

SURFACELUX SPORTS LIGHTING ENGINEERS

ALKRINGTON TENNIS COURTS 4-5

TENNIS

RUGBY

FOOTBALL

HOCKEY

ATHLETICS

GREYHOUND

SPEEDWAY

CYCLING

GOLF

BMX

COMPLETE TURNKEY PROJECT SERVICES

DESIGN | INSTALLATION | UPGRADING
ADDITIONS | MAINTENANCE | EST. 2005





Alkrington T C

2no Tennis Courts 7m BVP518 LO - LTA
Project code: 0400895626, D-534990
Date: 27-03-2024



The nominal values shown in this report are the result of precision calculations, based upon precisely positioned luminaires in a fixed relationship to each other and to the area under examination. In practice the values may vary due to tolerances on luminaires, luminaire positioning, reflection properties and electrical supply.

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CalcuLuX Area 7.9.0.0

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1. Project Description

1.1 Description

Courts 4 & 5 are new to lighting and therefore need to be approved by planning. This court uses 7m columns lit from sides Centre columns used for both Courts Fittings also use Internal Louvres (LO).

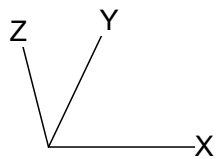
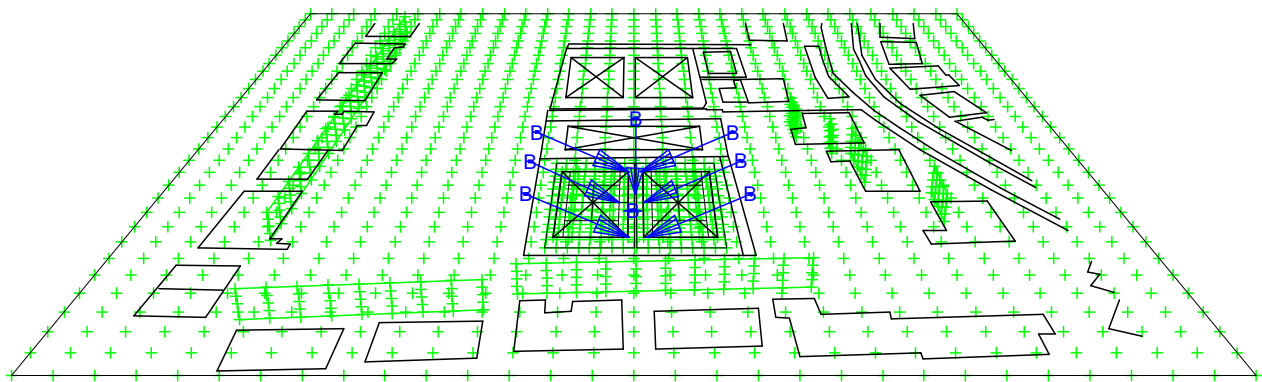
8 No BVP518 IN T45 1xLED1110-4S/740/740 E3/D4I A55-NMB LO

NMB optic is compromise for best spill and performance on court when using fittings with LO Louvre

Environmental Zone for spill is considered to be between E3 (10 lux) & E4 (25 lx

All except 1 house have Max Spill below 10 lux. Centre house south side is very has worst spill, where Max spill here is 3.9 lux Max

1.2 3-D Project Overview



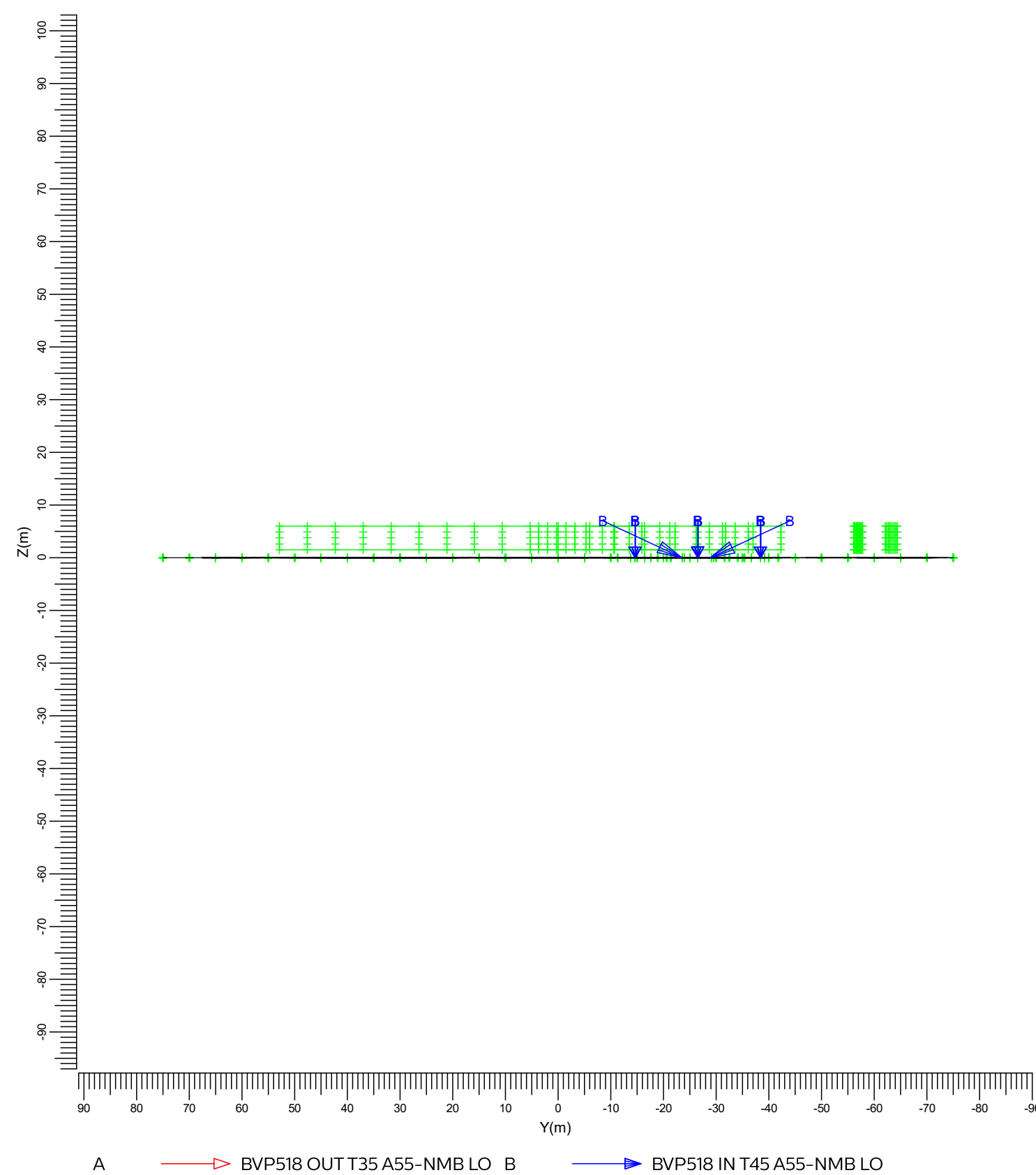
A  BVP518 OUT T35 A55-NMB LO B  BVP518 IN T45 A55-NMB LO

1.3 Top Project Overview



Scale
1:1000

1.4 Left Project Overview



Scale
1:1000

2. Summary

2.1 Project Luminaires

Code	Qty	Luminaire Type	Lamp Type	Power (W)	Flux (lm)
B	8	BVP518 IN T45 A55-NMB LO	1 * LED1110-4S/740	606.5	1 * 111000

The total installed power: 4.85 (kWatt)

Number of Luminaires Per Switching Mode:

Switching Mode	Luminaire Code	Power (kWatt)
	B	
Tennis Court 1	0	0.00
Tennis Court 2	0	0.00
Tennis Court 3	0	0.00
Tennis Court 4	5	3.03
Tennis Court 5	5	3.03
Spill Lighting	8	4.85

2.2 Calculation Results

Switching Modes:

Code	Switching Mode	Maintenance factor
1	Tennis Court 1	0.95
2	Tennis Court 2	0.95
3	Tennis Court 3	0.95
4	Tennis Court 4	0.95
5	Tennis Court 5	0.95
6	Spill Lighting	1.00

(II)luminance Calculations:

