



Construction Testing Solutions Ltd

CIS Tower Structural Fabric Survey

Client: Castlebrook Investments

Site Address: CIS Tower, Miller Street, Manchester, M4 4AH

Report Ref: STR 154

Revision: 001

Issue Date: 28/10/2019

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Approval

Report No: STR/154		Issue No: 001	
Client Address:	49 Berkley Square London W1J 5AZ	Approved by: Ben Dimbleby - Project Manager	
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Issued for and on behalf of Construction Testing Solutions Ltd.			

Preamble

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Distribution					
Date:	Name	Company	PDF	Hard copy	Issue No
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The latest version of this report supersedes any previous versions issued					

1.0 Introduction

Following written instructions from Dave Sandbrook of Curtins, Construction Testing Solutions visited the site on 24th September 2019 in order to carry out Structural Fabric Survey.

- Dust samples were taken from specified locations and sent to a construction testing solution approved UKAS accredited testing laboratory.
- Tensile steel samples were taken from specified locations and sent to a construction testing solution approved UKAS accredited testing laboratory.
- Petro graphic analysis samples were taken from specified locations and sent to a construction testing solution approved UKAS accredited testing laboratory.

Construction Testing Solutions were provided with a set of marked drawings 068723-CUR-00-XX-SK-S-001 to 011. The drawing highlighted specific location to be survey and the information required from each location on levels B3 - 25.

2.0 Sampling/Testing Methods

Depth of Concrete Cover Over Embedded Steel – In-House Method TP65 based on BS 1881-204:1988

Sampling of Concrete by Dust Drilling – In-House Method TP63 based on BRE IP 21/86

Depth of Carbonation – In-House Method TP62 based on BRE Digest 405

Drilling of Concrete Cores – In-House Method TP57 based on BS EN 12504-1:2009

2.1 Equipment

Before use checks are carried out on covermeters, half cells and other electronic test equipment in accordance with the relevant documented in-house procedure.

Where reinforcement size is known, covermeter measurements are accurate to at least $\pm 2\text{mm}$. If the size is determined by other means then BS1881-204 estimates the accuracy to be " $\pm 15\%$ or $\pm 5\text{mm}$, whichever is the greater, for reinforcement at covers of less than 100mm ".

Equipment used:

- Ferroskan – Hilti PS200/250

2.2 Environment

The following environmental conditions and concrete/reinforcement properties are known to influence depth of cover results:

- Presence of large metallic structures or electrical equipment within close proximity to the test area.
- Closely spaced or very large diameter reinforcing steel.
- Non-standard bar shapes and sizes.
- Metallic debris within the concrete such as tie wire, nails, etc.

Results from the Ferroskan (when used in Image Scan mode) should be confirmed where possible by direct measurements of the depth of cover and bar size.

Results from the Ferroskan with a file name prefix FS are not covered under our current scope of accreditation.

3.0 Test Results/Investigation Finding

3.0 Appendix A – Summary of results

- 3.1 Basement level 3
- 3.2 Basement level 2
- 3.3 Basement level 1 lower
- 3.4 Basement level 1
- 3.5 Ground level
- 3.6 Mezzanine level
- 3.7 Level 2
- 3.8 Level 7
- 3.9 Level 16
- 3.10 Level 25

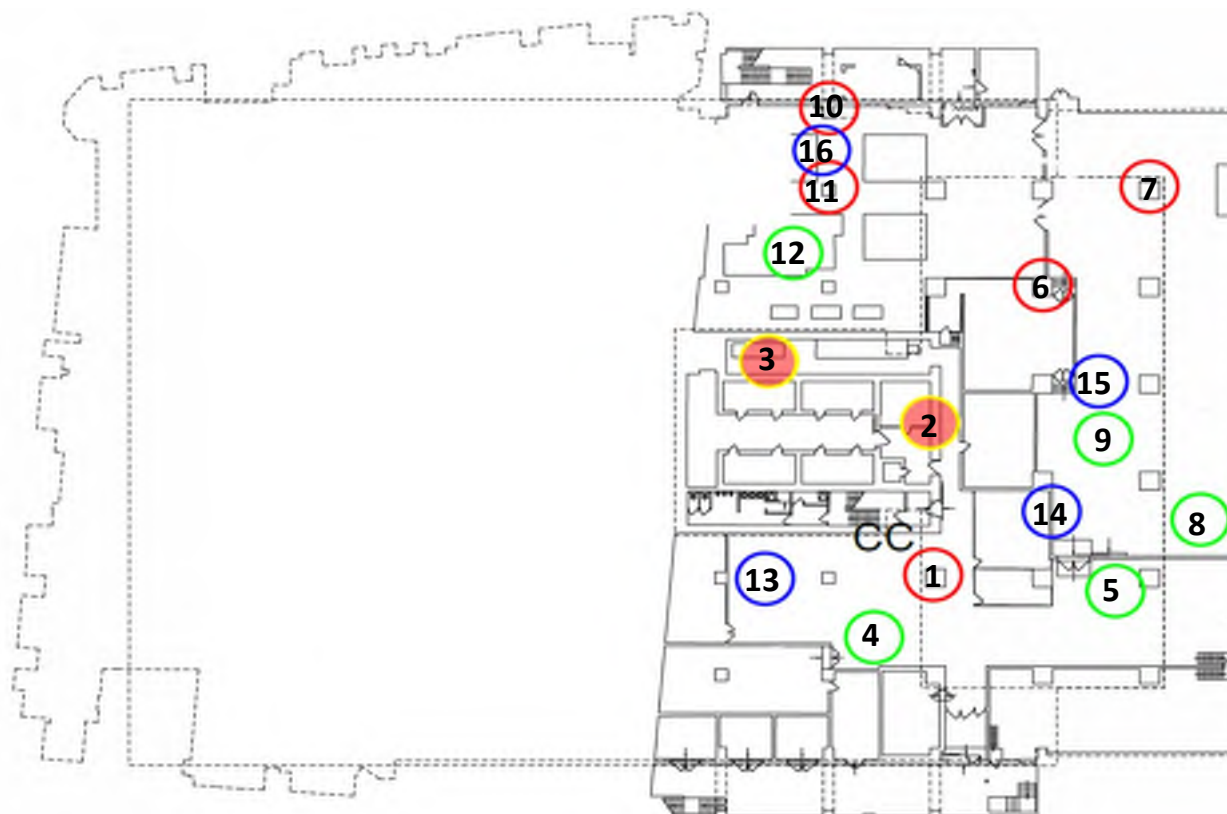
4.0 Appendix B – Laboratory test results

- 4.1 Concrete chemistry
- 4.2 Compressive strength test certificates
- 4.3 Petrographic analysis
- 4.4 Tensile strength test certificates

5.0 Appendix c – Individual Ferroskans

3.0 Appendix A – Summary of results

3.1 Basement level 3



PLAN @ LEVEL B3



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Notes

No.

Revision

Drawn Date	Checked Date
B.D.	

PROJECT: CIS Tower Manchester

Location:

Basement Level 3

Drawn: BD Date:

Approved: SG Date:

Scale:

Original Drawing A3

Job no.

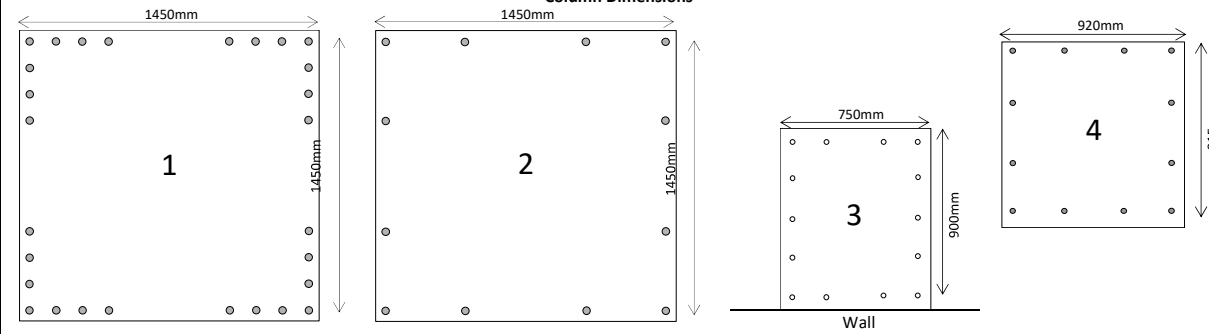
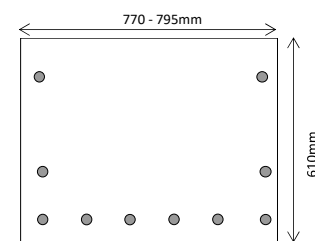
STR154

Drawing no.

B3 - 001

Revision

1

		Client: Curtins						Report Ref: STR154				
		Site: CIS Tower - Manchester						Report Date: 25/10/2019				
		Location: Basement Level 3						Reported By: B.Dimbleby				
		Summary Of Results						Chloride Content % by mass of				
Location	Vertical Bar Type	Average Vertical Bar Spacing (mm)	Cover To Vertical Reinforcement (mm)	Horizontal Bar Type	Average Horizontal Bar Spacing (mm)	Cover To Horizontal Reinforcement (mm)	Ferroscan Ref:	Column Type:	Sample		Depth of Carbonation (mm)	Cement Content
Basement Level 3 Columns												
B3 - 1	38mmØ Smooth Bar *	~130**	58	9mmØ Smooth Bar *	~350	35	A/AA	1	0.03	0.15	3	7.7
B3 - 6	38mmØ Smooth Bar *	~130**	84	9mmØ Smooth Bar *	~350	73	B/BB	1	<0.01	<0.01	3	-
B3 - 7	38mmØ Smooth Bar *	350 - 400	48	9mmØ Smooth Bar *	~350	36	C/CC	2	<0.01	<0.01	5	-
B3 - 10	25mmØ Smooth Bar*	170 - 270	57	9mmØ Smooth Bar *	~320	44	D/DD	3	<0.01	<0.01	0	-
B3 -11	38mmØ Smooth Bar *	~200	52	9mmØ Smooth Bar *	~300	39	E/EE	4	<0.01	<0.01	5	12.6
Basement Level 3 Core Walls												
B3 - 2	28mmØ Smooth Bar	~250	49	14mmØ Smooth	~250	23	12/13	Wall Thickness = 736mm				
B3 - 3	28mmØ Smooth Bar	~420	55	14mmØ Smooth	~250	34	14/15	Wall Thickness = 620mm				
Basement Level 3 Slab - HAC Not Present In Any Location												
Location	Longitudinal Bar Type	Average Longitudinal Bar Spacing (mm)	Cover To Longitudinal Reinforcement (mm)	Transverse Bar Type	Average Transverse Bar Spacing (mm)	Cover To Transverse Reinforcement (mm)	Ferroscan Ref:	Slab Thickness (mm)	Chloride Content % by mass of		Depth of Carbonation (mm)	Cement Content
									Sample	Cement		
B3 - 4	28mmØ Smooth Bar*	~300	122	28mmØ Smooth Bar*	~400	151	18	~1000	<0.01	<0.01	0	-
B3 - 5	28mmØ Smooth Bar*	~300	84	28mmØ Smooth Bar*	~300	115	21	~1000	<0.01	<0.01	0	12.5
B3 - 8	28mmØ Smooth Bar*	~300	87	28mmØ Smooth Bar*	~300	109	28	~1000	0.01	0.05	0	-
B3 - 9	28mmØ Smooth Bar*	Bar Depth Beyond Range of Detection Equipment		28mmØ Smooth Bar*	Bar Depth Beyond Range of Detection Equipment		10	~1000	0.01	0.08	0	-
B3 - 12	28mmØ Smooth Bar*	Bar Depth Beyond Range of Detection Equipment		28mmØ Smooth Bar*	Bar Depth Beyond Range of Detection Equipment		11	~1000	<0.01	<0.01	0	-
Basement Level 3 Beams												
B3-13	32mmØ Smooth Bar *	125	65	9mmØ Smooth Bar *	170	45	85/86/87	B1	<0.01	<0.01	5	-
B3-14	32mmØ Smooth Bar *	125	65	9mmØ Smooth Bar *	170	50	89/90/91	B1	<0.01	<0.01	5	-
B3-15	32mmØ Smooth Bar	125	62	9mmØ Smooth Bar	170	40	96/97/97	B1	<0.01	<0.01	5	7.8
B3-16	32mmØ Smooth Bar	125	101	9mmØ Smooth Bar	170	89	100/101/102	B1	<0.01	<0.01	5	9.1
Comments:		* = Bars exposed ** = Four bars in each corner of column with larger spacing in centre of column										
Column & Beam Dimensions - Reinforcement Layout												
Column Dimensions 								Beam Dimensions 				

3.2 Basement level 2



PLAN @ BASEMENT LEVEL B2



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Revision

Drawn Date	Checked Date
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PROJECT: CIS Tower Manchester

Location:

Basement Level 2

Job no.

STR154

Drawing no.

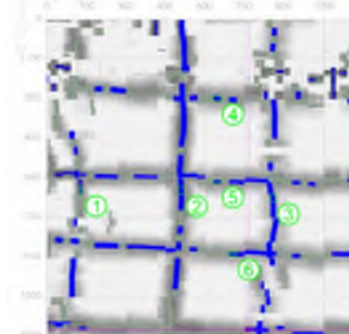
B2 - 001

Revision

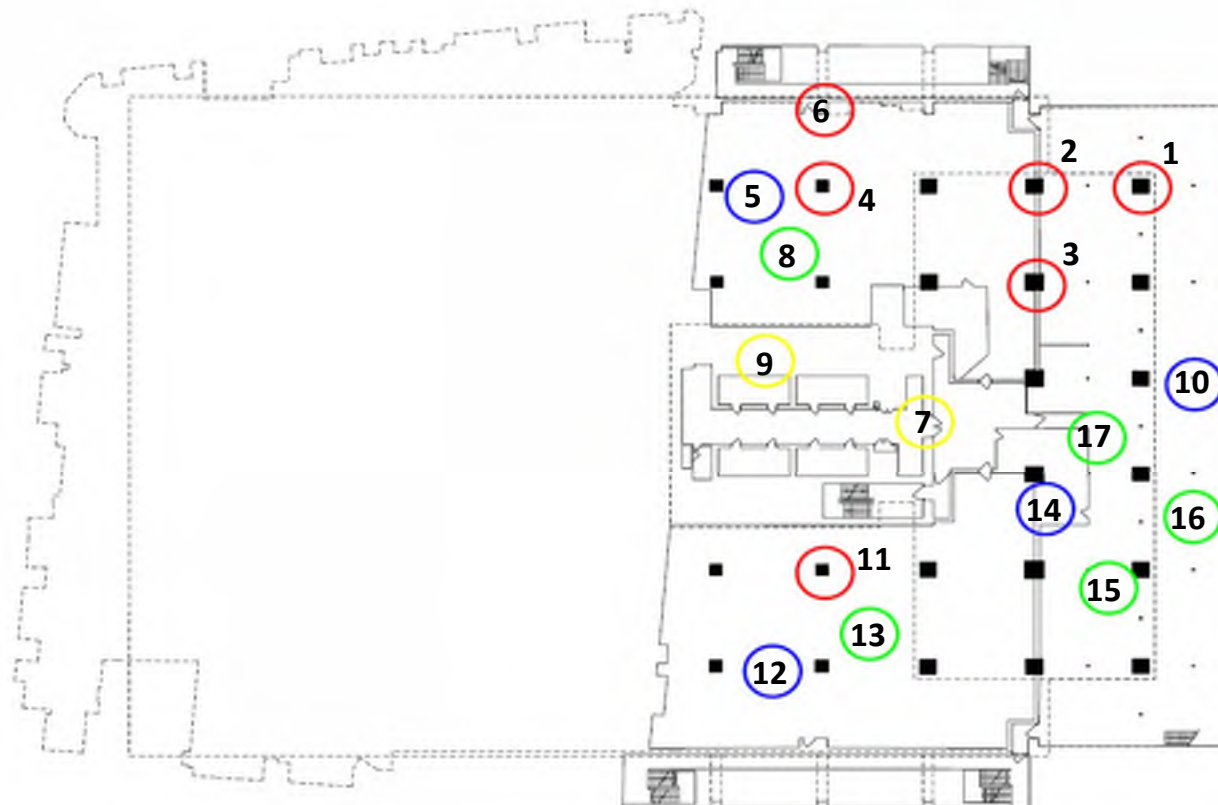
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Drawn: BD Date:
 Approved: SG Date:

