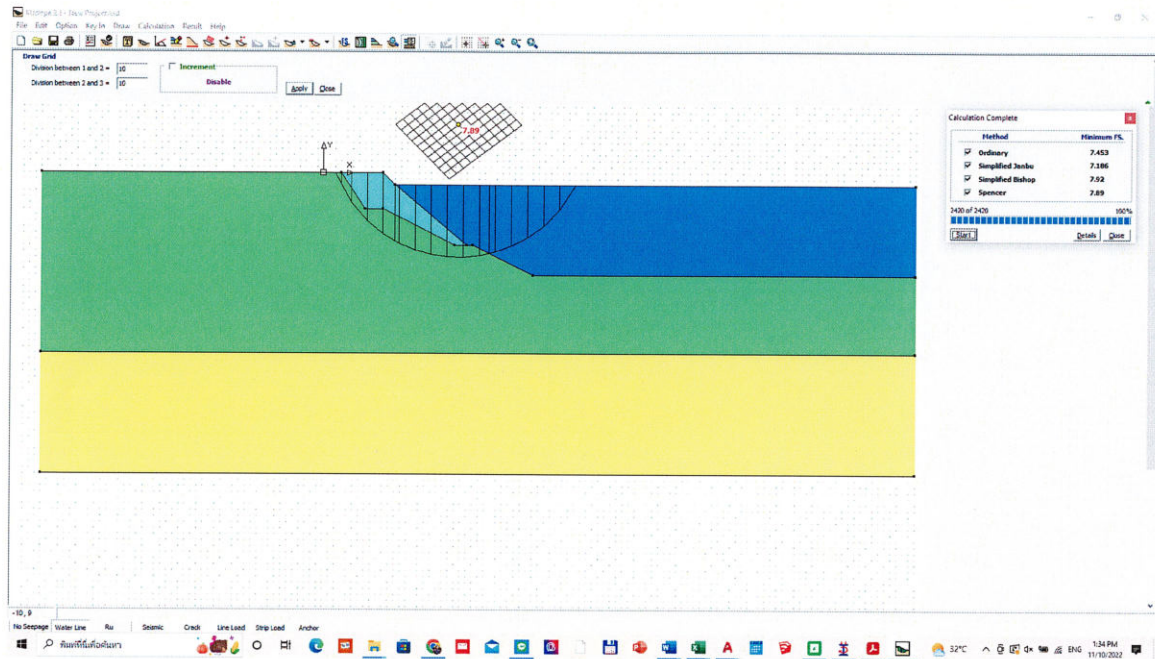
Divide Step = 3

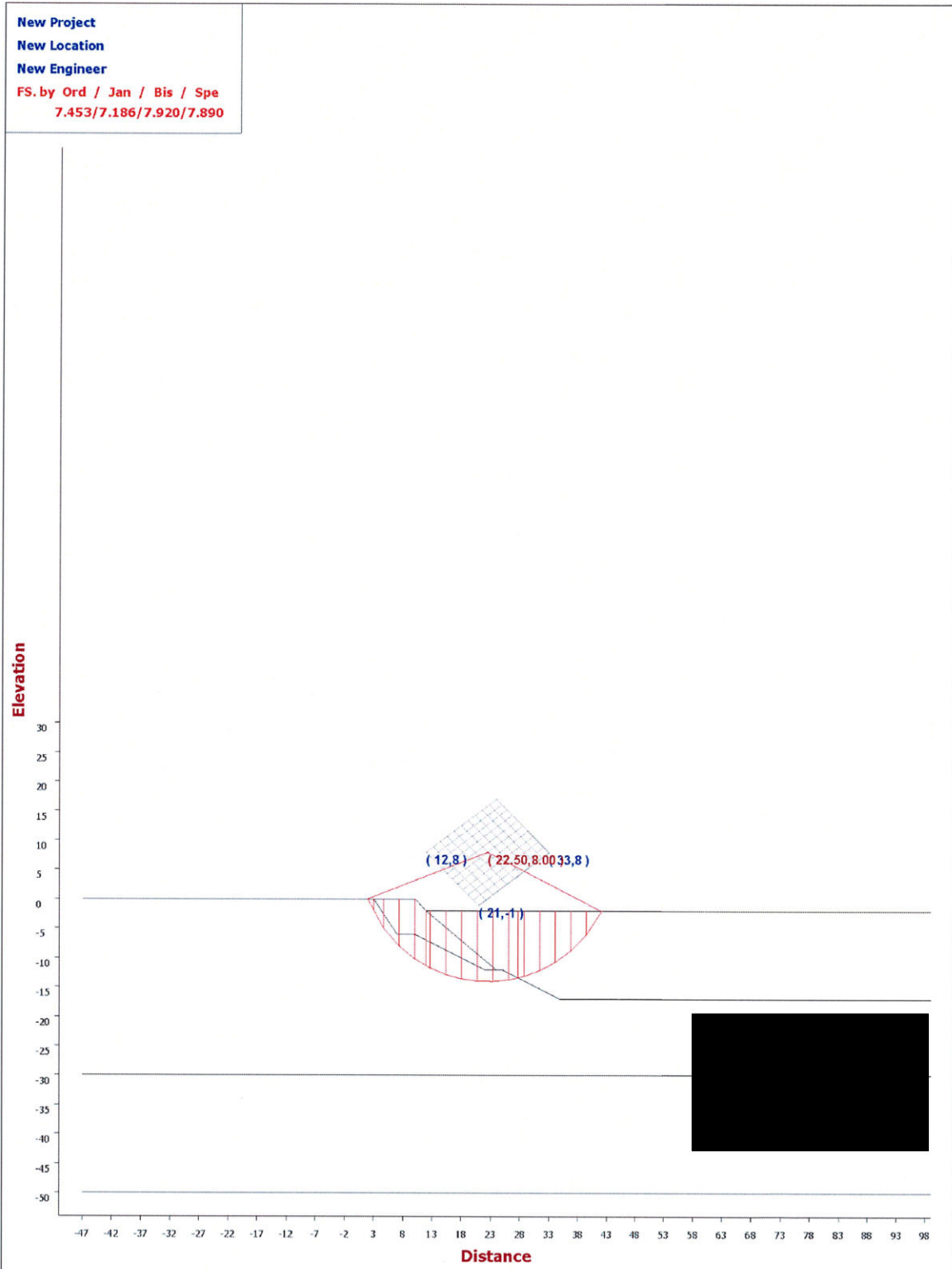
X Axis = 0.000 Y Axis = 0.000

	Point No.		X Coord.		Y Coord.	
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รายการคำนวณเสถียรภาพความแข็งแรงบ่อหนองน้ำฝน 2





GERD

KUSlope Version 2.0

File Name : kk3.ksd Time : 1:40:01 PM Date : 11/10/2022

PROJECT : New Project
LOCATION : New Location
ENGINEER : New Engineer

SOIL PROPERTIES

No of Boundary Line = 5

Soil No.	Cohesion	Fric. Angle	Unit Weight
1	5.000	30.000	1.700
2	10.000	25.000	1.650
3	25.000	10.000	1.900
4	0.000	0.000	1.000
5	0.000	0.000	0.000

GEOMETRY

Line No.	Points No.	X Coord.	Y Coord.
1	1	-47.000	-50.000
1	2	99.000	-50.000
2	1	-47.000	-30.000
2	2	99.000	-30.000
3	1	3.000	0.000
3	2	7.000	-6.000
3	3	10.000	-6.000
3	4	22.000	-12.000
3	5	24.000	-12.000
4	1	12.000	-2.000
4	2	24.000	-12.000
4	3	25.000	-12.000
4	4	35.000	-17.000
4	5	99.000	-17.000
5	1	-47.000	0.000
5	2	3.000	0.000
5	3	10.000	0.000
5	4	12.000	-2.000
5	5	99.000	-2.000

BOTTOM LINE

Bottom Line No. = 1

SEEPAGE CONDITION : No Seepage

LOAD EFFECT

SEARCH CONDITION

Passing Criteria = 0.01000

Circular Search : by Grid

No of Circle = 20

No of Slice = 15

Min Depth of Tallest Slice = 1.000

No of Add Radii = 3

Point 1 Coord.X = 12.000 Point 1 Coord.Y = 8.000

Point 2 Coord.X = 21.000 Point 2 Coord.Y = -1.000
Point 3 Coord.X = 33.000 Point 3 Coord.Y = 8.000
No of Divisions Between Point 1 and 2 = 10
No of Divisions Between Point 2 and 3 = 10

Non-Circular Search : by Random

No of Slice = 10

Min Depth of Tallest Slice = 0.000

No. of Direction = 8

Moving Length = 0.000

Divide Step = 3

X Axis = 0.000 Y Axis = 0.000

| Point No. | X Coord. | Y Coord. |