Calculation	Switching Mode	Type	Unit	Ave	Min	Max	Min/Ave	Min/Max
Tennis PPA 4	4	Surface Illuminance	lux	432	339	604	0.79	0.56
Tennis TPA 4	4	Surface Illuminance	lux	415	288	577	0.69	0.50
Tennis PPA 5	5	Surface Illuminance	lux	420	319	580	0.76	0.55
Tennis TPA 5	5	Surface Illuminance	lux	405	258	561	0.64	0.46
Ev Houses West	6	Surface Illuminance	lux			0.71		
Ev Houses S/W	6	Surface Illuminance	lux			0.56		
Ev Houses Sth Centre	6	Surface Illuminance	lux			3.82		
Ev East Top East	6	Surface Illuminance	lux			1.19		
Ev East Mid Hse out	6	Surface Illuminance	lux			1.47		
Ev East Mid Hse In	6	Surface Illuminance	lux			1.66		
Ev East Bot Hse	6	Surface Illuminance	lux			0.81		
Spill Lighting	6	Surface Illuminance	lux					

Obtrusive Light Calculations:

Switching Mode	ULR
----------------	-----

Switching Mode	ULR
1	0.00
2	0.00
3	0.00
4	0.00
5	0.00
6	0.00

3. Calculation Results

3.1 Tennis PPA 4: Graphical Table

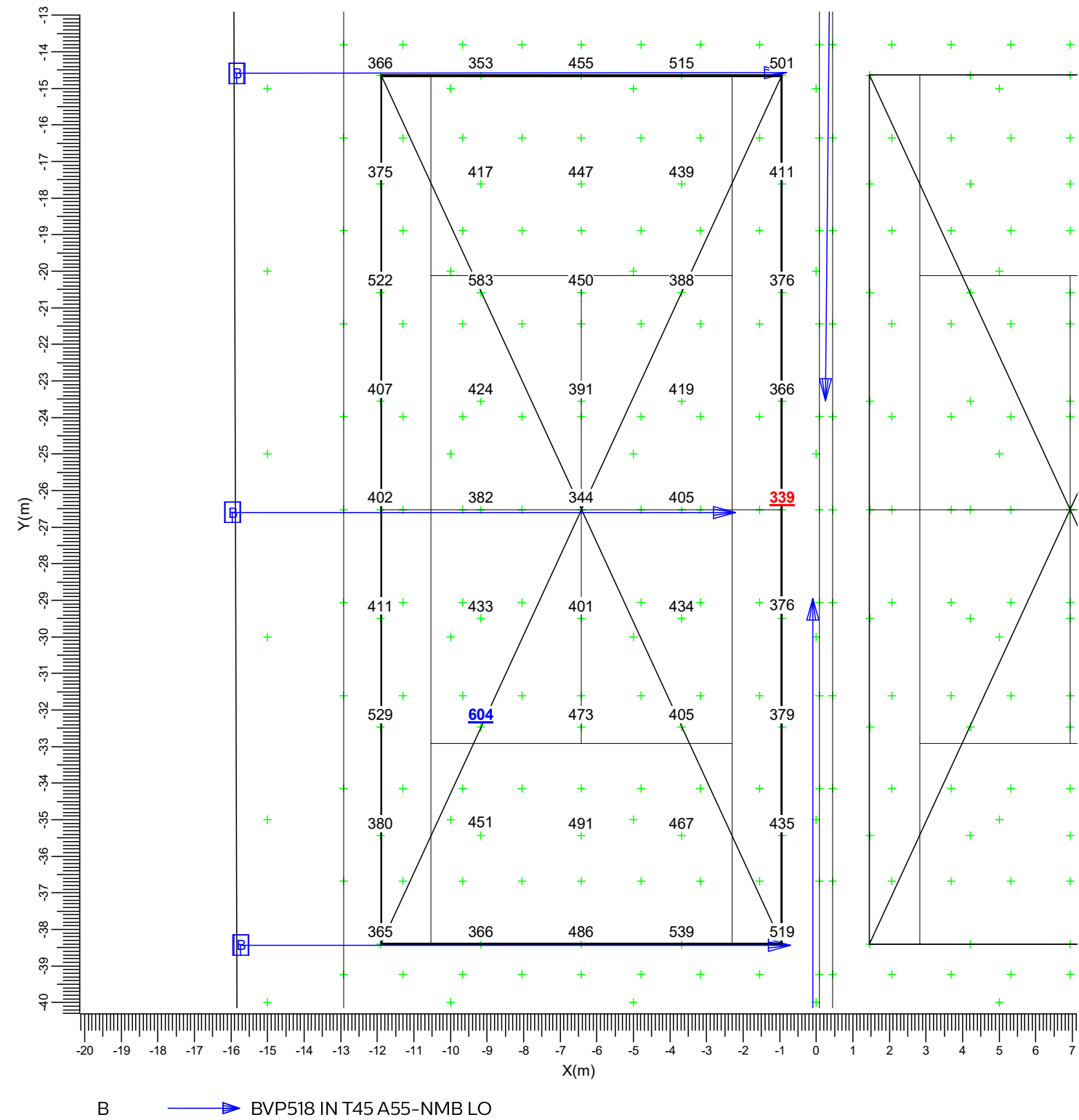
Tennis Court 4

Grid

: Tennis PPA 4 at Z = -0.00 m

Calculation

: Surface Illuminance (lux)



Average	Minimum	Maximum	Min/Ave	Min/Max	Project maintenance factor	Scale
432	339	604	0.79	0.56	0.95	1:150