Scale:
 Original Drawing A3

		Client: Curtins						Report Ref: STR154				
		Site: CIS Tower - Manchester						Report Date: 25/10/2019				
		Location: Basement Level 2						Reported By: B.Dimbleby				
		Summary Of Results						Chloride Content % by mass of				
Location	Vertical Bar Type	Average Vertical Bar Spacing (mm)	Cover To Vertical Reinforcement (mm)	Horizontal Bar Type	Average Horizontal Bar Spacing (mm)	Cover To Horizontal Reinforcement (mm)	Ferrosan Ref:	Wall Thickness (mm)	Sample		Depth of Carbonation (mm)	Cement Content
Basement Level 2 Walls												
B2 - 1	25mmØ Smooth Bar	300	60	20mmØ Smooth Bar	300	41	60	920	<0.01	<0.01	3	-
B2 - 2	25mmØ Smooth Bar	300	89	20mmØ Smooth Bar	300	92	61	920	0.02	0.12	0	13.4
B2 - 3	25mmØ Smooth Bar	300	86	20mmØ Smooth Bar	300	65	64	920	0.02	0.09	3	17.3
B2 - 4	25mmØ Smooth Bar	300	137	20mmØ Smooth Bar	300	118	65	920	0.02	0.14	3	-
B2 - 6	25mmØ Smooth Bar	300	87	20mmØ Smooth Bar	300	69	67	920	0.02	0.13	3	17.3
B2 - 7	25mmØ Smooth Bar	300	114	20mmØ Smooth Bar	300	94	68	920	0.03	0.15	0	19.2
Basement Level 2 Walls - Additional Requested Locations												
B2 - A	20mmØ Smooth Bar*	300	36	12mmØ Smooth Bar*	300	19	B2 - A	All marked walls were found to be reinforced concrete and measured a thickness between 310-320mm				
B2 - B	20mmØ Smooth Bar	300	22	12mmØ Smooth Bar	300	19	B2 - B					
B2 - C	20mmØ Smooth Bar	300	33	12mmØ Smooth Bar	300	26	B2 - C					
B2 - D	20mmØ Smooth Bar	300	54	12mmØ Smooth Bar	240	44	B2 - D					
B2 - E	20mmØ Smooth Bar	300	52	12mmØ Smooth Bar	300	38	B2 - E					
B2 - F	20mmØ Smooth Bar	300	59	12mmØ Smooth Bar	300	49	B2 - F					
Basement Level 2 Slabs								Slab Thickness				
B2 - 5	25mmØ Smooth Bar	160 - 200	74	25mmØ Smooth Bar	250 - 280	59	66/66a/66b	750-1000	0.02	0.11	4	-
B2 - 8	25mmØ Smooth Bar*	250	131	25mmØ Smooth Bar	200	122	84	750-1000	0.03	0.2	3	-
B2 - 9	25mmØ Smooth Bar	250 - 300	149	25mmØ Smooth Bar	250 - 300	161	92	750-1000	0.04	0.22	5	19.1
B2 - 10	25mmØ Smooth Bar	300	109	25mmØ Smooth Bar	300	88	93	750-1000	0.06	0.29	10	19.9
B2 - 11	25mmØ Smooth Bar*	300	103	25mmØ Smooth Bar	300	111	94	750-1000	0.03	0.2	10	16.9
Comments:		* Bar Exposed. Basement Level 2 Slab Thickness gained from GPR Survey										
Column & Beam Dimensions - Reinforcement Layout												
Typical Basement Level 2 Primary Wall - 920mm Thick				Typical Basement Level 2 Secondary Wall - 310 - 320mm Thick				Typical Basement Level 2 Slab- 750 - 1000mm Thick (From GPR Data)				
												

3.3 Basement level 1 lower



PLAN @ LEVEL B1 LOWER



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Revision

Drawn Date	Checked Date
B.D.	

PROJECT: CIS Tower Manchester

Location:

Basement Level 1 - Lower

Job no.

STR154

Drawing no.

B1L - 001

Revision

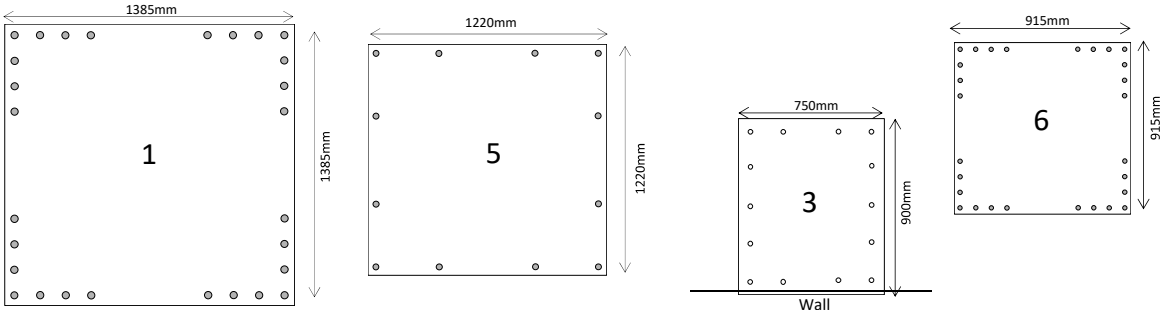
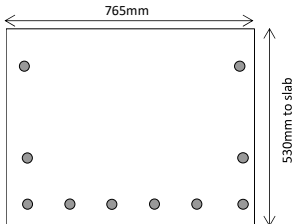
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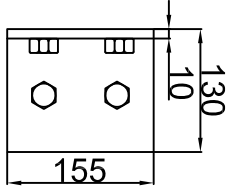
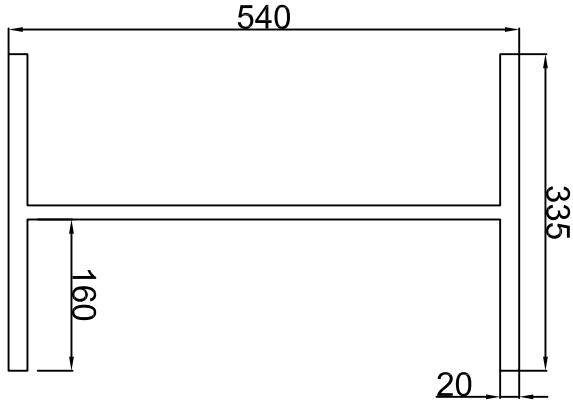
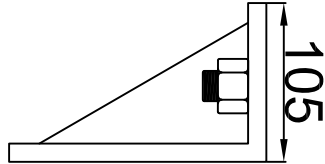
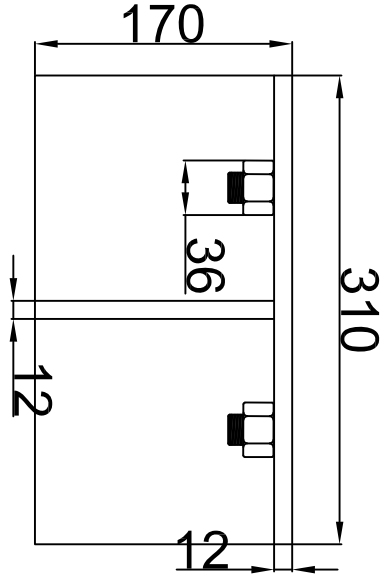
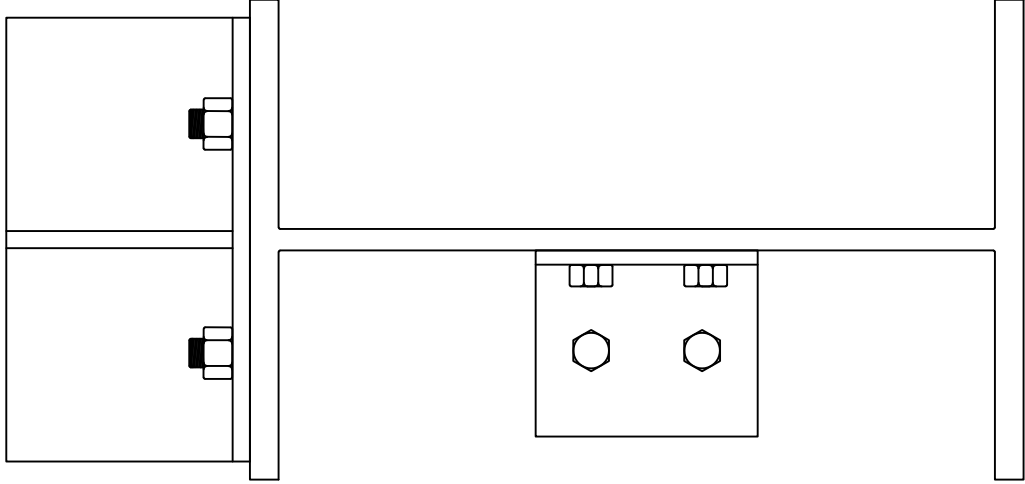
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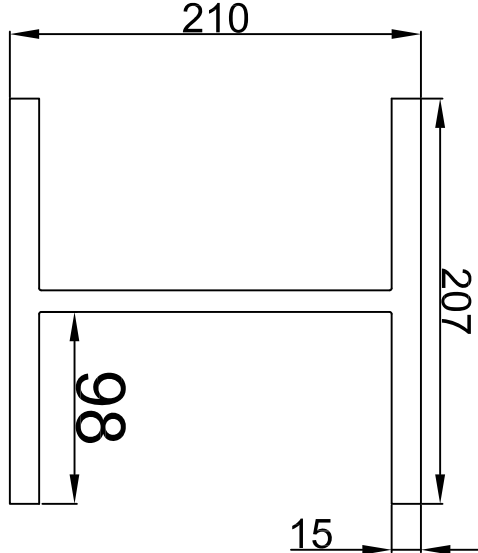
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		Client: Curtins						Report Ref: STR154					
		Site: CIS Tower - Manchester						Report Date: 25/10/2019					
		Location: Basement Level B1 Lower						Reported By: B.Dimbleby					
		Summary Of Results							Chloride Content % by mass of		Depth of Carbonation (mm)	Cement Content	
Location	Vertical Bar Type	Average Vertical Bar Spacing (mm)	Cover To Vertical Reinforcement (mm)	Horizontal Bar Type	Average Horizontal Bar Spacing (mm)	Cover To Horizontal Reinforcement (mm)	Ferrosan Ref:	Column Type:	Sample	Cement			
Basement Level 1 Lower Columns													
B1L - 1	38mmØ Smooth Bar *	250	42	9mmØ Smooth Bar	300	31	599/600/01/02	5	0.01	0.06	3	-	
B1L - 2	38mmØ Smooth Bar *	150	62	9mmØ Smooth Bar	300	53	04/05/09/10	1	<0.01	<0.01	5	12.7	
B1L - 3	38mmØ Smooth Bar *	130	48	9mmØ Smooth Bar	300	39	06/07/08/11/12/13	1	0.01	0.06	5	-	
B1L - 4	38mmØ Smooth Bar *	150	58	9mmØ Smooth Bar	300	43	35/36/37/38	6	<0.01	<0.01	2	-	
B1L - 6	22mmØ Smooth Bar *	150	84	9mmØ Smooth Bar	300	72	43	7	<0.01	<0.01	3	-	
B1L - 11	38mmØ Smooth Bar *	150	45	9mmØ Smooth Bar	300	30	49/50	6	<0.01	<0.01	3	11.7	
Basement Level 1 Lower Core Walls								Wall Thickness					
B1L - 7	28mmØSmooth Bar*	400	67	14mmØ Smooth Bar	300	47	47	740	<0.01	<0.01	5	13.3	
B1L - 9	28mmØSmooth Bar*	400	72	14mmØ Smooth Bar	300	53	48	620	<0.01	<0.01	5	14.2	
Basement Level 1 Lower Slab													
Location	Longitudinal Bar Type	Average Longitudinal Bar Spacing (mm)	Cover To Longitudinal Reinforcement (mm)	Transverse Bar Type	Average Transverse Bar Spacing (mm)	Cover To Transverse Reinforcement (mm)	Ferrosan Ref:	Slab Thickness (mm)	Chloride Content % by mass of		Depth of Carbonation (mm)	Cement Content	
									Sample	Cement			
B1L - 8	16mmØ Ribbed Bar*	300	101	16mmØ Ribbed Bar	300	103	44	300	0.01	0.05	0	22.1	
B1L - 13	16mmØ Ribbed Bar*	170	118	16mmØ Ribbed Bar*	300	118	54	300	0.01	0.05	0	14.7	
B1L 15 - 17 Undertaken on soffit of slab (no access to top of slab due to asbestos tiles)													
B1L - 15	16mmØ Ribbed Bar*	400	45	16mmØ Ribbed Bar*	250	25	88	300	<0.01	<0.01	3	-	
B1L - 16	25mmØ Ribbed Bar*	130	35	16mmØ Ribbed Bar*	250	60	95	300	<0.01	<0.01	5	10.4	
B1L - 17	16mmØ Ribbed Bar*	400	46	16mmØ Ribbed Bar*	250	20	99	300	0.01	0.07	3	8.0	
Basement Level 1 Lower Beams													
B1L - 5	32mmØ Smooth Bar*	150	74	14mmØ Smooth Bar	170	46	40/41/42	B1	<0.01	<0.01	3	13.7	
B1L - 12	32mmØ Smooth Bar*	130	85	12mmØ Smooth Bar	150	47	51/52/53	B1	<0.01	<0.01	3	9.7	
B1L - 14	32mmØ Smooth Bar*	130	58	10mmØ Smooth Bar	170	36	57/58/59	B1	<0.01	<0.01	5	-	
Comments:		* = Bars exposed											
Column & Beam Dimensions - Reinforcement Layout													
Column Dimensions								Beam Dimensions					
													

Main Floor Beam

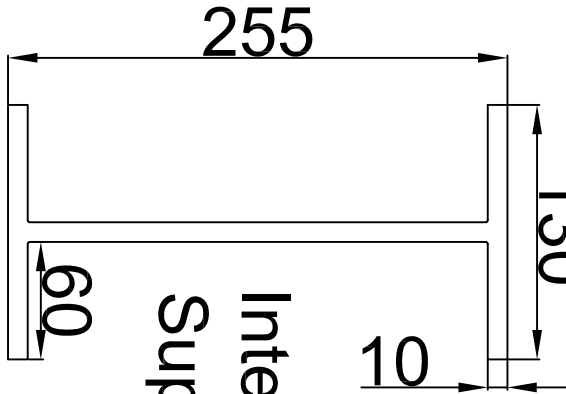


Column

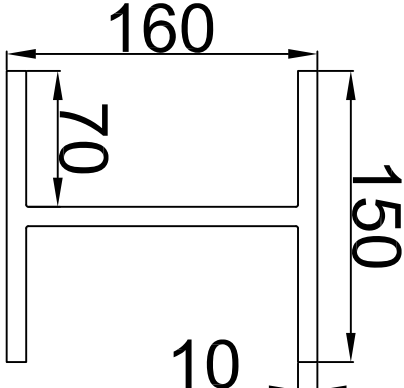


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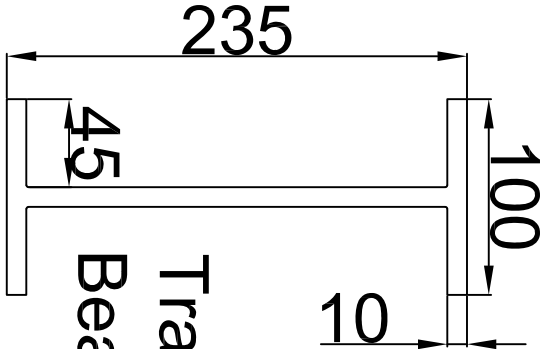
Intermediate
Support Beam