3.2 Tennis TPA 4: Graphical Table

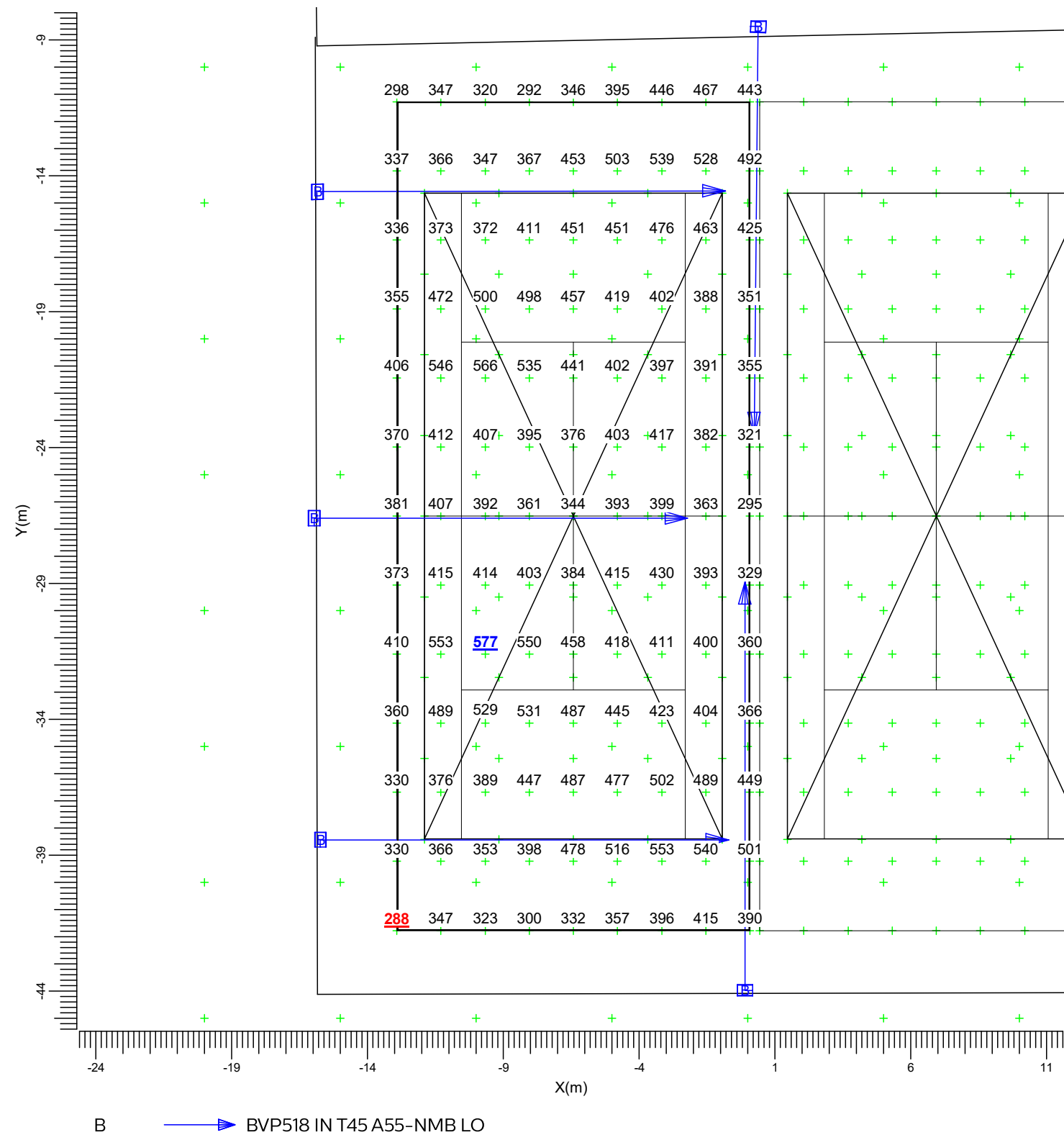
Tennis Court 4

Grid

Calculation

: Tennis TPA 4 at Z = -0.00 m

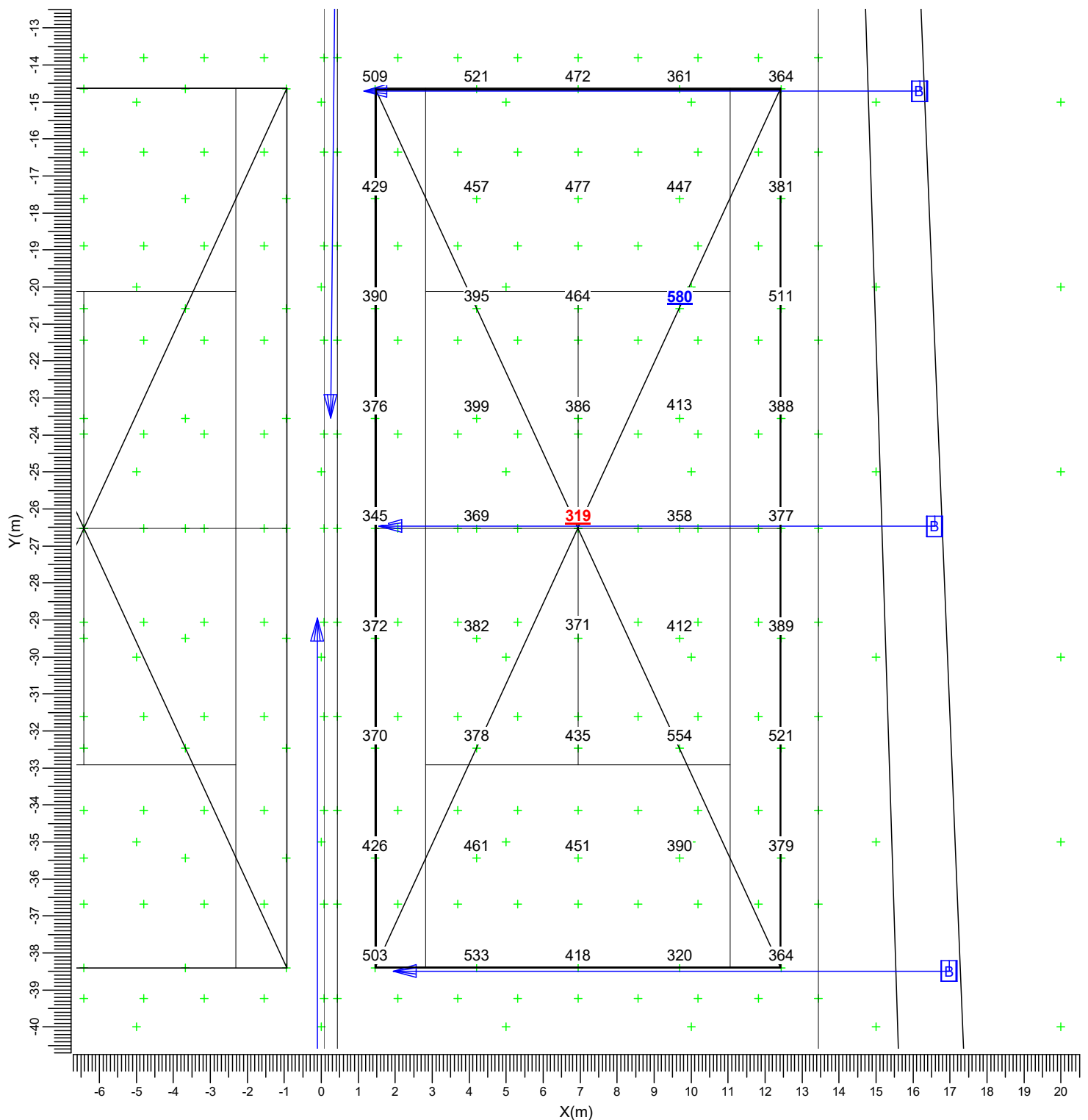
: Surface Illuminance (lux)



Average	Minimum	Maximum	Min/Ave	Min/Max	Project maintenance factor	Scale
415	288	577	0.69	0.50	0.95	1:200

Tennis Court 5

Grid : Tennis PPA 5 at Z = -0.00 m
Calculation : Surface Illuminance (lux)



B BVP518 IN T45 A55-NMB LO

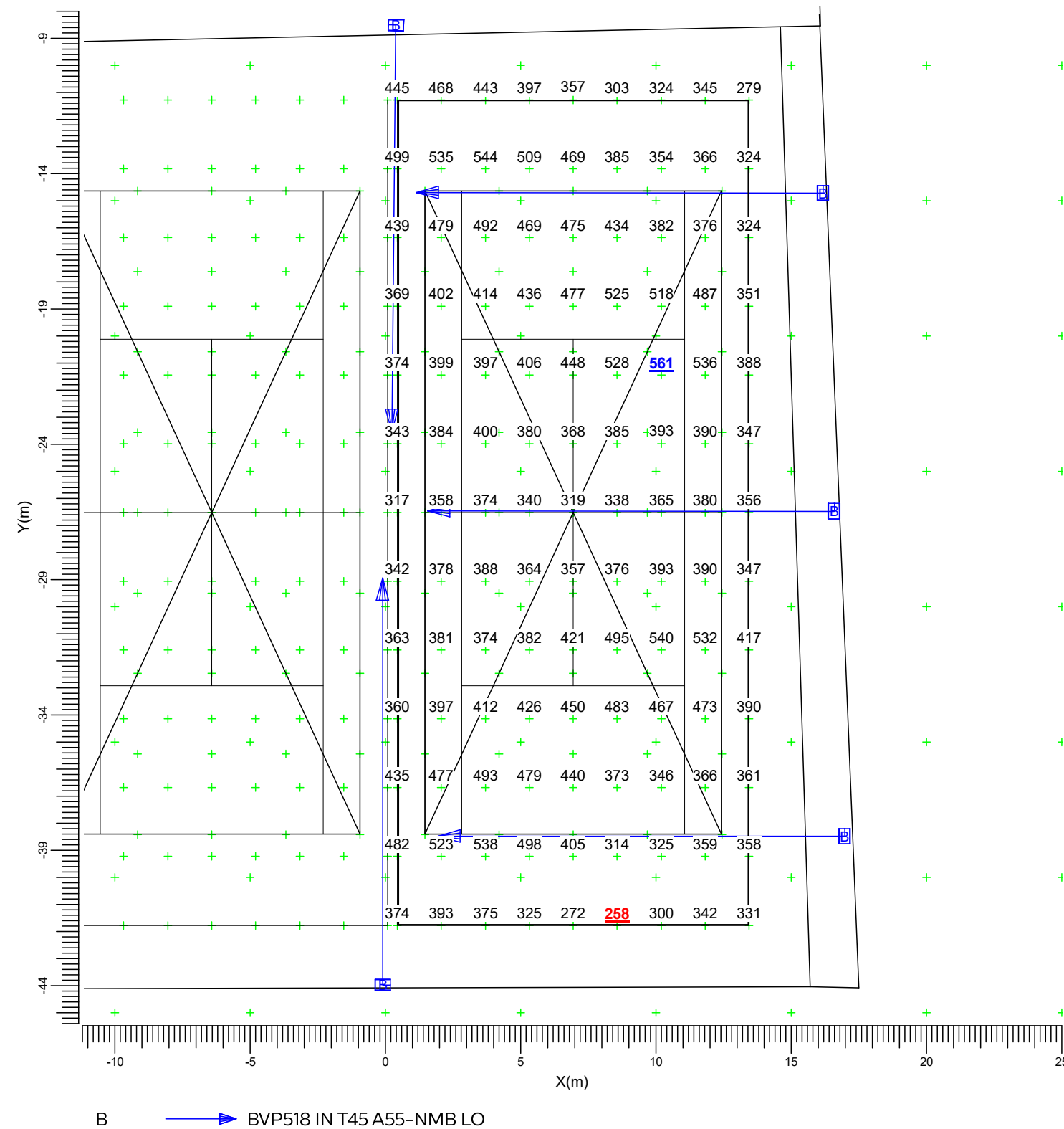
Average	Minimum	Maximum	Min/Ave	Min/Max	Project maintenance factor	Scale
420	319	580	0.76	0.55	0.95	1:150

3.4 Tennis TPA 5: Graphical Table

Tennis Court 5

Grid : Tennis TPA 5 at Z = -0.00 m

Calculation : Surface Illuminance (lux)



Average	Minimum	Maximum	Min/Ave	Min/Max	Project maintenance factor	Scale
405	258	561	0.64	0.46	0.95	1:200

3.5 Ev Houses West: Iso Contour

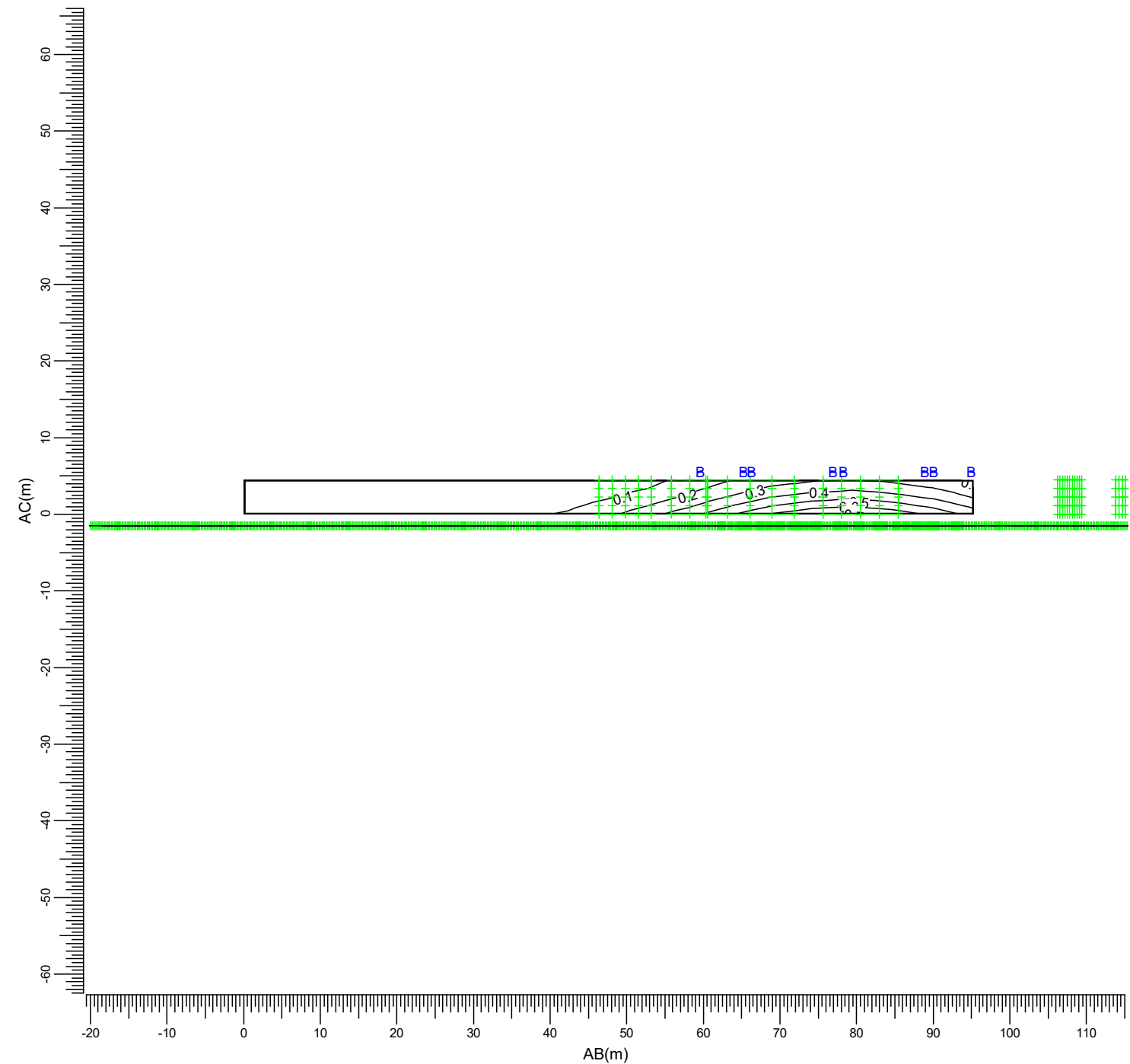
Spill Lighting

Grid

Calculation

: Ev Houses West

: Surface Illuminance (lux)



(-48.94, 52.89, 6.00)

(-48.94, 52.89, 1.50)

C-----D (-52.42, -42.33, 6.00)

A-----B (-52.42, -42.33, 1.50)

A: BVP518 OUT T35 A55-NMB LO

B: BVP518 IN T45 A55-NMB LO

Maximum0.71

Project maintenance factor1.00

Scale1:750

3.6 Ev Houses S/W: Iso Contour

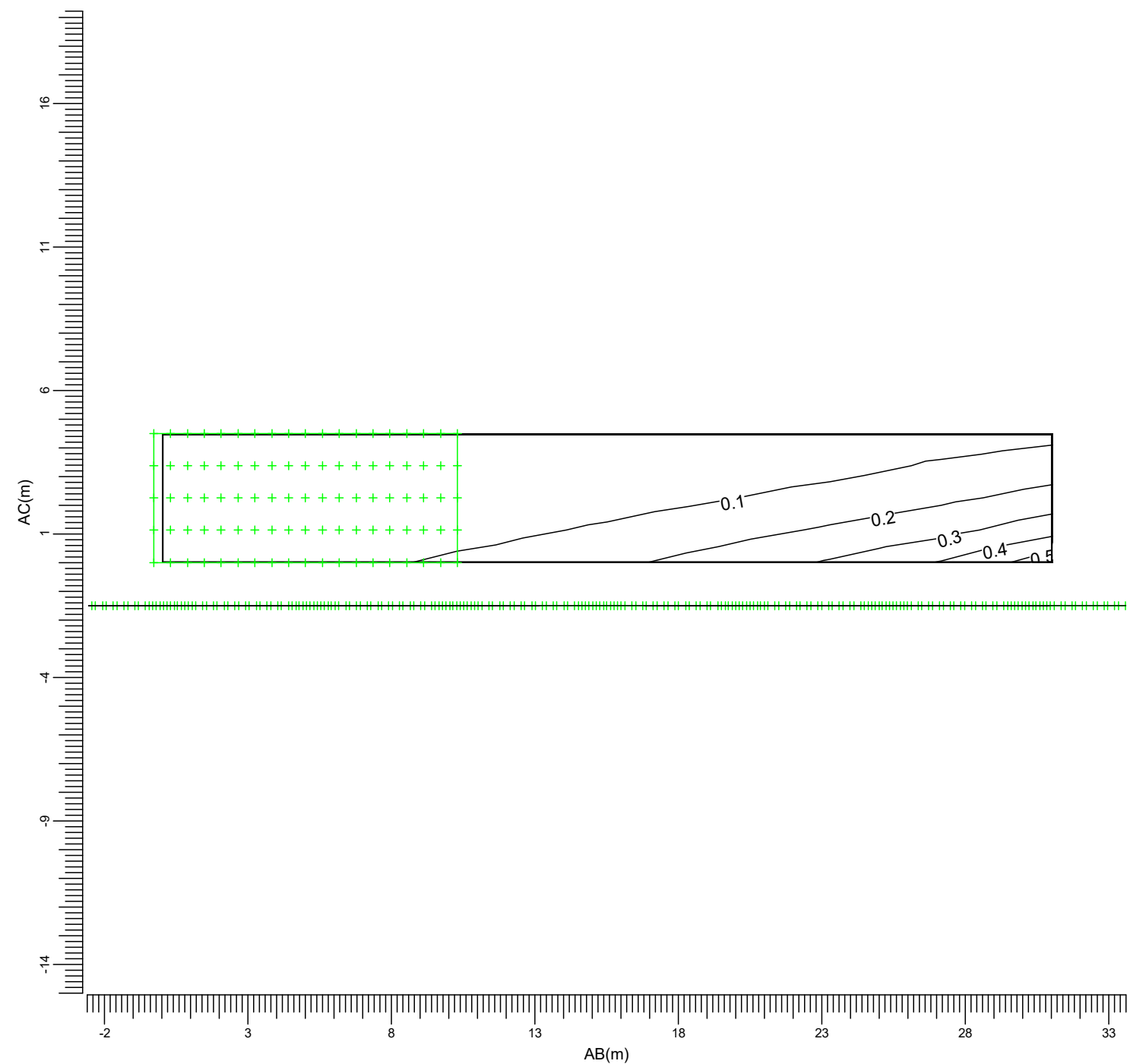
Spill Lighting

Grid

Calculation

: Ev Houses S/W

: Surface Illuminance (lux)