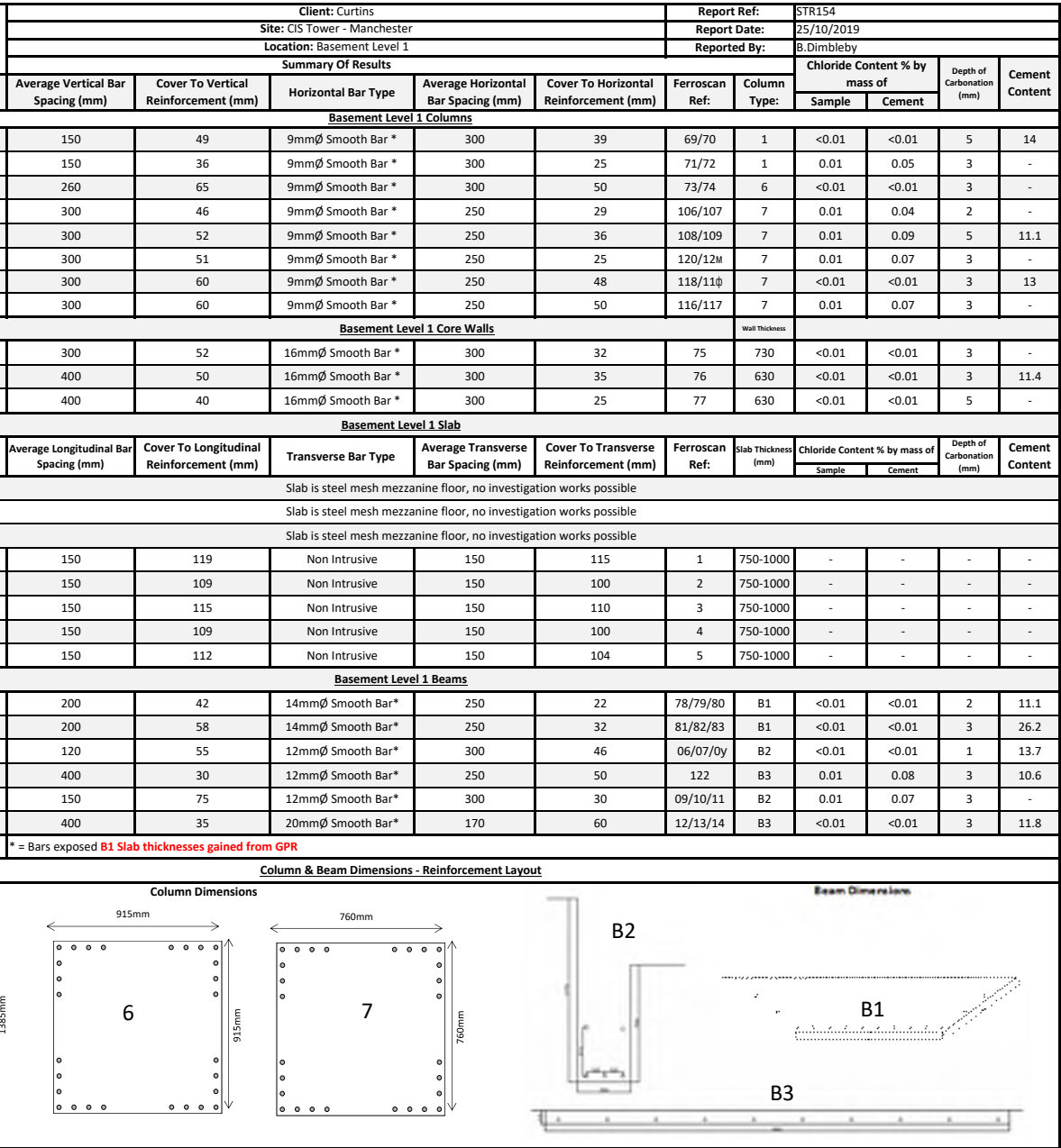
Column Support
Beam



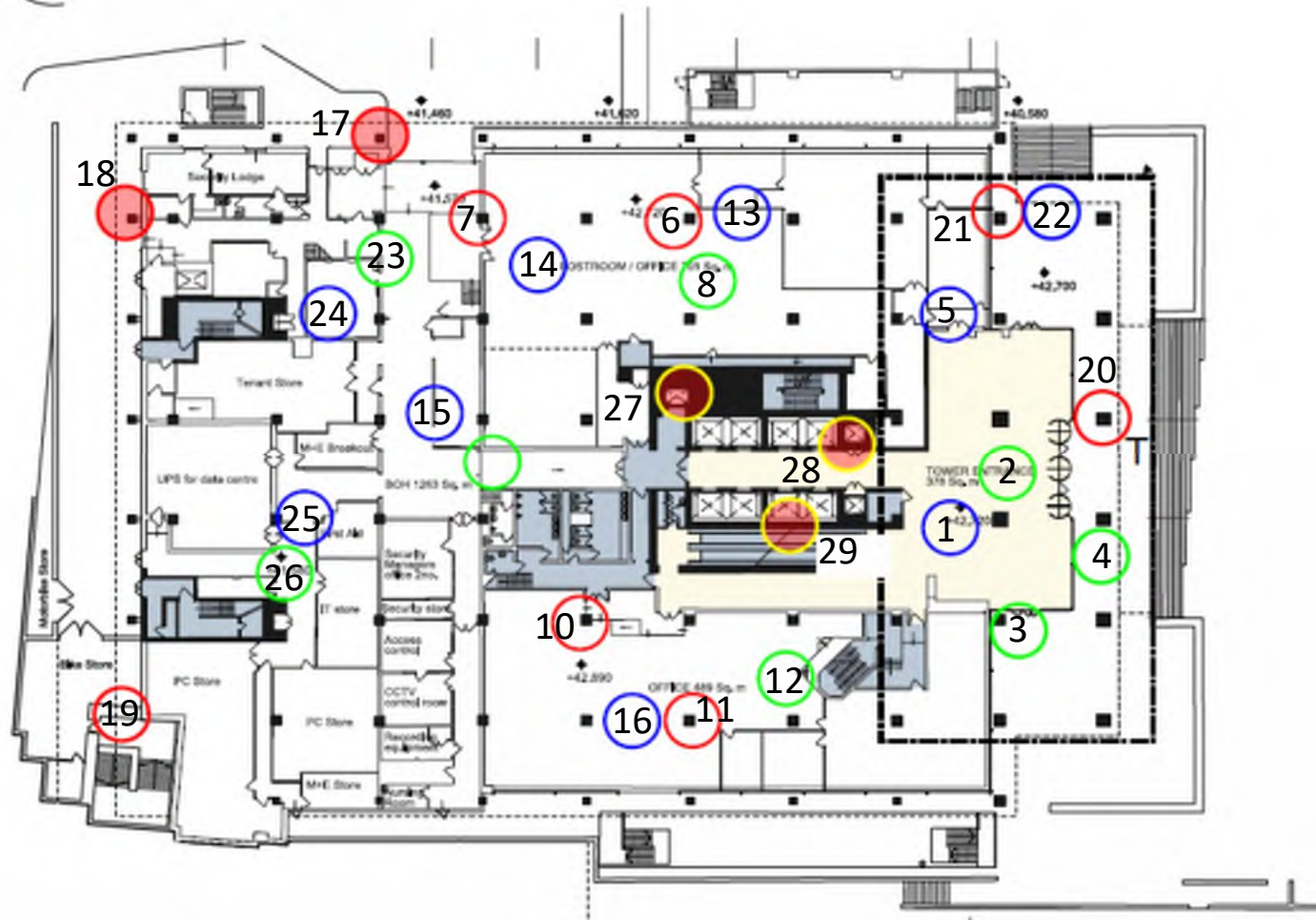
Transverse Floor
Beam



3.4 Basement level 1



3.5 Ground level

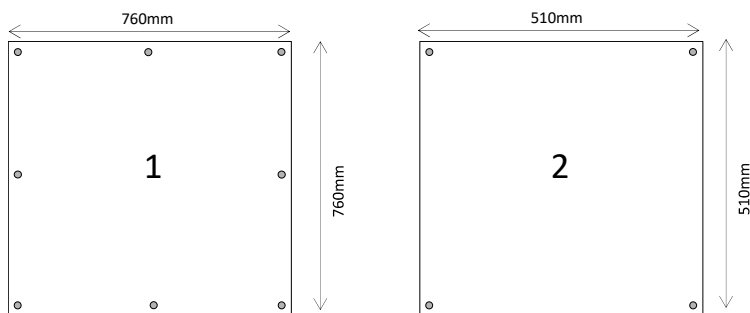
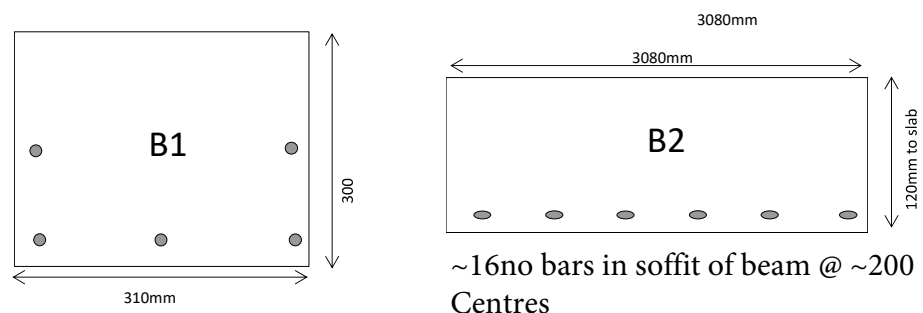


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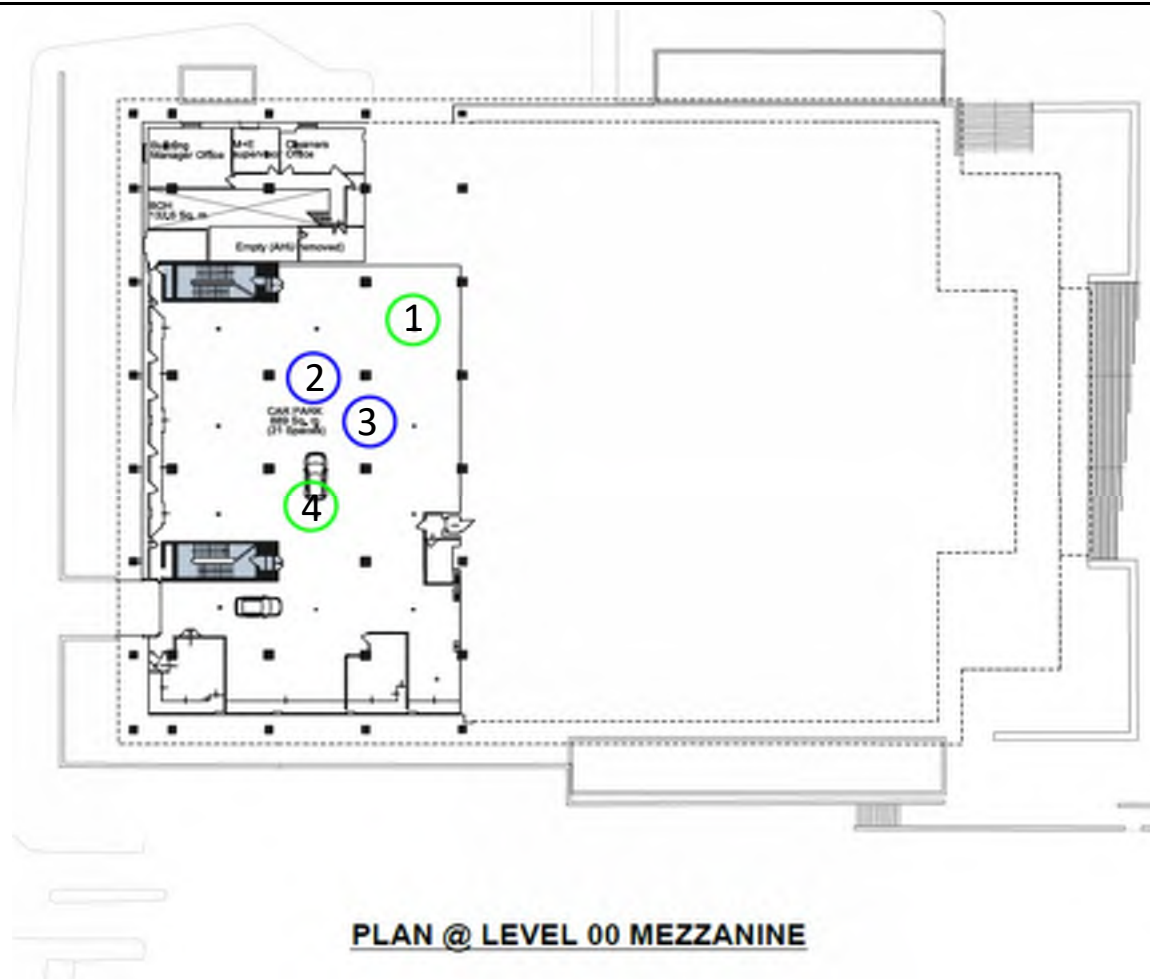
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Notes	No.	Revision	Drawn Date	Checked Date	PROJECT:		
					Location:		
					Ground Floor Level		
					Job no.		
					Drawing no.		
					Revision		

PROJECT:		
Location:		
Ground Floor Level		
Job no.		
Drawing no.		
Revision		

		Client: Curtins							Report Ref:		STR154		
		Site: CIS Tower - Manchester							Report Date:		22/10/2019		
		Location: Ground Floor Level							Reported By:		B.Dimbleby		
		Summary Of Results									Chloride Content % by mass of		Depth of Carbonation (mm)
Location	Vertical Bar Type	Average Vertical Bar Spacing (mm)	Cover To Vertical Reinforcement (mm)	Horizontal Bar Type	Average Horizontal Bar Spacing (mm)	Cover To Horizontal Reinforcement (mm)	Ferrosan Ref:	Column Type:	Sample	Cement			
Ground Floor Level Columns													
G6	25mmØ Smooth Bar*	350	68	9mmØ Smooth Bar*	300	55	123/124	1	-	-	-	-	
G7	Non Intrusive Location	330	33	Non Intrusive Location	300	31	125/126	1	-	-	-	-	
G10	Non Intrusive Location	330	44	Non Intrusive Location	300	44	129/130	1	-	-	-	-	
G11	Non Intrusive Location	330	54	Non Intrusive Location	300	60	131/132	1	-	-	-	-	
G17	28mmØ Smooth Bar*	350	32	9mmØ Smooth Bar*	300	23	141/142	2	0.01	0.03	3	16.3	
G18	28mmØ Smooth Bar*	420	12	9mmØ Smooth Bar*	400	3	143/144	2	0.01	0.07	3	-	
G20	Unable to scan due to metal cladding around column.												
G21	Unable to scan due to metal cladding around column.												
Ground Floor Level Core Walls									Wall Thickness				
G19	25mmØ Smooth Bar*	300	45	20mmØ Smooth Bar*	300	70	145	-	0.01	0.07	10	11.6	
G27	Not Accessible												
G28													
G29													
Ground Floor Level Slabs													
Location	Longitudinal Bar Type	Average Longitudinal Bar Spacing (mm)	Cover To Longitudinal Reinforcement (mm)	Transverse Bar Type	Average Transverse Bar Spacing (mm)	Cover To Transverse Reinforcement (mm)	Ferrosan Ref:	Slab Thickness (mm)	Chloride Content % by mass of		Depth of Carbonation (mm)	Cement Content	
									Sample	Cement			
G2 - Soffit	20mmØ Smooth Bar*	150	16	20mmØ Smooth Bar*	150	40	150	475	<0.01	<0.01	5	HAC Not present	
G3 - Soffit	20mmØ Smooth Bar*	150	18	20mmØ Smooth Bar*	150	37	151	475	<0.01	<0.01	3		
G4 - Soffit	20mmØ Smooth Bar*	150	18	20mmØ Smooth Bar*	150	35	152	475	<0.01	<0.01	5		
G8 - Slab Top	Non Intrusive Location	400	100	Non Intrusive Location	300	91	127	365	Non Intrusive Location				
G9 - Slab Top	Non Intrusive Location	300	102	Non Intrusive Location	300	120	128	365	0.01	0.08	3	9.9	
G12 - Slab Top	Non Intrusive Location	550	111	Non Intrusive Location	350	101	133	365	-	-	-	-	
G23	20mmØ Smooth Bar*	350	89	20mmØ Smooth Bar*	450	89	146	365	0.01	0.1	10	-	
G26	20mmØ Smooth Bar*	400	83	20mmØ Smooth Bar*	400	110	149	365	0.01	0.09	5	8.3	
Ground Floor Level Beams													
G1	Non Intrusive Location	75	49	Non Intrusive Location	100	39	110/111/112	B1	Non Intrusive Location				
G5	Non Intrusive Location	100	42	Non Intrusive Location	120	46	113/114/115	B1	Non Intrusive Location				
G13	Non Intrusive Location	200	18	Non Intrusive Location	400	38	134	B2	-	-	-	-	
G14	Non Intrusive Location	200	17	Non Intrusive Location	300	40	135	B2	-	-	-	-	
G15	16mmØ Smooth Bar*	200	17	9mmØ Smooth Bar*	300	40	135	B2	0.01	0.06	3	-	
G16	Non Intrusive Location	200	27	Non Intrusive Location	300	15	137	B2	-	-	-	-	
G22	Unable to scan due to metal cladding around column.												
G24	16mmØ Smooth Bar*	200	29	9mmØ Smooth Bar*	300	48	147	365	0.01	0.05	5	-	
G25	16mmØ Smooth Bar*	240	16	9mmØ Smooth Bar*	300	8	147	365	<0.01	<0.01	5	-	
Comments:		* = Bars exposed											
Column & Beam Dimensions - Reinforcement Layout													
Column Dimensions 						Beam Dimensions  ~16no bars in soffit of beam @ ~200 Centres							

3.6 mezzanine level



PLAN @ LEVEL 00 MEZZANINE

Notes

No.