(-50.49, -64.39, 6.00)

(-50.49, -64.39, 1.50)

C-----D (-19.52, -62.07, 6.00)

A-----B (-19.52, -62.07, 1.50)

A: BVP518 OUT T35 A55-NMB LO

B: BVP518 IN T45 A55-NMB LO

Maximum0.56

Project maintenance factor1.00

Scale1:200

3.7 Ev Houses Sth Centre: Iso Contour

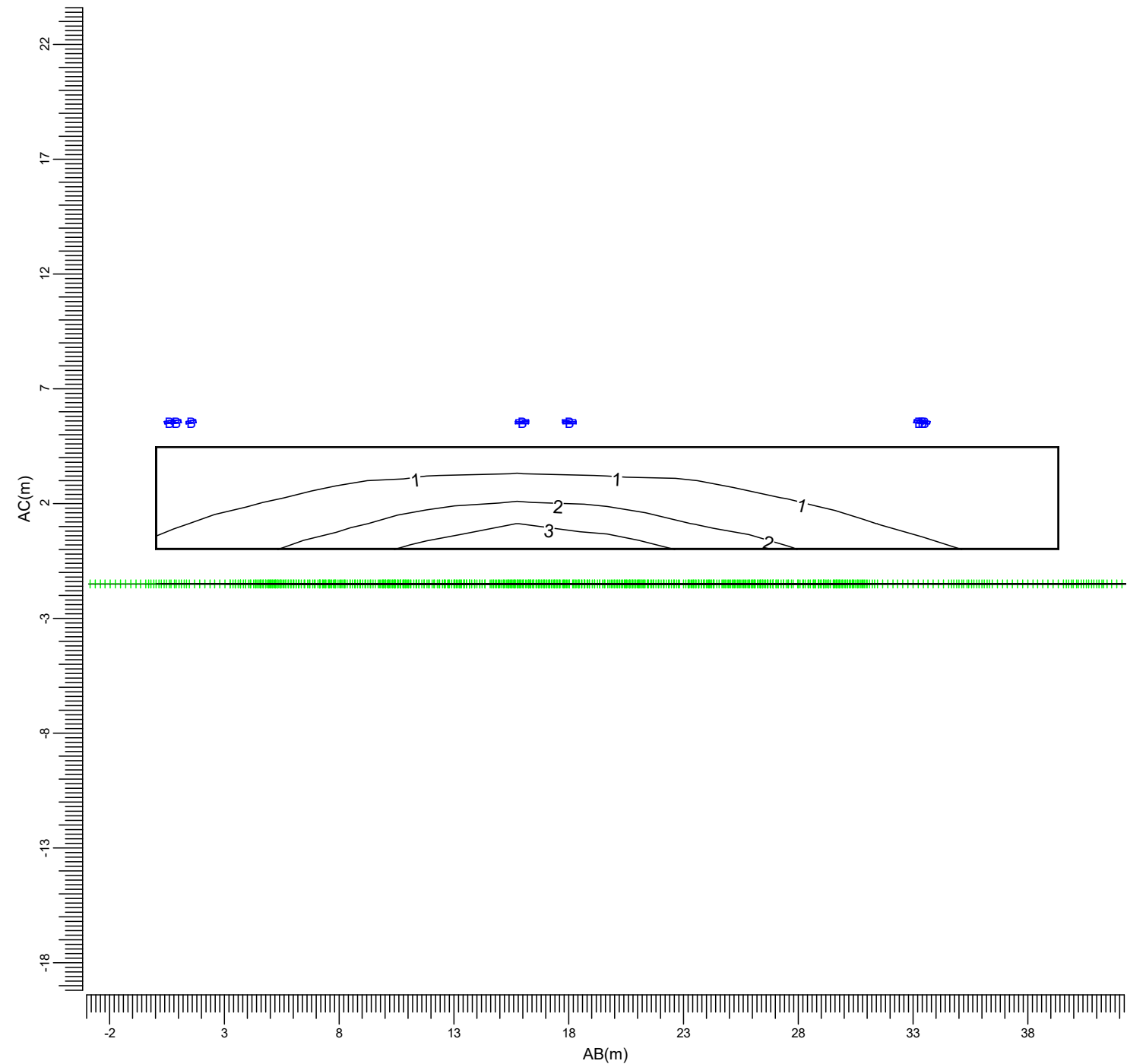
Spill Lighting

Grid

Calculation

: Ev Houses Sth Centre

: Surface Illuminance (lux)



(-15.46, -57.81, 6.00)

(-15.46, -57.81, 1.50)

C-----D (23.83, -56.07, 6.00)

A-----B (23.83, -56.07, 1.50)

A: BVP518 OUT T35 A55-NMB LO

B: BVP518 IN T45 A55-NMB LO

Maximum3.82

Project maintenance factor1.00

Scale1:250

3.8 Ev East Top East: Iso Contour

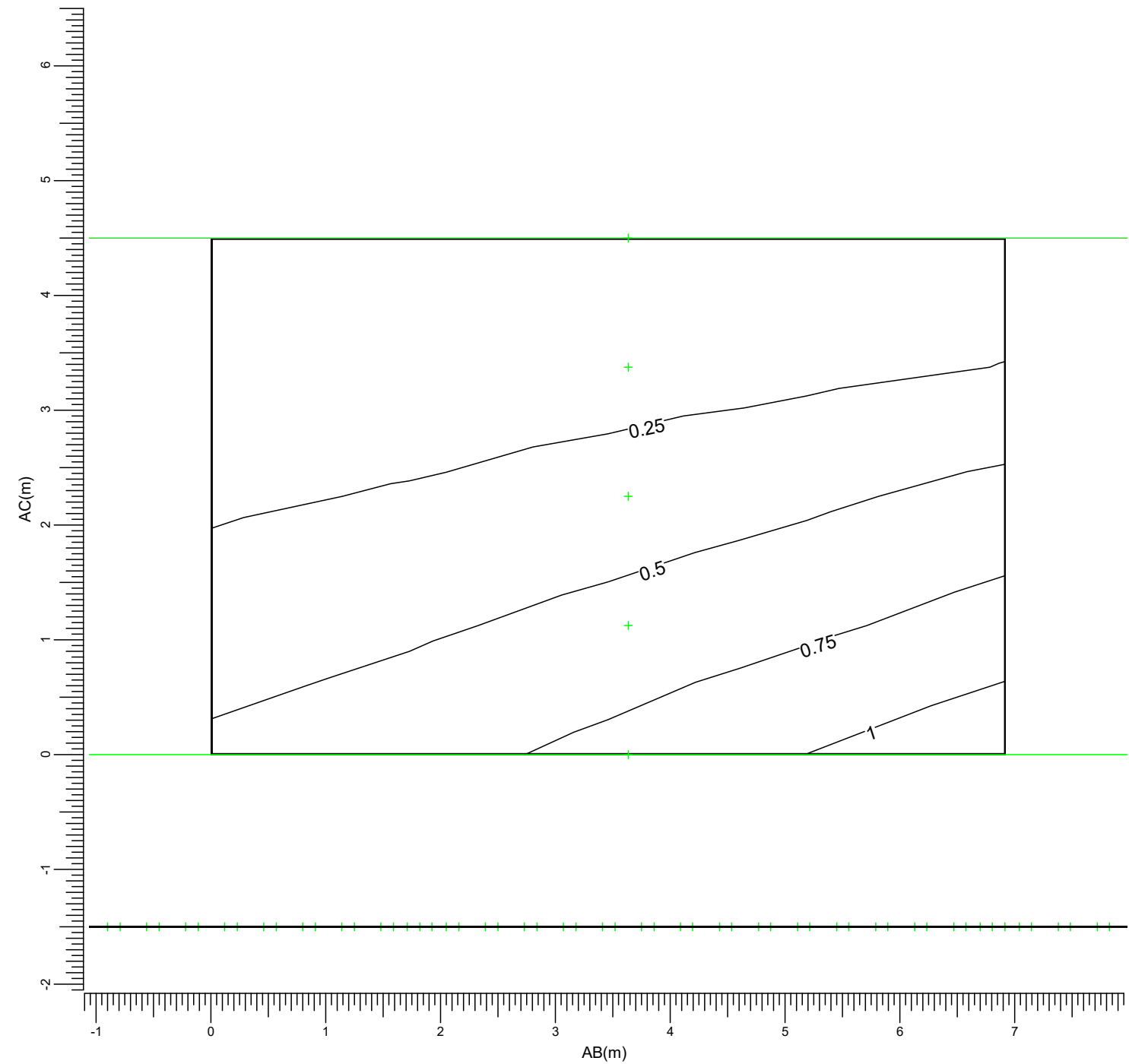
Spill Lighting

Grid

Calculation

: Ev East Top Hse

: Surface Illuminance (lux)