Revision

Drawn Date	Checked Date

PROJECT:

Location:

Mezzanine

Job no.

Drawing no.

Revision

Drawn: BD Date:
 Approved: SG Date:
 Scale:
 Original Drawing A3



**Construction Testing
Solutions Ltd**

Client: Curtins

Site: CIS Tower - Manchester

Location: Ground Floor Level

Report Ref:

STR154

Report Date:

23/10/2019

Reported By:

B.Dimbleby

Summary Of Results

Location	Vertical Bar Type	Average Vertical Bar Spacing (mm)	Cover To Vertical Reinforcement (mm)	Horizontal Bar Type	Average Horizontal Bar Spacing (mm)	Cover To Horizontal Reinforcement (mm)	Ferrosan Ref:	Column Type:	Chloride Content % by mass of		Depth of Carbonation (mm)	Cement Content
									Sample	Cement		

Mezzanine Floor Level Slabs

Location	Longitudinal Bar Type	Average Longitudinal Bar Spacing (mm)	Cover To Longitudinal Reinforcement (mm)	Transverse Bar Type	Average Transverse Bar Spacing (mm)	Cover To Transverse Reinforcement (mm)	Ferrosan Ref:	Slab Thickness (mm)	Chloride Content % by mass of		Depth of Carbonation (mm)	Cement Content
									Sample	Cement		
M1	Non Intrusive Location	450	82	Non Intrusive Location	400	73	155	-	Non Intrusive Location			
M4	Non Intrusive Location	600	79	Non Intrusive Location	300	84	156	-	Non Intrusive Location			

Mezzanine Floor Level Beams

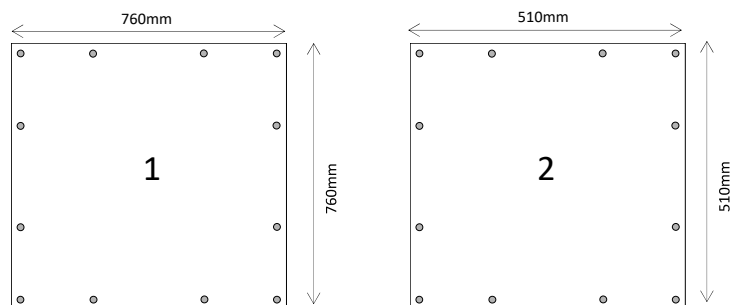
M3	Non Intrusive Location	170	30	Non Intrusive Location	300	19	153	B1	Non Intrusive Location			
M4	Non Intrusive Location	200	38	Non Intrusive Location	300	46	154	B1	Non Intrusive Location			

Comments:

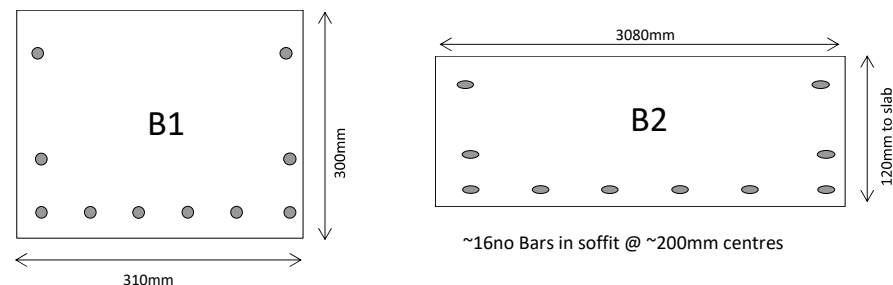
* = Bars exposed

Column & Beam Dimensions - Reinforcement Layout

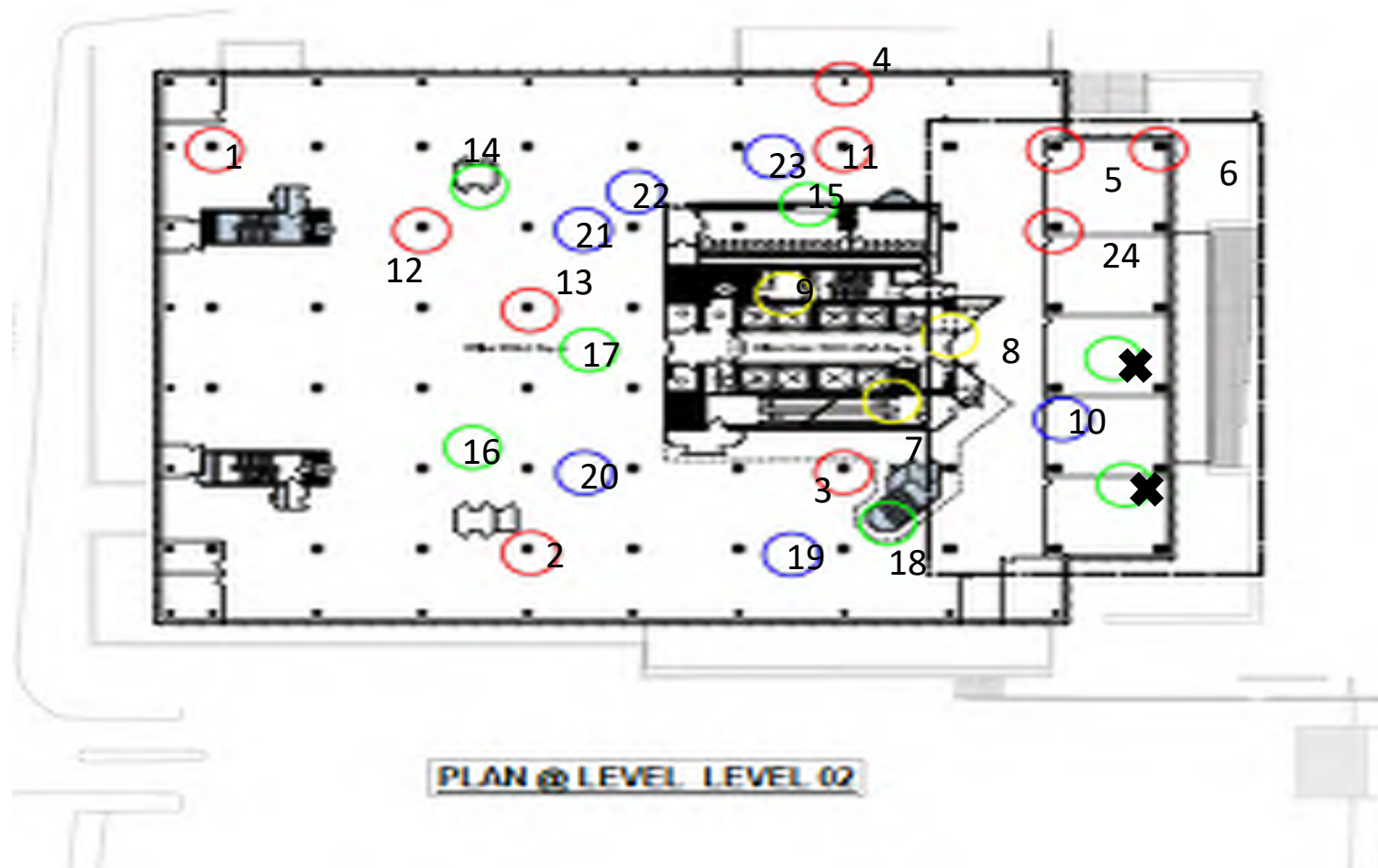
Column Dimensions



Beam Dimensions



3.7 Level 2



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Notes

No.

Revision

Drawn
Date

Checked
Date

PROJECT:

Location:

Level 2

Job no.

Drawing no.

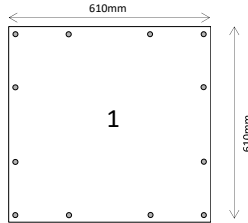
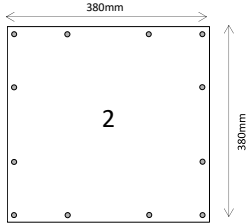
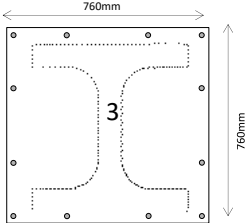
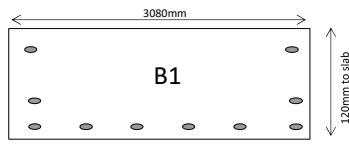
Revision

Drawn: BD Date:

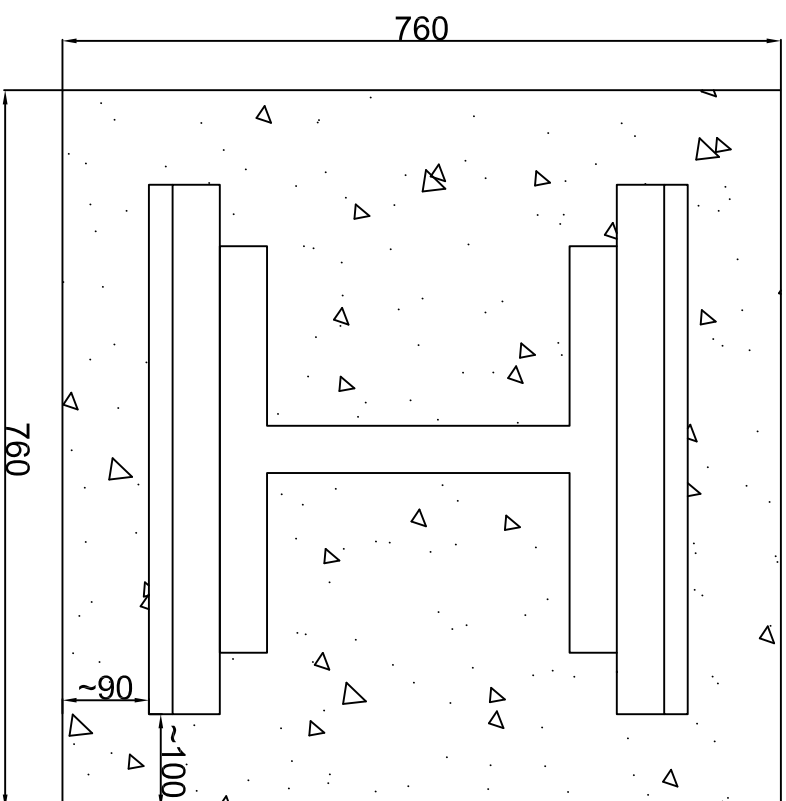
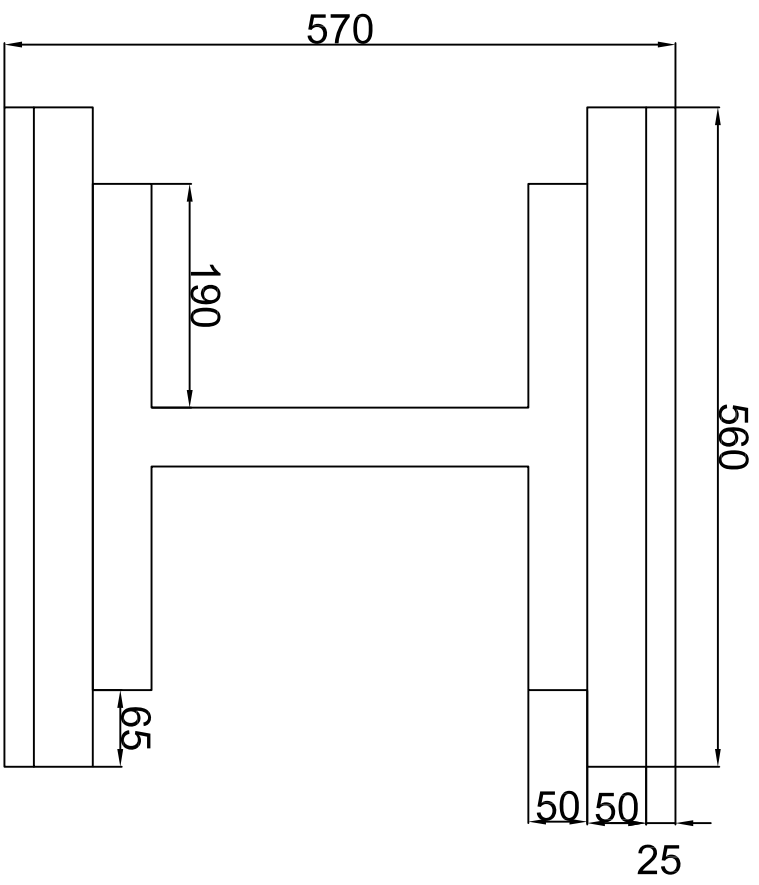
Approved: SG Date:

Scale:

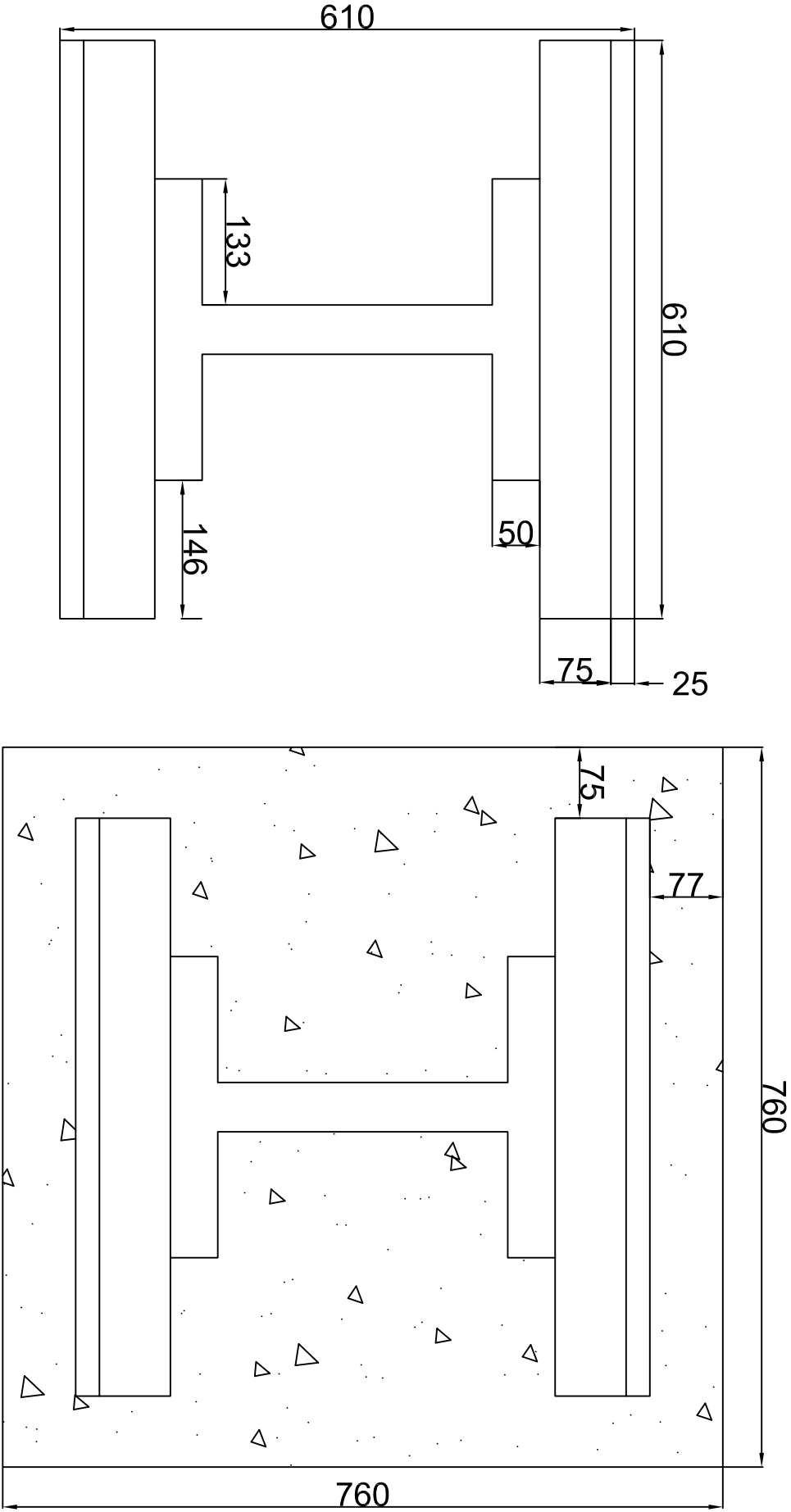
Original Drawing A3

		Client: Curtins						Report Ref: STR154					
		Site: CIS Tower - Manchester						Report Date: 22/10/2019					
		Location: Second Floor Level						Reported By: B.Dimbleby					
		Summary Of Results						Chloride Content % by mass of		Depth of Carbonation (mm)	Cement Content		
Location	Vertical Bar Type	Average Vertical Bar Spacing (mm)	Cover To Vertical Reinforcement (mm)	Horizontal Bar Type	Average Horizontal Bar Spacing (mm)	Cover To Horizontal Reinforcement (mm)	Ferrosan Ref:	Column Type:	Sample			Cement	
Second Floor Level Columns													
2 - 1	28mmØ Smooth Bar*	220	48	9mmØ Smooth Bar*	300	47	204/205	1	-	-	3	13.2	
2 - 2	28mmØ Smooth Bar*	220	55	9mmØ Smooth Bar*	300	36	202/203	1	<0.01	<0.01	5	-	
2 - 3	28mmØ Smooth Bar*	220	50	9mmØ Smooth Bar*	300	36	200/201	1	<0.01	<0.01	0	8.3	
2 - 4	28mmØ Smooth Bar*	230	56	9mmØ Smooth Bar*	330	36	206/207	2	<0.01	<0.01	5	8	
2 - 5	6mmØ Smooth Bar*	150	42	6mmØ Smooth Bar*	150	36	-	3	<0.01	<0.01	3	-	
2 - 6	6mmØ Smooth Bar*	150	44	6mmØ Smooth Bar*	150	37	-	3	<0.01	<0.01	3	-	
2 - 11	Non Intrusive Location	220	24	Non Intrusive Location	250	12	214/215	1	-	-	-	-	
2 - 12	Non Intrusive Location	220	62	Non Intrusive Location	300	61	216/217	1	-	-	-	-	
2 - 13	Non Intrusive Location	220	71	Non Intrusive Location	300	66	218/219	1	-	-	-	-	
2 - 24	Non Intrusive Location	220	71	Non Intrusive Location	300	66	-	1	-	-	-	-	
Second Floor Level Core Walls								Wall Thickness					
2 - 7	20mmØ Smooth Bar*	300	45	16mmØ Smooth Bar*	300	25	208	630	0.01	0.06	5	10.7	
2 - 8	20mmØ Smooth Bar*	300	68	16mmØ Smooth Bar*	300	47	210	760	<0.01	<0.01	3	11.5	
2 - 9	20mmØ Smooth Bar*	300	90	16mmØ Smooth Bar*	300	75	209	630	0.01	0.05	5	-	
Second Floor Level Slabs													
Location	Longitudinal Bar Type	Average Longitudinal Bar Spacing (mm)	Cover To Longitudinal Reinforcement (mm)	Transverse Bar Type	Average Transverse Bar Spacing (mm)	Cover To Transverse Reinforcement (mm)	Ferrosan Ref:	Slab Thickness (mm)	Chloride Content % by mass of		Depth of Carbonation (mm)	Cement Content	
2 - 14	Non Intrusive Location	200	17	Non Intrusive Location	200	26	221	250	-	-	-	-	
2 - 15	Non Intrusive Location	200	18	Non Intrusive Location	200	34	220	250	-	-	-	-	
2 - 16	Non Intrusive Location	200	18	Non Intrusive Location	200	45	222	250	-	-	-	-	
2 - 17	Non Intrusive Location	200	21	Non Intrusive Location	200	27	223	250	-	-	-	-	
2 - 18	Non Intrusive Location	200	22	Non Intrusive Location	200	15	224	250	-	-	-	-	
Second Floor Level Beams													
2 - 19	12mmØ Ribbed Bar	240	36	12mmØ Ribbed Bar	400	30	225	B1	0.01	0.05	3	10.3	
2 - 20	Non Intrusive Location	240	21	Non Intrusive Location	400	24	226	B1	-	-	-	-	
2 - 21	Non Intrusive Location	300	31	Non Intrusive Location	400	11	227	B1	-	-	-	-	
2 - 22	Non Intrusive Location	240	31	Non Intrusive Location	400	18	228	B1	-	-	-	-	
2 - 23	Non Intrusive Location	240	18	Non Intrusive Location	300	27	229	B1	-	-	-	-	
2 - 10	Concrete encased steel beam						211/212/213	B2	0.01	0.05	-	-	
Comments:		* = Bars exposed											
Column & Beam Dimensions - Reinforcement Layout													
Column Dimensions   							Beam Dimensions  ~16no Bars in soffit @ ~200mm centres						

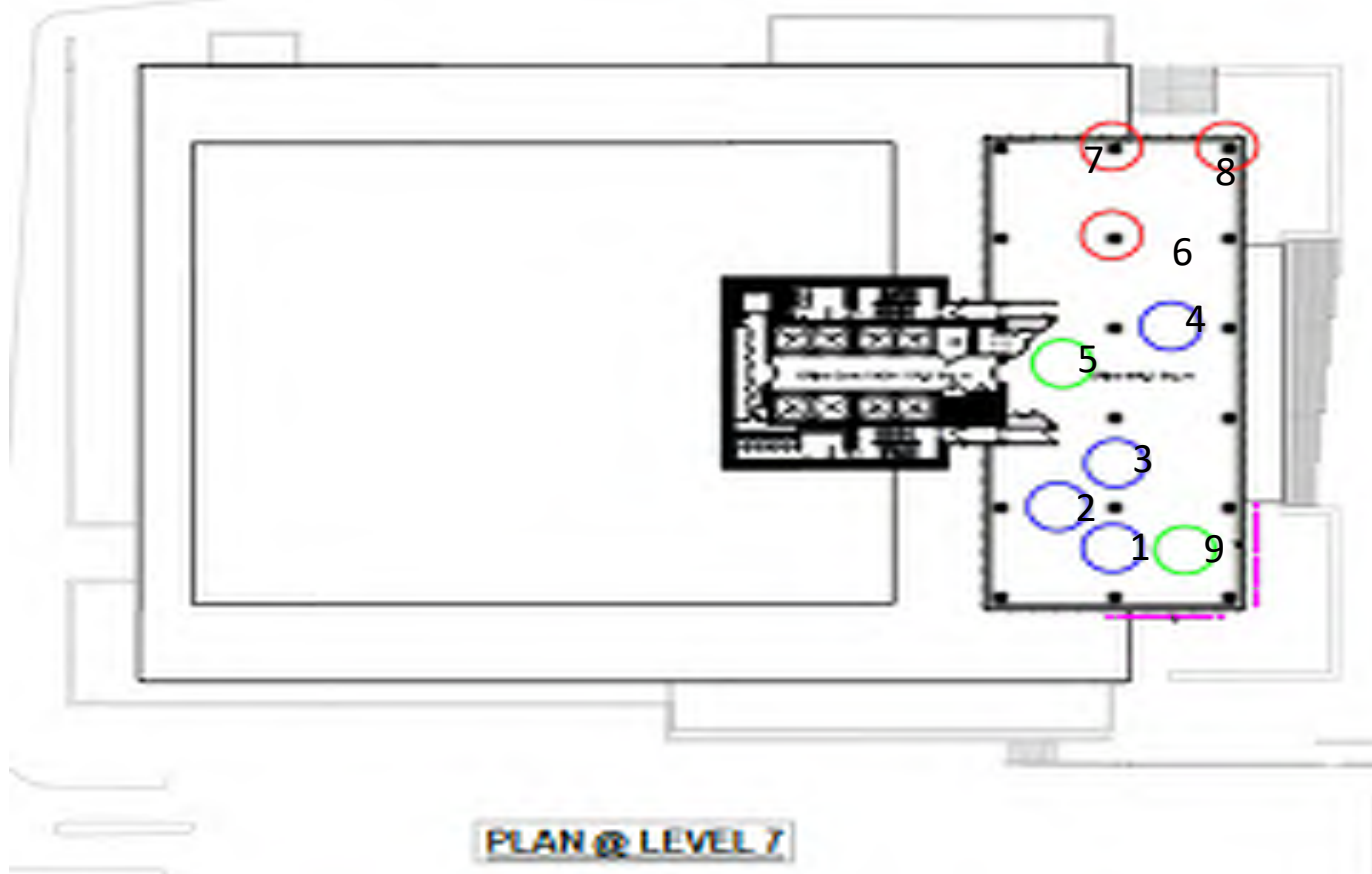
Level 2 Location 5 & 6



Level 2 Location 24



3.8 Level 7



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Notes	No.	Revision	Drawn Date	Checked Date	PROJECT:		
					Location: Level 7	Drawn: BD	Date:
						Approved: SG	Date:
						Scale: Original Drawing A3	
					Job no.	Drawing no.	Revision



**Construction Testing
Solutions Ltd**

Client: Curtins

Site: CIS Tower - Manchester

Location: Seventh Floor Level

Report Ref:

STR154

Report Date:

24/10/2019

Reported By:

B.Dimbleby

Summary Of Results

		Summary Of Results							Chloride Content % by mass of		Depth of Carbonation (mm)	Cement Content
Location	Vertical Bar Type	Average Vertical Bar Spacing (mm)	Cover To Vertical Reinforcement (mm)	Horizontal Bar Type	Average Horizontal Bar Spacing (mm)	Cover To Horizontal Reinforcement (mm)	Ferroscan Ref:	Column Type:				
Seventh Floor Level Columns												
7 - 6	6mmØ Smooth Bar*	150	45	6mmØ Smooth Bar*	300	36	-	3	<0.01	<0.01	3	-
7 - 7	6mmØ Smooth Bar*	150	48	6mmØ Smooth Bar*	300	34	-	3	<0.01	<0.01	5	-
7 - 8	6mmØ Smooth Bar*	150	39	6mmØ Smooth Bar*	300	34	-	3	<0.01	<0.01	3	-

Seventh Floor Level Slabs

Location	Longitudinal Bar Type	Average Longitudinal Bar Spacing (mm)	Cover To Longitudinal Reinforcement (mm)	Transverse Bar Type	Average Transverse Bar Spacing (mm)	Cover To Transverse Reinforcement (mm)	Ferroscan Ref:	Slab Thickness (mm)	Chloride Content % by mass of		Depth of Carbonation (mm)	Cement Content
									Sample	Cement		
7-5	Non Intrusive Location	150	87	Non Intrusive Location	170	83	230	250	-	-	-	-
7 - 9	Non Intrusive Location	150	84	Non Intrusive Location	150	87	231	250	-	-	-	-

Seventh Floor Level Beams

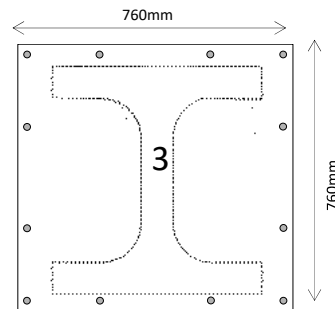
7 - 1	Steel Beams - Dimensions can be found on following pages.											
7 - 2												
7 - 3												
7 - 4												

Comments:

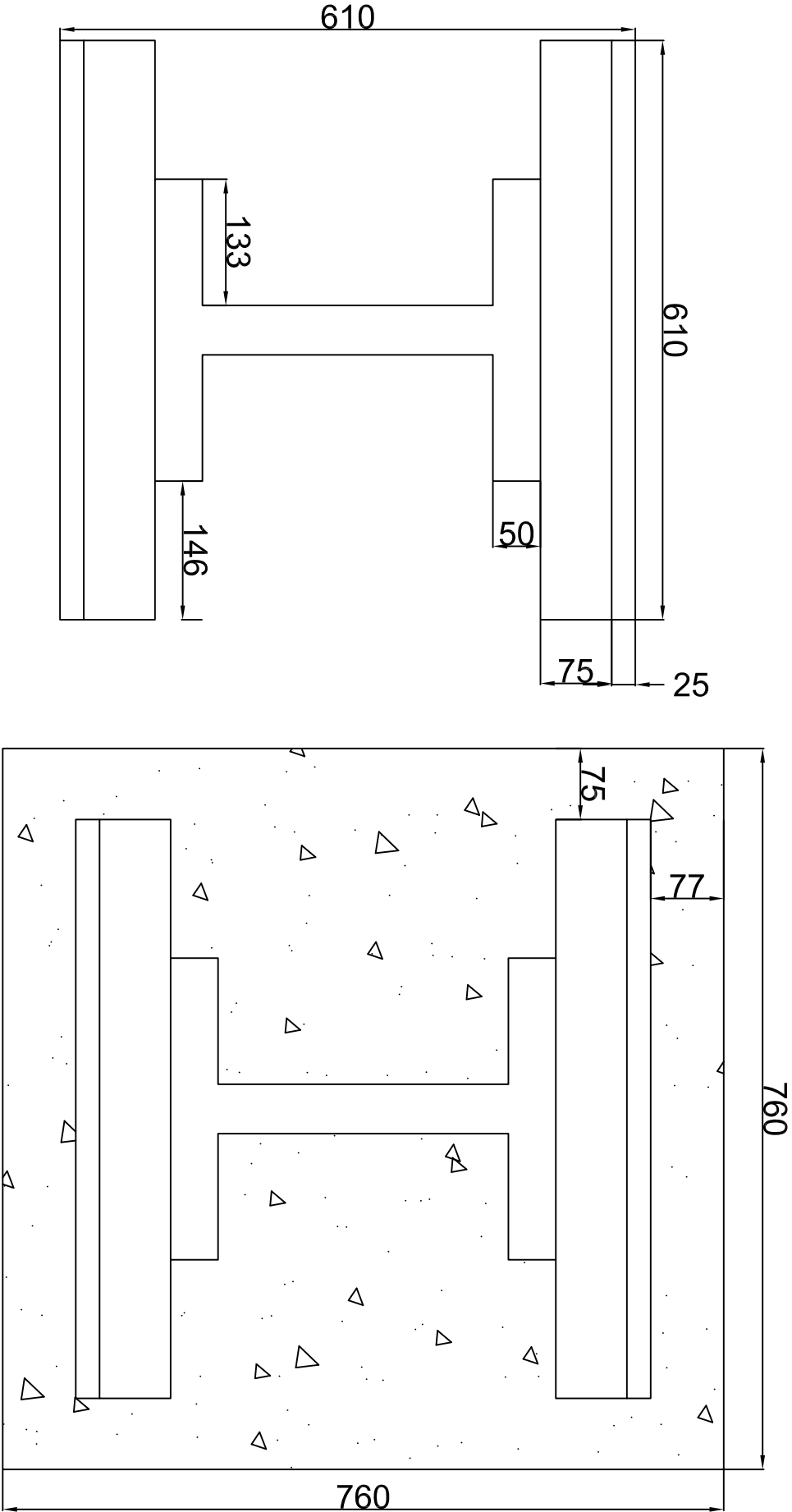
* = Bars exposed

Column & Beam Dimensions - Reinforcement Layout

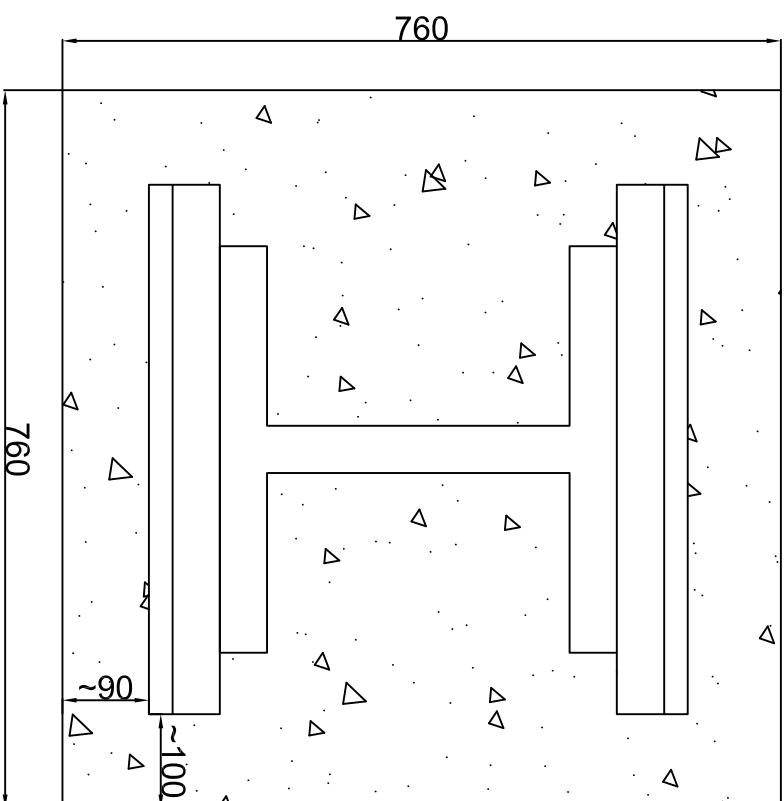
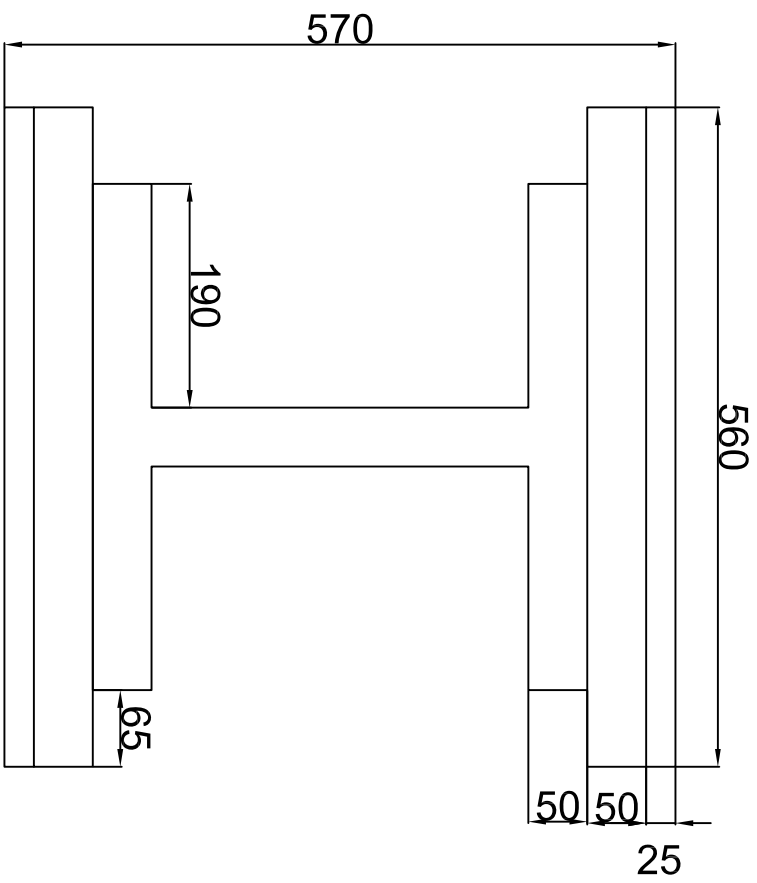
Column Dimensions



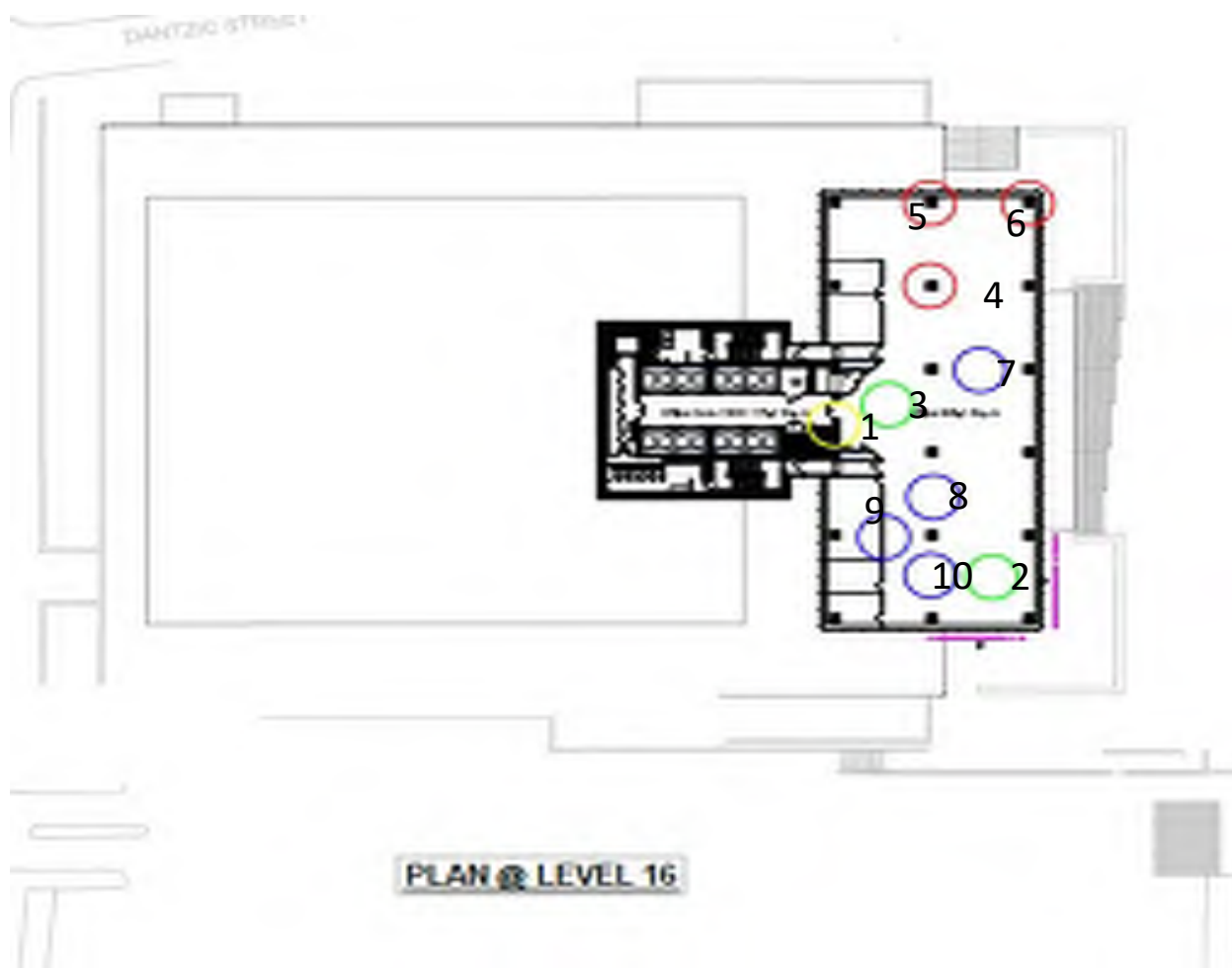
Level 7 Location 6



Level 7 Location 7 & 8



3.9 Level 16



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Notes

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Revision

Drawn
Date

Checked
Date

PROJECT:

Location:

Level 16

Job no.

Drawing no.

Revision

Drawn: BD Date:

Approved: SG Date:

Scale:

Original Drawing A3



**Construction Testing
Solutions Ltd**

Client: Curtins

Site: CIS Tower - Manchester

Location: Sixteenth Floor Level

Report Ref:

STR154

Report Date:

24/10/2019

Reported By:

B.Dimbleby

Summary Of Results

Location	Vertical Bar Type	Average Vertical Bar Spacing (mm)	Cover To Vertical Reinforcement (mm)	Horizontal Bar Type	Average Horizontal Bar Spacing (mm)	Cover To Horizontal Reinforcement (mm)	Ferrosan Ref:	Column Type:	Chloride Content, % by mass of		Depth of Carbonation (mm)	Cement Content
									Sample	Cement		
Sixteenth Floor Level Columns												
16 - 4	6mmØ Smooth Bar	300	47	6mmØ Smooth Bar	300	36	-	3	0.01	0.04	3	-
16 - 5	6mmØ Smooth Bar	300	45	6mmØ Smooth Bar	300	39	-	3	0.01	0.04	3	-
16 - 6	6mmØ Smooth Bar	300	49	6mmØ Smooth Bar	300	41	-	3	<0.01	<0.01	3	-

Sixteenth Floor Level Core Walls

16 - 1	Masonry Wall											
--------	--------------	--	--	--	--	--	--	--	--	--	--	--

Sixteenth Floor Level Slabs

Location	Longitudinal Bar Type	Average Longitudinal Bar Spacing (mm)	Cover To Longitudinal Reinforcement (mm)	Transverse Bar Type	Average Transverse Bar Spacing (mm)	Cover To Transverse Reinforcement (mm)	Ferrosan Ref:	Slab Thickness (mm)	Chloride Content % by mass of		Depth of Carbonation (mm)	Cement Content
									Sample	Cement		
16 - 2	Non Intrusive Location	130	86	Non Intrusive Location	150	65	235	275	-	-	-	-
16 - 3	Non Intrusive Location	150	96	Non Intrusive Location	150	87	234	275	-	-	-	-

Sixteenth Floor Level Beams

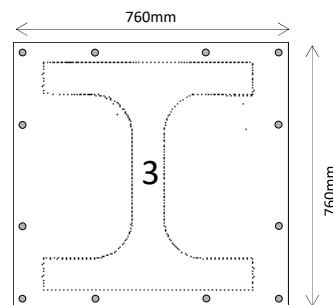
16 - 7	Steel beams - dimensions on following pages											
16 - 8												
16 - 9												
16 - 10												
16 - 11	16mmØ Smooth Bar	85	19	6mmØ Smooth Bar	170	19	236/237/238	B1	-	-	3	-

Comments:

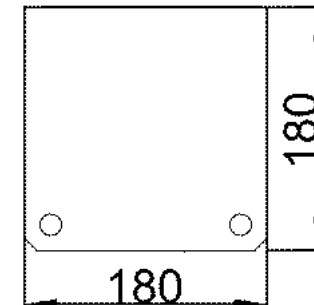
* = Bars exposed

Column & Beam Dimensions - Reinforcement Layout

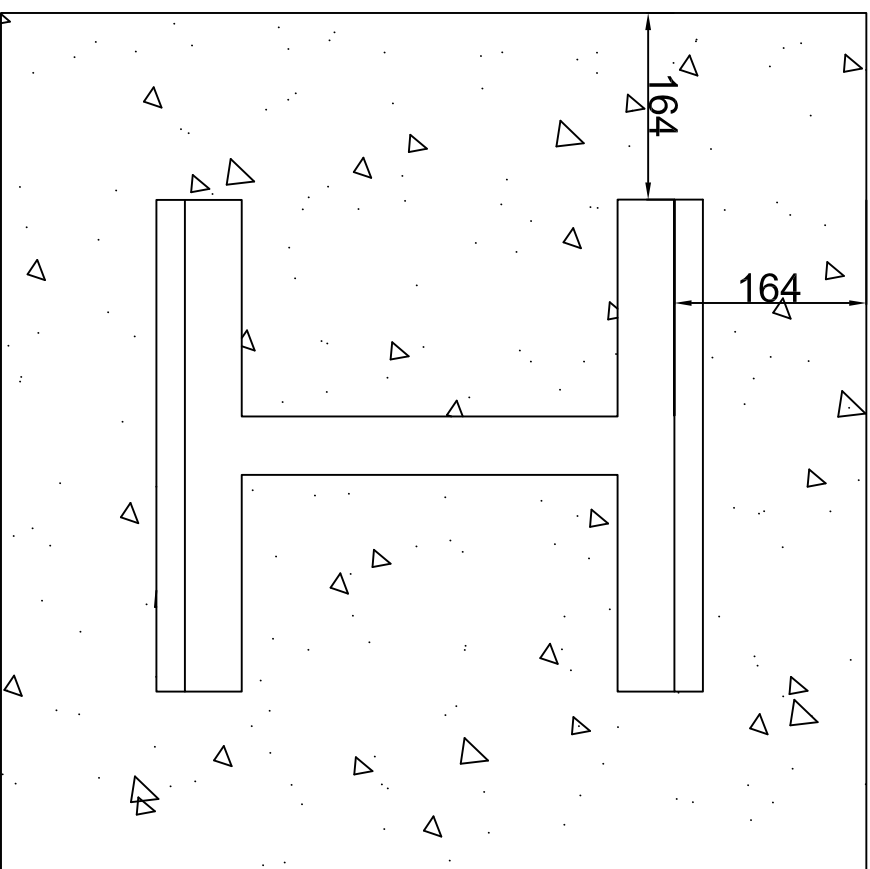
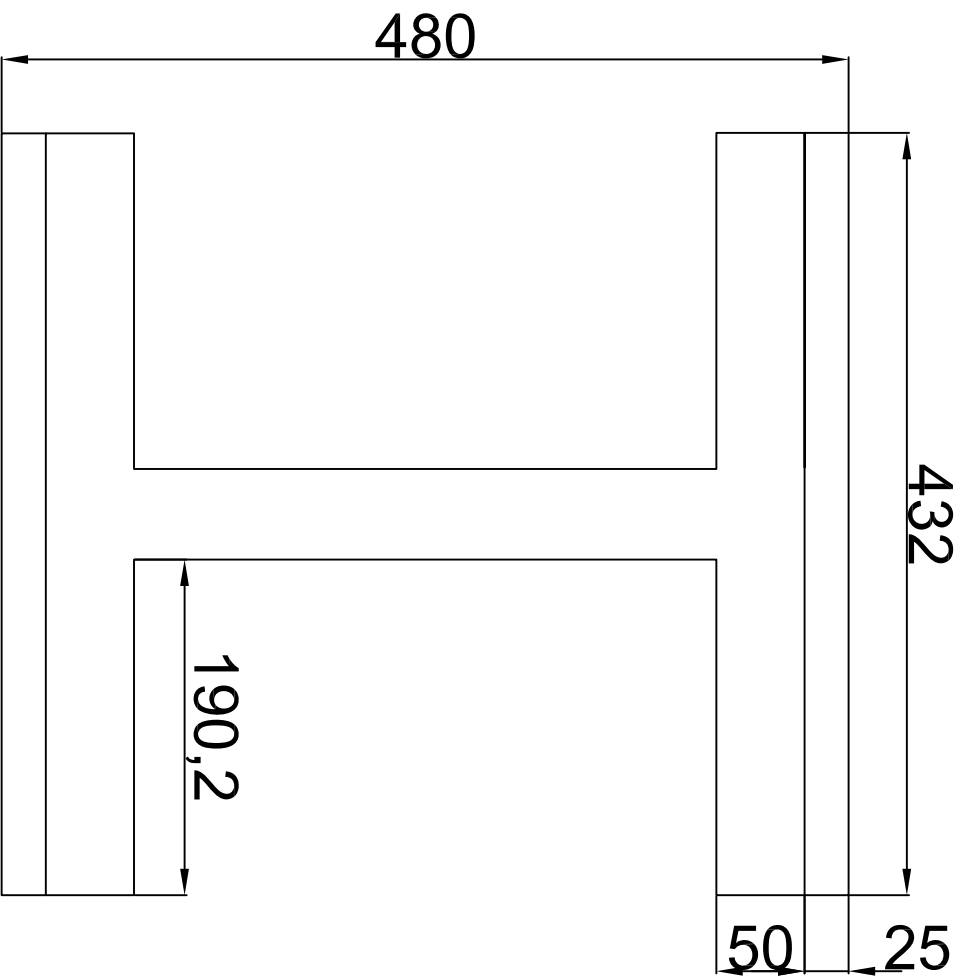
Column Dimensions



Beam Dimensions



Level 6 Location 4, 5 & 6



3.10 Level 25



**Construction Testing
Solutions Ltd**

Client: Curtins

Site: CIS Tower - Manchester

Location: 25th Floor

Report Ref:

STR154

Report Date:

24/10/2019

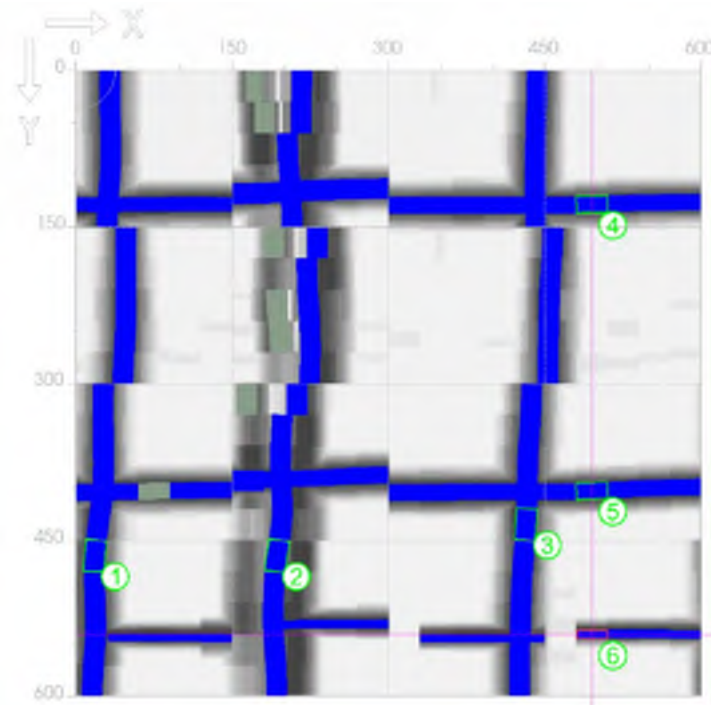
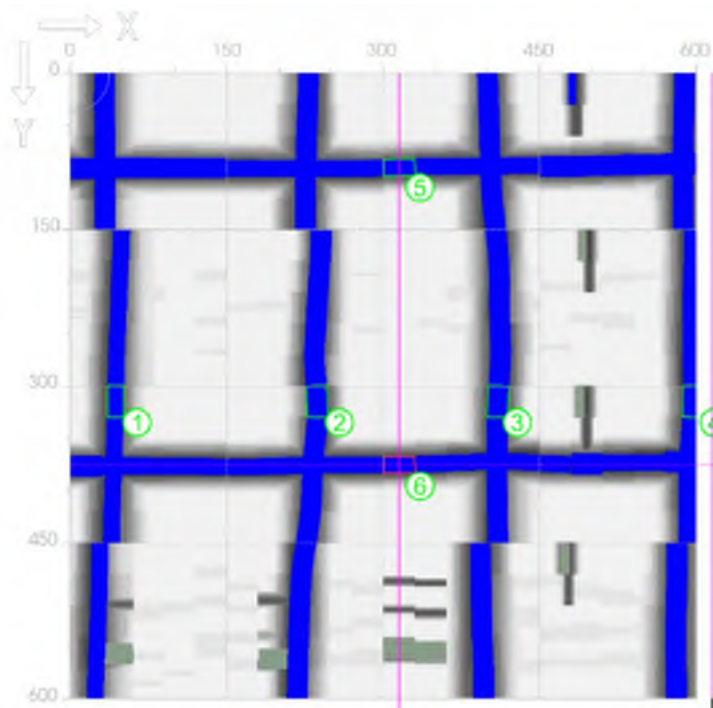
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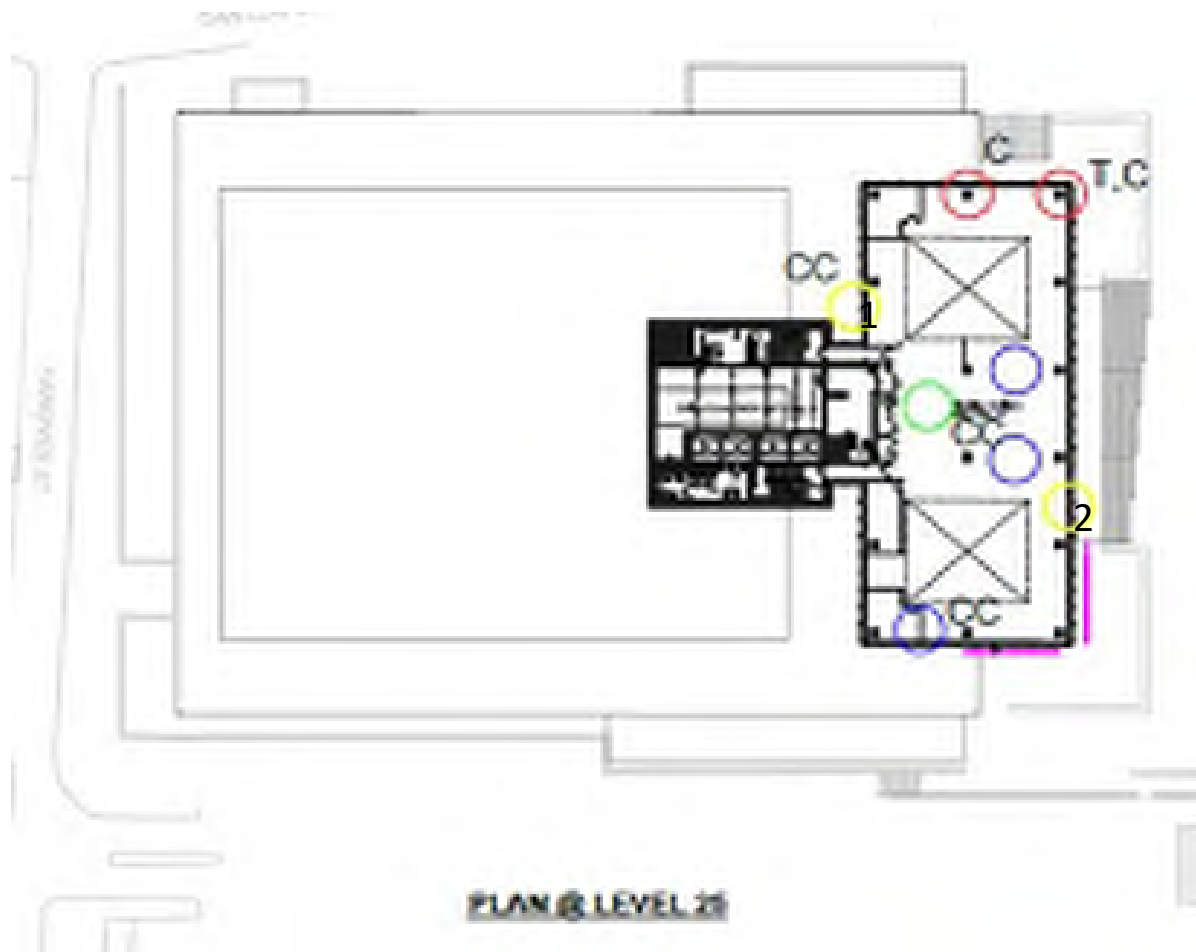
B.Dimbleby

Summary Of Results

Location	Vertical Bar Type	Average Vertical Bar Spacing (mm)	Cover To Vertical Reinforcement (mm)	Horizontal Bar Type	Average Horizontal Bar Spacing (mm)	Cover To Horizontal Reinforcement (mm)	Ferroscan Ref:	Column Type:	mass of		Depth of Carbonation (mm)	Cement Content
									Sample	Cement		
25th Floor External Walls												
25 - 1	Non Intrusive Location	150	55	Non Intrusive Location	300	39	232	-	-	-	-	-
25 - 2	Non Intrusive Location	200	55	Non Intrusive Location	300	41	233	-	-	-	-	-

External Walls were found to be reinforced concrete bar sizes were unable to be measured as the locations were none intrusive due to the presence of asbestos





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Notes

No.

Revision

Drawn
Date

Checked
Date

PROJECT:

Location:

Level 25

Job no.

Drawing no.

Revision

Drawn: BD Date:

Approved: SG Date:

Scale:

Original Drawing A3

4.0 Appendix B – Laboratory test results

4.1 Concrete chemistry



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Doncaster, DN7 4JU

24 October 2019
CTSL/16444/isj
Page 1 of 10

CERTIFICATE of ANALYSIS

CIS Tower, Manchester

Cement content of concrete samples

Sample ref.:	14101	14102	14103	14104
Client's ref.:	B1-1	B1-5	B1-7	B1-9
Date received:	8 October 2019			
Mass received (g) :	26	16	21	25
Type of sample:	concrete dust and lumps			
Date of analysis:	16 to 17 October 2019			
<i>Determined values</i>				
Insoluble residue (%)	75.2	81.5	77.5	62.1
Soluble silica (%)	3.2	2.7	2.7	5.7
Calcium oxide (%)	10.9	7.6	8.9	16.6
<i>Calculated values</i>				
<i>Cement content (%)</i>				
ex silica	14.0	11.0	11.1	26.6
ex lime	16.9	11.8	13.8	25.7
preferred/mean value %	14.0	11.4	11.1	26.2
<i>Aggregate content (%)</i>				
ex silica	82.8	86.5	86.3	67.3
ex lime	79.3	85.5	83.0	68.3
preferred/mean value	82.8	86.0	86.3	67.8
<i>Aggregate/cement ratio</i>				
ex silica	5.9	7.9	7.8	2.5
ex lime	4.7	7.2	6.0	2.7
preferred/mean value	5.9	7.5	7.8	2.6

Sample ref.:	14105	14106	14107	14108
Client's ref.:	B1-12	B1-14	B1-15	B1-17
Date received:	8 October 2019			
Mass received (g) :	16	19	13	26
Type of sample:	concrete dust			
Date of analysis:	16 to 17 October 2019			
<i>Determined values</i>				
Insoluble residue (%)	74.4	70.3	80.3	66.2
Soluble silica (%)	3.2	2.7	2.6	3.1
Calcium oxide (%)	10.8	12.0	8.1	13.6
<i>Calculated values</i>				
<i>Cement content (%)</i>				
ex silica	13.7	11.1	10.6	13.0
ex lime	16.7	18.6	12.5	21.0
preferred/mean value %	13.7	11.1	10.6	13.0
<i>Aggregate content (%)</i>				
ex silica	83.1	86.3	87.0	84.0
ex lime	79.4	77.1	84.6	74.1
preferred/mean value	83.1	86.3	87.0	84.0
<i>Aggregate/cement ratio</i>				
ex silica	6.1	7.8	8.2	6.5
ex lime	4.8	4.1	6.8	3.5
preferred/mean value	6.1	7.8	8.2	6.5

Sample ref.:	14125	14126	14127	14128
Client's ref.:	B1L-2	B1L-5	B1L-7	B1L-8
Date received:	8 October 2019			
Mass received (g) :	17	17	9	11
Type of sample:	concrete dust			
Date of analysis:	16 to 17 October 2019			
<i>Determined values</i>				
Insoluble residue (%)	77.5	76.0	74.3	60.0
Soluble silica (%)	3.0	3.2	3.1	4.8
Calcium oxide (%)	9.5	10.1	10.4	18.2
<i>Calculated values</i>				
<i>Cement content (%)</i>				
ex silica	12.7	13.7	13.3	22.1
ex lime	14.7	15.6	16.2	28.2
preferred/mean value %	12.7	13.7	13.3	22.1
<i>Aggregate content (%)</i>				
ex silica	84.4	83.1	83.6	72.9
ex lime	81.9	80.8	80.1	65.3
preferred/mean value	84.4	83.1	83.6	72.9
<i>Aggregate/cement ratio</i>				
ex silica	6.7	6.1	6.3	3.3
ex lime	5.6	5.2	4.9	2.3
preferred/mean value	6.7	6.1	6.3	3.3

Sample ref.:	14129	14130	14131	14132
Client's ref.:	B1L-9	B1L-11	B1L-12	B1L-13
Date received:	8 October 2019			
Mass received (g) :	16	12	29	14
Type of sample:	concrete dust lumps			
Date of analysis:	16 to 17 October 2019			
<i>Determined values</i>				
Insoluble residue (%)	74.6	78.7	83.3	77.4
Soluble silica (%)	3.3	2.8	2.4	3.4
Calcium oxide (%)	10.2	8.4	6.9	9.5
<i>Calculated values</i>				
<i>Cement content (%)</i>				
ex silica	14.2	11.7	9.7	14.7
ex lime	15.8	13.1	10.7	14.7
preferred/mean value %	14.2	11.7	9.7	14.7
<i>Aggregate content (%)</i>				
ex silica	82.5	85.6	88.1	82.0
ex lime	80.6	83.9	86.8	81.9
preferred/mean value	82.5	85.6	88.1	81.9
<i>Aggregate/cement ratio</i>				
ex silica	5.8	7.3	9.1	5.6
ex lime	5.1	6.4	8.1	5.6
preferred/mean value	5.8	7.3	9.1	5.6

Sample ref.:	14133	14134	14146	14147
Client's ref.:	B1L-16	B1L-17	B2-2	B2-3
Date received:	8 October 2019			
Mass received (g) :	9	8	24	24
Type of sample:	concrete dust			
Date of analysis:	17 to 23 October 2019			
<i>Determined values</i>				
Insoluble residue (%)	70.6	57.5	78.2	74.8
Soluble silica (%)	2.5	2.1	3.1	3.9
Calcium oxide (%)	11.2	15.4	10.1	12.4
<i>Calculated values</i>				
<i>Cement content (%)</i>				
ex silica	10.4	8.0	13.4	17.3
ex lime	17.3	23.8	15.7	19.2
preferred/mean value %	10.4	8.0	13.4	17.3
<i>Aggregate content (%)</i>				
ex silica	87.2	90.2	83.5	78.8
ex lime	78.7	70.7	80.7	76.4
preferred/mean value	87.2	90.2	83.5	78.8
<i>Aggregate/cement ratio</i>				
ex silica	8.4	11.3	6.2	4.6
ex lime	4.6	3.0	5.1	4.0
preferred/mean value	8.4	11.3	6.2	4.6

Sample ref.:	14148	14149	14150	14151
Client's ref.:	B2-7	B2-9	B2-10	B2-11
Date received:	8 October 2019			
Mass received (g) :	21	7	13	18
Type of sample:	concrete dust			
Date of analysis:	21 to 23 October 2019			
<i>Determined values</i>				
Insoluble residue (%)	72.1	69.1	69.4	74.9
Soluble silica (%)	4.2	4.7	4.5	4.1
Calcium oxide (%)	12.6	12.3	12.6	10.9
<i>Calculated values</i>				
<i>Cement content (%)</i>				
ex silica	18.9	21.3	20.2	18.3
ex lime	19.6	19.1	19.6	16.9
preferred/mean value %	19.2	19.1	19.9	16.9
<i>Aggregate content (%)</i>				
ex silica	76.8	73.7	75.1	77.5
ex lime	76.0	76.5	76.0	79.3
preferred/mean value	76.4	76.5	75.5	79.3
<i>Aggregate/cement ratio</i>				
ex silica	4.1	3.5	3.7	4.2
ex lime	3.9	4.0	3.9	4.7
preferred/mean value	4.0	4.0	3.8	4.7

Sample ref.:	14166	14167	14168	14169
Client's ref.:	B3-1	B3-5	B3-11	B3-15
Date received:	8 October 2019			
Mass received (g) :	22	13	15	4
Type of sample:	concrete dust and lumps			
Date of analysis:	21 to 23 October 2019			
<i>Determined values</i>				
Insoluble residue (%)	84.1	79.1	81.7	75.1
Soluble silica (%)	2.0	3.7	2.9	2.0
Calcium oxide (%)	6.6	8.1	8.3	10.0
<i>Calculated values</i>				
<i>Cement content (%)</i>				
ex silica	7.7	16.4	12.3	7.8
ex lime	10.2	12.5	12.9	15.5
preferred/mean value %	7.7	12.5	12.6	7.8
<i>Aggregate content (%)</i>				
ex silica	90.5	79.8	84.9	90.4
ex lime	87.5	84.6	84.1	81.0
preferred/mean value	90.5	84.6	84.5	90.4
<i>Aggregate/cement ratio</i>				
ex silica	11.7	4.9	6.9	11.6
ex lime	8.6	6.8	6.5	5.2
preferred/mean value	11.7	6.8	6.7	11.6

Sample ref.:	14170
Client's ref.:	B3-16
Date received:	8 October 2019
Mass received (g) :	5
Type of sample:	concrete dust and lumps
Date of analysis:	21 to 23 October 2019
<i>Determined values</i>	
Insoluble residue (%)	78.3
Soluble silica (%)	2.3
Calcium oxide (%)	9.1
<i>Calculated values</i>	
<i>Cement content (%)</i>	
ex silica	9.1
ex lime	14.2
preferred/mean value %	9.1
<i>Aggregate content (%)</i>	
ex silica	88.8
ex lime	82.6
preferred/mean value	88.8
<i>Aggregate/cement ratio</i>	
ex silica	9.8
ex lime	5.8
preferred/mean value	9.8

The cement contents were determined in accordance with B.S. 1881:Part 124:2015. The silica content was determined by atomic absorption spectrophotometric method.