(27.73,	3.71,	6.00)	C-----D (28.20,	-3.19,	6.00)
(27.73,	3.71,	1.50)	A-----B (28.20,	-3.19,	1.50)

A: BVP518 OUT T35 A55-NMB LO

B: BVP518 IN T45 A55-NMB LO

Maximum
1.19

Project maintenance factor
1.00

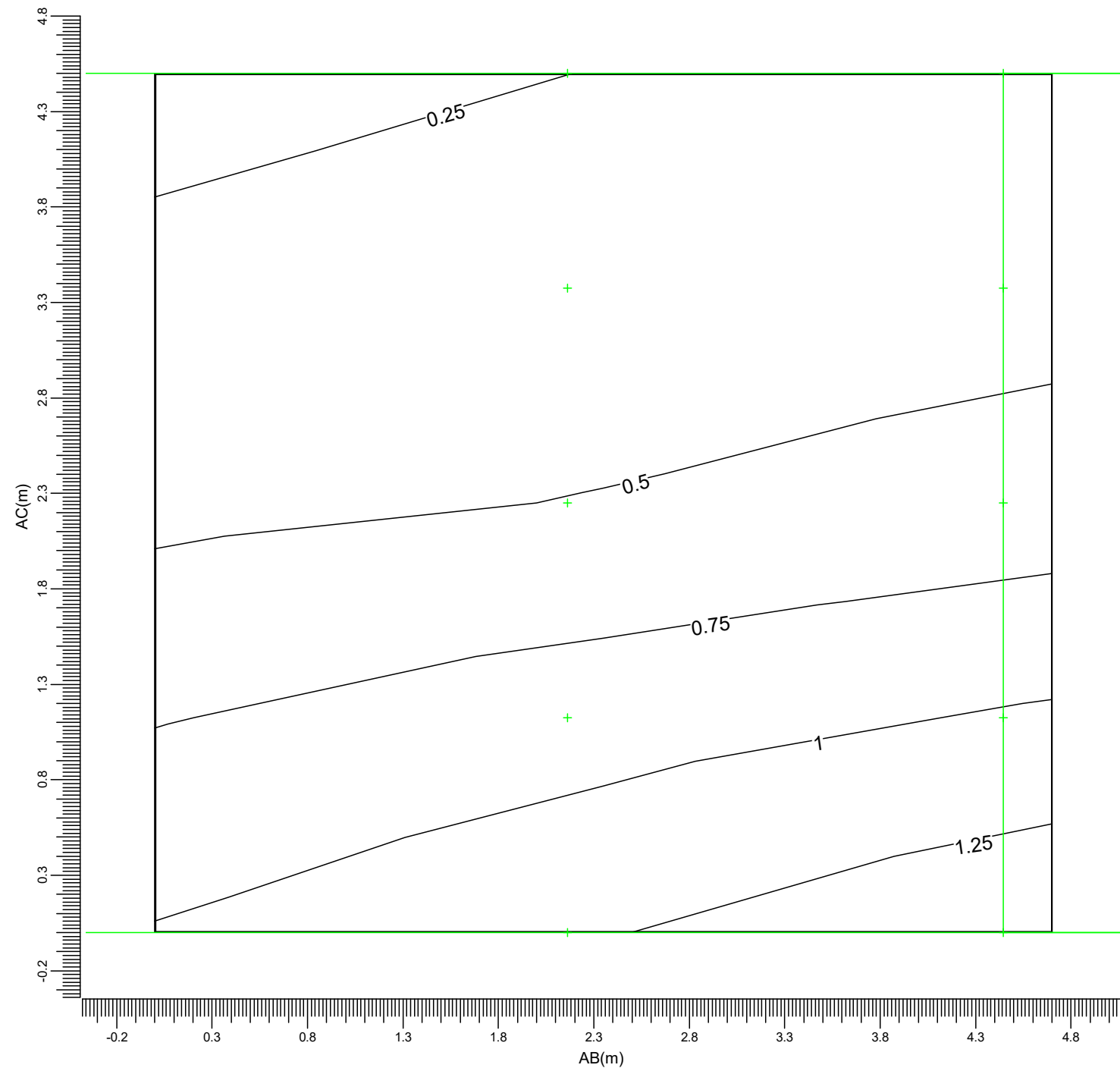
Scale
1:50

3.9 Ev East Mid Hse out: Iso Contour

Spill Lighting

Grid : Ev East Mid Hse out

Calculation : Surface Illuminance (lux)



(33.38, -6.01, 6.00) C-----D (33.22, -10.71, 6.00)

(33.38, -6.01, 1.50) A-----B (33.22, -10.71, 1.50)

A: BVP518 OUT T35 A55-NMB LO

B: BVP518 IN T45 A55-NMB LO

Maximum1.47

Project maintenance factor1.00

Scale1:30

3.10 Ev East Mid Hse In: Iso Contour

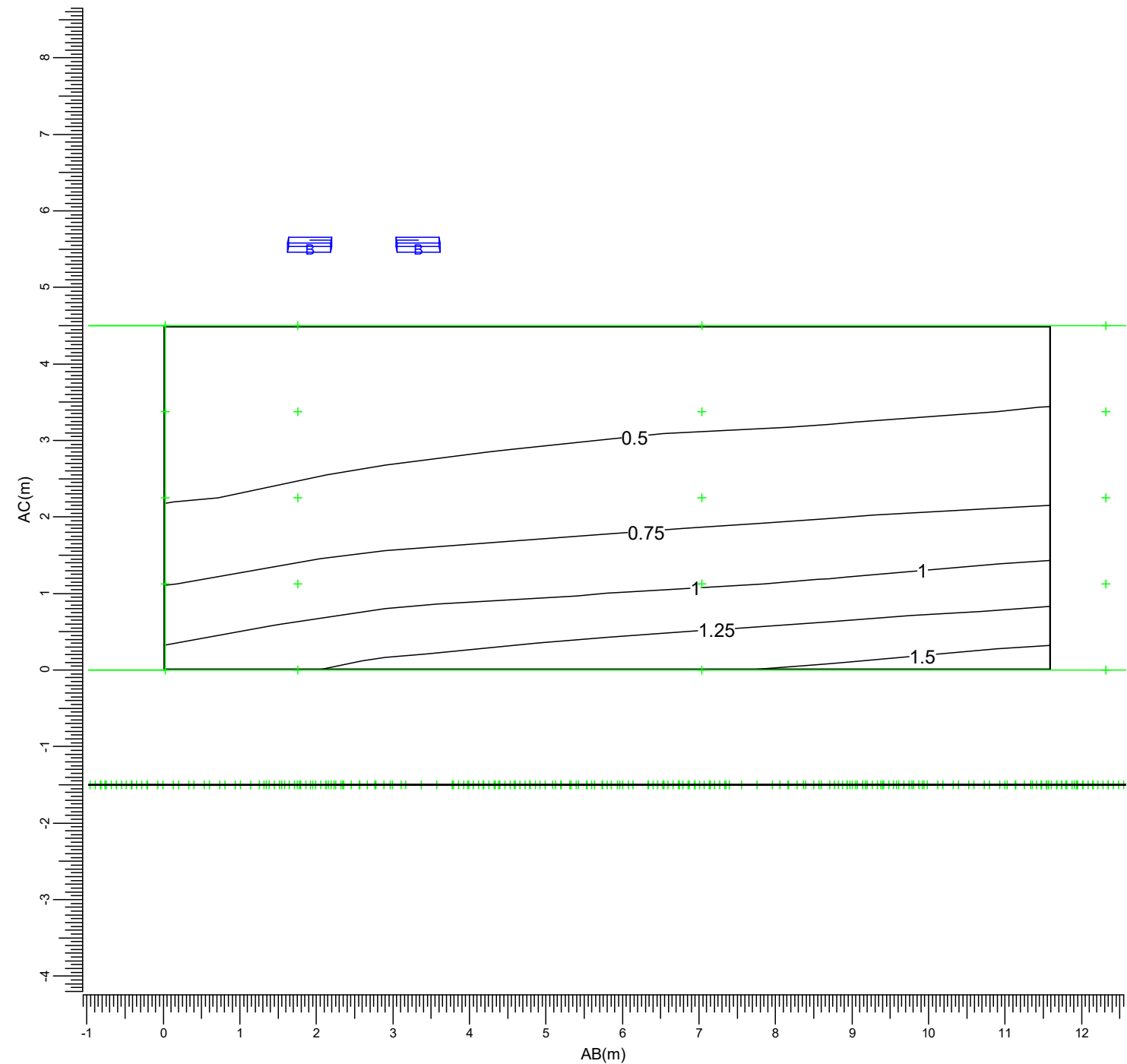
Spill Lighting

Grid

Calculation

: Ev East Mid Hse In

: Surface Illuminance (lux)



(36.35, -10.56, 6.00)

C-----D (36.82, -22.15, 6.00)

(36.35, -10.56, 1.50)

A-----B (36.82, -22.15, 1.50)

A: BVP518 OUT T35 A55-NMB LO

B: BVP518 IN T45 A55-NMB LO

Maximum

Project maintenance factor

Scale

1.66

1.00

1:75

3.11 Ev East Bot Hse: Iso Contour

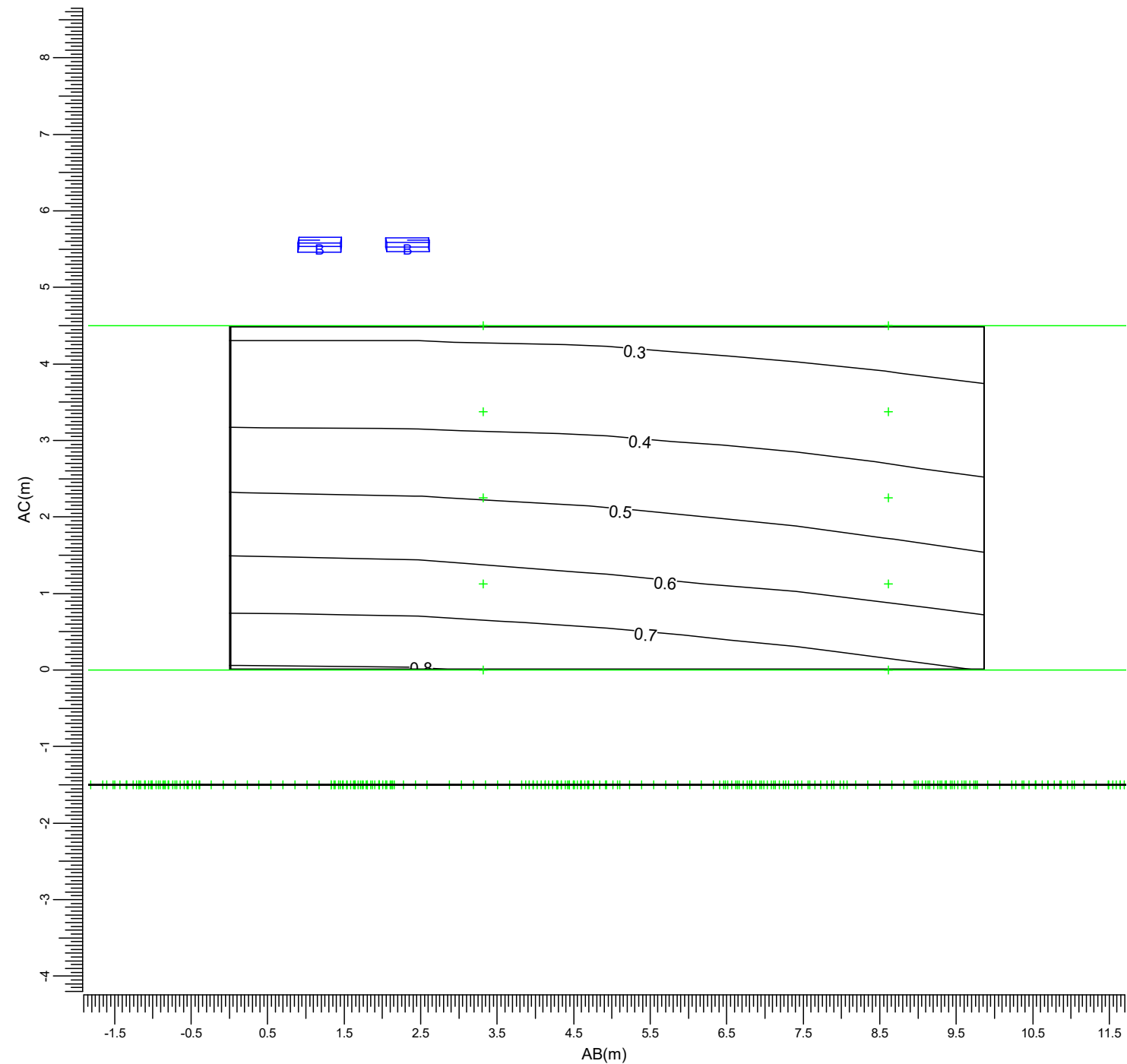
Spill Lighting

Grid

Calculation

: Ev East Bot Hse

: Surface Illuminance (lux)



(46.54, -26.23, 6.00) C-----D (46.23, -36.10, 6.00)

| |

(46.54, -26.23, 1.50) A-----B (46.23, -36.10, 1.50)

A: BVP518 OUT T35 A55-NMB LO

B: BVP518 IN T45 A55-NMB LO

Maximum

0.81

Project maintenance factor

1.00

Scale

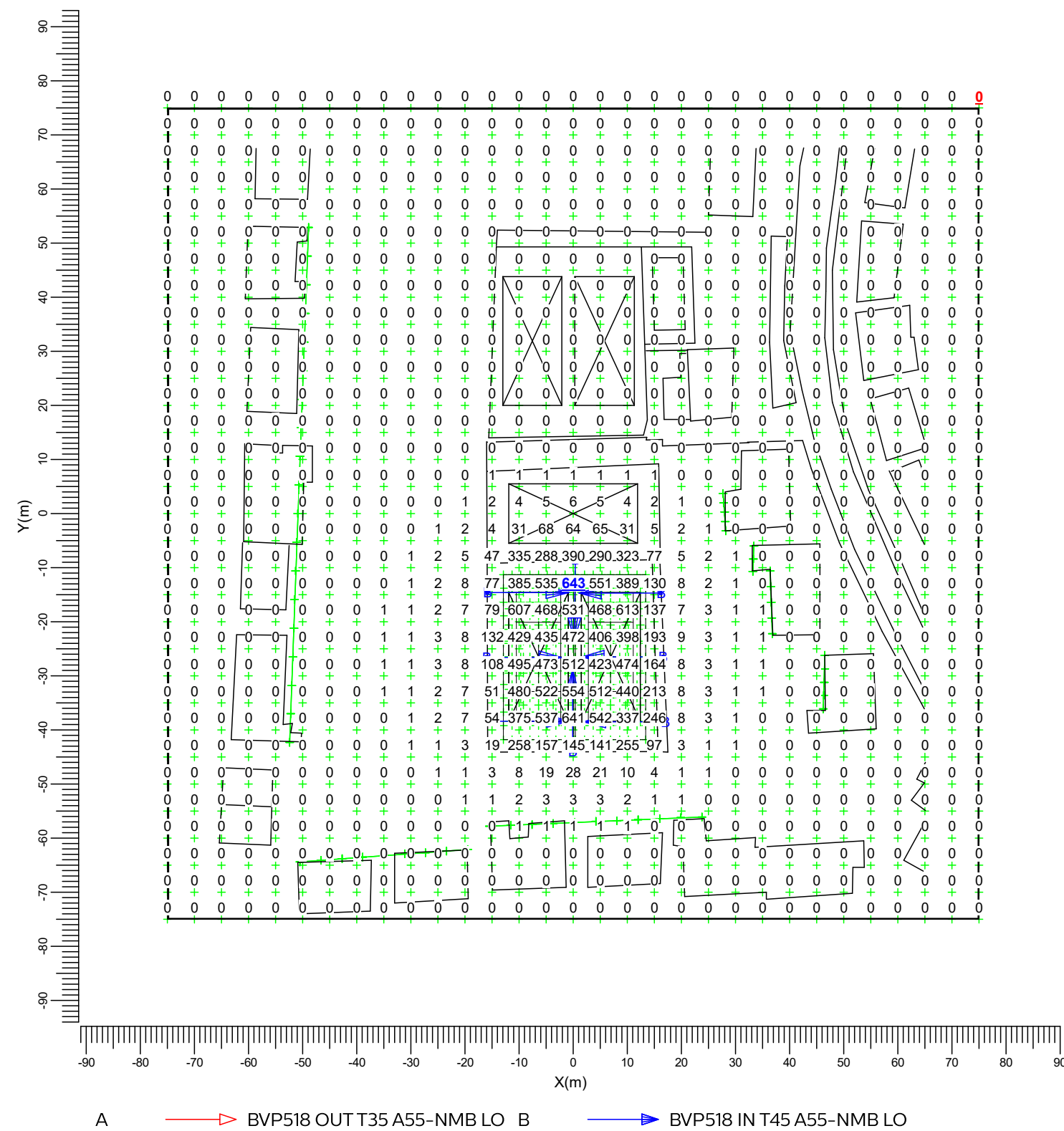
1:75

3.12 Spill Lighting: Graphical Table

Spill Lighting

Grid : Spill at Z = -0.00 m

Calculation : Surface Illuminance (lux)



Project maintenance factor

1.00

Scale

1:1000

3.13 Spill Lighting: Iso Contour

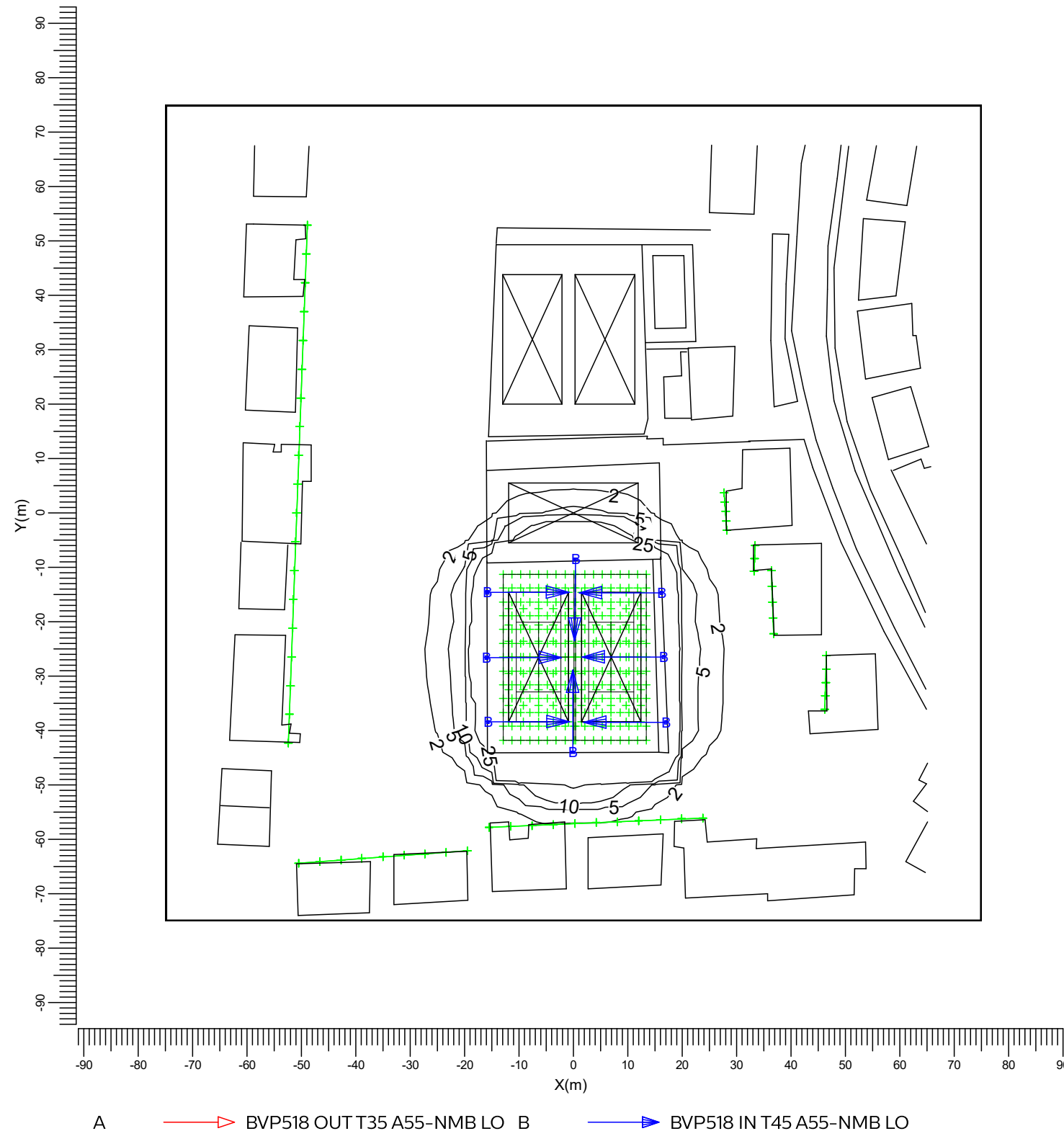
Spill Lighting

Grid

Calculation

: Spill at Z = -0.00 m

: Surface Illuminance (lux)



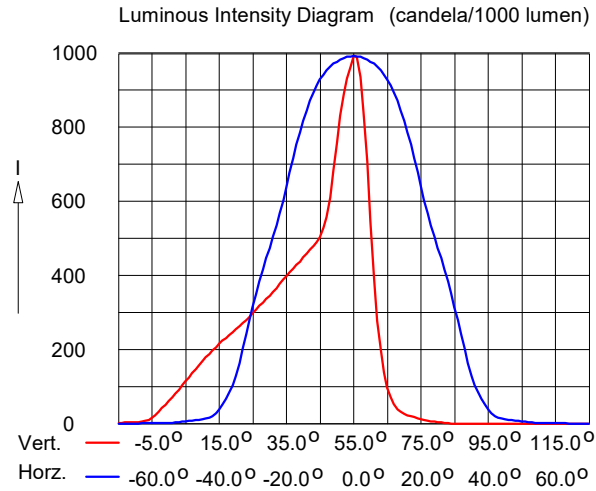
4. Luminaire Details

4.1 Project Luminaires

OptiVision LED gen3.5 2022
BVP518 IN T45 1xLED1110-4S/740/740 E3/D4I A55-NMB LO

Light output ratios
DLOR : 0.57
ULOR : 0.00
TLOR : 0.57
Ballast : E3/D4I
Lamp flux : 111000 lm
Luminaire wattage : 606.5 W
Measurement code : LVM2I482U1

Note: Luminaire data not from database.



5. Installation Data

5.1 Legends

Project Luminaires:				
Code	Qty	Luminaire Type	Lamp Type	Flux (lm)
B	8	BVP518 IN T45 A55-NMB LO	1 * LED1110-4S/740	1 * 111000

Switching Modes:	
Code	Switching Mode
1	Tennis Court 1
2	Tennis Court 2
3	Tennis Court 3
4	Tennis Court 4
5	Tennis Court 5
6	Spill Lighting

5.2 Luminaire Positioning and Orientation

Including Aiming Points:

Qty and Code	Position			Aiming Points			ULR	Switching Modes					
	X (m)	Y (m)	Z (m)	X (m)	Y (m)	Z (m)		1	2	3	4	5	6
1 * B	-15.95	-26.60	7.00	-2.21	-26.60	0.00	0.00	-	-	-	+	-	+
1 * B	-15.83	-14.59	7.00	-0.82	-14.56	0.00	0.00	-	-	-	+	-	+
1 * B	-15.72	-38.43	7.00	-0.71	-38.43	0.00	0.00	-	-	-	+	-	+
1 * B	-0.10	-43.96	7.00	-0.10	-28.95	0.00	0.00	-	-	-	+	+	+
1 * B	0.39	-8.53	7.00	0.25	-23.54	0.00	0.00	-	-	-	+	+	+
1 * B	16.16	-14.71	7.00	1.15	-14.71	0.00	0.00	-	-	-	-	+	+
1 * B	16.57	-26.47	7.00	1.56	-26.47	0.00	0.00	-	-	-	-	+	+
1 * B	16.96	-38.49	7.00	1.95	-38.49	0.00	0.00	-	-	-	-	+	+

Including Aiming Angles:

Qty and Code	Position			Aiming Angles			ULR	Switching Modes					
	X (m)	Y (m)	Z (m)	Rot.	Tilt90	Tilt0		1	2	3	4	5	6
1 * B	-15.95	-26.60	7.00	0.0	63.0	0.0	0.00	-	-	-	+	-	+
1 * B	-15.83	-14.59	7.00	0.1	65.0	0.0	0.00	-	-	-	+	-	+
1 * B	-15.72	-38.43	7.00	0.0	65.0	0.0	0.00	-	-	-	+	-	+
1 * B	-0.10	-43.96	7.00	90.0	65.0	0.0	0.00	-	-	-	+	+	+
1 * B	0.39	-8.53	7.00	-90.5	65.0	0.0	0.00	-	-	-	+	+	+
1 * B	16.16	-14.71	7.00	180.0	65.0	0.0	0.00	-	-	-	-	+	+
1 * B	16.57	-26.47	7.00	180.0	65.0	0.0	0.00	-	-	-	-	+	+
1 * B	16.96	-38.49	7.00	180.0	65.0	0.0	0.00	-	-	-	-	+	+

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