Assumptions used for the cement and aggregate content calculations:

Silica content of cement (CEM I)	=	20.2 %
Soluble silica content of aggregate	=	0.5 %
Calcium oxide content of cement (CEM I)	=	64.5 %

Chloride and high alumina cement content of concrete samples

Date received : 8 October 2019
Mass received : 5 to 58 g
Type of sample : concrete dust and lumps
Date of analysis : 17 to 21 October 2019
Method of testing : B.S.1881:Part 124:2015 - chloride
BRE IS 15/74 - HAC

Sample ref.	Client's ref.		Chloride content	
			% by mass of	
			sample	cement
14087	B1	1	<0.01	<0.01
14088		2	0.01	0.05
14089		3	<0.01	<0.01
14090		4	<0.01	<0.01
14091		5	<0.01	<0.01
14092		6	<0.01	<0.01
14093		7	<0.01	<0.01
14094		9	<0.01	<0.01
14095		12	<0.01	<0.01
14096		13	0.01	0.04
14097		14	0.01	0.09
14098		15	0.01	0.08
14099		16	0.01	0.07
14100		17	<0.01	<0.01
14109	B1L	1	0.01	0.06
14110		2	<0.01	<0.01
14111		3	0.01	0.06
14112		4	<0.01	<0.01
14113		5	<0.01	<0.01
14114		6	<0.01	<0.01
14115		7	<0.01	<0.01
14116		8	0.01	0.05
14117		9	<0.01	<0.01
14118		11	<0.01	<0.01
14119		12	<0.01	<0.01
14120		13	0.01	0.05
14121		14	<0.01	<0.01
14122		15	<0.01	<0.01
14123		16	<0.01	<0.01
14124		17	0.01	0.07
14135	B2	1	<0.01	<0.01
14136		2	0.02	0.12
14137		3	0.02	0.09
14138		4	0.02	0.14
14139		5	0.02	0.11
14140		6	0.02	0.13

Sample ref.	Client's ref.		Chloride content	
			% by mass of	
			sample	cement
14141	B2	7	0.03	0.15
14142		8	0.03	0.20
14143		9	0.04	0.22
14144		10	0.06	0.29
14145		11	0.03	0.20
14152	B3	1	0.01	0.06
14153		4	<0.01	<0.01
14154		5	<0.01	<0.01
14155		6	<0.01	<0.01
14156		7	<0.01	<0.01
14157		8	0.01	0.05
14158		9	0.01	0.08
14159		10	<0.01	<0.01
14160		11	<0.01	<0.01
14161		12	<0.01	<0.01
14162		13	0.01	0.11
14163		14	<0.01	<0.01
14164		15	<0.01	<0.01
14165		16	<0.01	<0.01

Note:

Where the cement content was determined the actual figure was used, otherwise the mean determined content for each group was assumed for the calculations as follows:

B1 - 13.9 %
B1L - 13.1 %
B2 - 17.6 %
B3 - 9.9 %

Sample ref.	Client's ref.		Presence of HAC
14171	B3	4- HAC	not present
14172		5- HAC	not present
14173		8- HAC	not present
14174		9- HAC	not present
14175		12- HAC	not present

Results relate to the samples received.

End of results



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CERTIFICATE of ANALYSIS

CIS Tower, Manchester

Cement content of concrete samples

Sample ref.:	14209	14210	14211	14212
Client's ref.:	B1-20	G-17	G-19	G-9
Date received:	9 October 2019			
Mass received (g) :	10	12	23	70
Type of sample:	concrete dust and lumps			
Date of analysis:	14 to 17 October 2019			
<i>Determined values</i>				
Insoluble residue (%)	79.9	75.0	81.5	81.9
Soluble silica (%)	2.8	4.1	2.7	2.4
Calcium oxide (%)	8.5	10.5	7.6	7.5
<i>Calculated values</i>				
<i>Cement content (%)</i>				
ex silica	11.8	18.2	11.3	9.9
ex lime	13.2	16.3	11.8	11.7
preferred/mean value %	11.8	16.3	11.6	9.9
<i>Aggregate content (%)</i>				
ex silica	85.5	77.6	86.1	87.8
ex lime	83.7	79.9	85.5	85.7
preferred/mean value	85.5	79.9	85.8	87.8
<i>Aggregate/cement ratio</i>				
ex silica	7.2	4.3	7.6	8.9
ex lime	6.3	4.9	7.3	7.3
preferred/mean value	7.2	4.9	7.4	8.9

Sample ref.:	14213	14214	14215	14216
Client's ref.:	G-26	G-24	L2-1	Level 2 Location 3
Date received:	9 October 2019			
Mass received (g) :	11	7	27	11
Type of sample:	concrete dust			
Date of analysis:	14 to 17 October 2019			
<i>Determined values</i>				
Insoluble residue (%)	82.3	76.9	80.7	80.8
Soluble silica (%)	2.1	3.3	3.0	2.1
Calcium oxide (%)	7.0	9.6	8.7	8.0
<i>Calculated values</i>				
<i>Cement content (%)</i>				
ex silica	8.3	14.2	12.9	8.3
ex lime	10.9	14.9	13.4	12.4
preferred/mean value %	8.3	14.6	13.2	8.3
<i>Aggregate content (%)</i>				
ex silica	89.8	82.5	84.1	89.8
ex lime	86.6	81.6	83.5	84.8
preferred/mean value	89.8	82.0	83.8	89.8
<i>Aggregate/cement ratio</i>				
ex silica	10.9	5.8	6.5	10.9
ex lime	8.0	5.5	6.2	6.9
preferred/mean value	10.9	5.6	6.4	10.9

Sample ref.:	14217	14218	14219
Client's ref.:	Level 2 Location 4	Level 2 Location 7	Level 2 Location 8
Date received:	9 October 2019		
Mass received (g) :			
Type of sample:	concrete dust		
Date of analysis:	14 to 17 October 2019		
<i>Determined values</i>			
Insoluble residue (%)	52.8	72.8	79.2
Soluble silica (%)	2.1	2.6	2.8
Calcium oxide (%)	16.7	10.4	9.3
<i>Calculated values</i>			
<i>Cement content (%)</i>			
ex silica	8.0	10.7	11.5
ex lime	25.8	16.2	14.5
preferred/mean value %	8.0	10.7	11.5
<i>Aggregate content (%)</i>			
ex silica	90.2	86.8	85.8
ex lime	68.2	80.1	82.2
preferred/mean value	90.2	86.8	85.8
<i>Aggregate/cement ratio</i>			
ex silica	11.3	8.1	7.4
ex lime	2.6	4.9	5.7
preferred/mean value	11.3	8.1	7.4

The cement contents were determined in accordance with B.S. 1881:Part 124:2015. The silica content was determined by atomic absorption spectrophotometric method.

Assumptions used for the cement and aggregate content calculations:

Silica content of cement (CEM I)	=	20.2 %
Soluble silica content of aggregate	=	0.5 %
Calcium oxide content of cement (CEM I)	=	64.5 %

Chloride content of concrete samples

Date received : 9 October 2019
Mass received : 5 to 115 g
Type of sample : concrete lumps and dust
Date of analysis : 15 October 2019
Method of testing : B.S.1881:Part 124:2015.

Sample ref.	Client's ref.	Chloride content	
		% by mass of	
		sample	cement
14220	B1-15	<0.01	<0.01
14221	B1-18	0.01	0.07
14222	B1-19	0.01	0.07
14223	B1-20	<0.01	<0.01
14224	G2	<0.01	<0.01
14225	G3	<0.01	<0.01
14226	G4	<0.01	<0.01
14227	G17	0.01	0.03
14228	G18	0.01	0.07
14229	G19	0.01	0.07
14230	G23	0.01	0.10
14231	G25	<0.01	<0.01
14232	G9	0.01	0.08
14233	G15	0.01	0.06
14234	G26	0.01	0.09
14235	G24	0.01	0.05
14236	L2-1	<0.01	<0.01
14237	Level 2-Location 2	<0.01	<0.01
14238	Level 2-Location 3	<0.01	<0.01
14239	Level 2-Location 4	<0.01	<0.01
14240	L2-5	<0.01	<0.01
14241	Level 2-Location 6	<0.01	<0.01
14242	Level 2-Location 7	0.01	0.06
14243	Level 2-Location 8	<0.01	<0.01
14244	Level 2-Location 9	0.01	0.05

Note: where determined the actual cement contents were used for the calculation, for all other samples the mean of all determination, 11.3 % cement content was assumed.

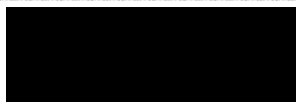
High alumina cement content of concrete samples

Date received : 9 October 2019
Mass received : 5 to 11 g
Type of sample : concrete dust
Date of analysis : 14 October 2019
Method of testing : BRE IS 15/74.

Sample ref.	Client's ref.	Presence of HAC
14206	G2	not present
14207	G3	not present
14208	G4	not present

Results relate to the samples received.

End of results



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CERTIFICATE of ANALYSIS

CIS Tower, Manchester
Cement content of concrete sample

Sample ref.:	14366
Client's ref.:	L2-19 cement
Date received:	14 October 2019
Mass received (g) :	19
Type of sample:	concrete dust and lumps
Date of analysis:	17 to 19 October 2019
<i>Determined values</i>	
Insoluble residue (%)	80.5
Soluble silica (%)	2.5
Calcium oxide (%)	7.9
<i>Calculated values</i>	
<i>Cement content (%)</i>	
ex silica	10.3
ex lime	12.2
preferred/mean value %	10.3
<i>Aggregate content (%)</i>	
ex silica	87.3
ex lime	85.0
preferred/mean value	87.3
<i>Aggregate/cement ratio</i>	
ex silica	8.5
ex lime	7.0
preferred/mean value	8.5

The cement contents were determined in accordance with B.S. 1881:Part 124:2015. The silica content was determined by atomic absorption spectrophotometric method.

Assumptions used for the cement and aggregate content calculations:

Silica content of cement (CEM I) = 20.2 %
 Soluble silica content of aggregate = 0.5 %
 Calcium oxide content of cement (CEM I) = 64.5 %

◆◆◆◆◆

Chloride content of concrete samples

Date received : 14 October 2019
 Mass received : 8 to 21 g
 Type of sample : concrete dust
 Date of analysis : 19 October 2019
 Method of testing : B.S.1881:Part 124:2015.

Sample ref.	Client's ref.	Chloride content	
		% by mass of	
		sample	cement
14367	L2-10	0.01	0.05
14368	L2-19	0.01	0.05
14369	L7-6	<0.01	<0.01
14370	L7-7	<0.01	<0.01
14371	L7-8	<0.01	<0.01

Note: 10.3 % determined cement content was used for the calculations.

Results relate to the samples received.

End of results



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24 October 2019
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CERTIFICATE of ANALYSIS

CIS Tower, Manchester

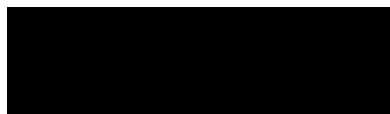
Chloride and high alumina cement content of concrete samples

Date received : 22 October 2019
Mass received : 9 to 11 g
Type of sample : concrete dust and lumps
Date of analysis : 24 October 2019
Method of testing : B.S.1881:Part 124:2015 (chloride) and BRE IS 15/74 (HAC).

Sample ref.	Client's ref.	Presence of HAC	Chloride content	
			% by mass of	
			sample	cement
14783	L16-4	-	0.01	0.04
14784	L16-5	-	0.01	0.04
14785	L16-6	-	<0.01	<0.01
14786	L7-11	not present	-	-

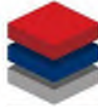
Note: 14 % cement content was assumed for the calculations. Results relate to the samples received.

End of results



Iren S. Jasko MSc EurChem CSci CChem FRSC
Technical Manager

4.2 Compressive strength test certificates

08 October 2019		 Construction Testing Solutions Ltd Bootham Lane Industrial Estate Dunscroft Doncaster DN7 4JU T [01302] 352652 E enquiries@constructiontesting.co.uk W www.constructiontesting.co.uk  4161	
Material Specification		19605 Building - no cast or mix details	
		Not Stated	
		24/09/2019	
		07/10/2019	
		B3-4	
		STR	
		B3-4	
CIS Tower - Manchester			

Determination of Compressive Strength and Examination of a Cored Concrete Specimen
BS EN 12504-1: 2009

Average Diameter (mm)		93.5	Date of Test		7 October 2019
Maximum Length as received (mm)		140	Age of Core at Test day (Days)		Not Stated
Minimum Length as received (mm)		105	Length cut from top of as received core (mm)		20.0
Diameter of reinforcing bar in as received specimen (mm):		N/A	Length after end preparation (mm)		96.5
Distance from centre of steel bar to top of as received specimen (mm): if applicable		N/A	Length/Diameter Ratio		1.03
Appearance of Concrete		Evenly Distributed Aggregate, minimal voids	Method of end preparation		Sulphur Capping
Estimated Maximum Aggregate size (mm)		16	Soaking Time before test (days)		N/A
Distribution of materials		Uniform	Condition of specimen at time of test:		As received
Presence of cracks		None	Surface Moisture Condition at test		Dry
Excess Voidage (%)		0.5	Failure Mode		Satisfactory
			Diameter of reinforcing bar in prepared specimen (mm)		N/A
			Distance from centre of steel bar to top of prepared specimen (mm)		N/A

Apparent Density (kg/m^3)		Measured Compressive Strength (N/mm^2)	
Failure Load kN		Corrected In-Situ Cube Strength (N/mm^2)	

Volume determined by linear measurement

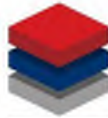
Density reported to nearest 10kg/m³ with sample in 'As received' condition

Corrected In-Situ cube strength determined in accordance with Annex NA.3

If an estimate of the **characteristic** compressive strength of standard test specimens as used in the original structural design is needed, further corrections not covered in National Annex NA have to be applied, and consultation with BS EN 13791 and BS 6089 is needed


 Technical Director

Laboratory Report	DNR/15212	Contract Sample No	DN1450/2
Report Date	08 October 2019	Core Reference	DN1450/2
Curtins Merchant Exchange 17-19 Whitworth Street West Manchester M1 5WG	Material Specification	19305 Bomb Shelter - no mix details	
	Date Cast	Not Stated	
	Date Drilled	30/09/2019	
	Date Completed	07/10/2019	
	Core Location	B2-8	
	Drilled By	STR	
	Client Reference	B2-8	
Site: CIS Tower - Manchester			



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Determination of Compressive Strength and Examination of a Cored Concrete Specimen
BS EN 12504-1: 2009

Cored Specimen Examination		Prepared Specimen Details	
Average Diameter (mm)	102.8	Date of Test	7 October 2019
Maximum Length as received (mm)	110	Age of Core at Test day (Days)	Not Stated
Minimum Length as received (mm)	95	Length cut from top of as received core (mm)	0.0
Diameter of reinforcing bar in as received specimen (mm):	N/A	Length after end preparation (mm)	106.2
Distance from centre of steel bar to top of as received specimen (mm): if applicable	N/A	Length/Diameter Ratio	1.03
Appearance of Concrete	Evenly Distributed Aggregate, minimal voids	Method of end preparation	Sulphur Capping
Estimated Maximum Aggregate size (mm)	16	Soaking Time before test (days)	N/A
Distribution of materials	Uniform	Condition of specimen at time of test:	As received
Presence of cracks	None	Surface Moisture Condition at test	Dry
Excess Voidage (%)	0.5	Failure Mode	Satisfactory
		Diameter of reinforcing bar in prepared specimen (mm)	N/A
		Distance from centre of steel bar to top of prepared specimen (mm)	N/A

Apparent Density (kg/m^3)	2320	Measured Compressive Strength (N/mm^2)	55.3
Failure Load kN	458.9	Corrected In-Situ Cube Strength (N/mm^2)	56

Volume determined by linear measurement

Density reported to nearest 10kg/m3 with sample in 'As received' condition

Compressive Strength reported to nearest 0.1N/mm²

Corrected In-Situ cube strength determined in accordance with Annex NA.3

If an estimate of the **characteristic** compressive strength of standard test specimens as used in the original structural design is needed, further corrections not covered in National Annex NA have to be applied, and consultation with BS EN 13791 and BS 6089 is needed



4.3 Petrographic analysis

Test report Number: EP191008 Issue 1 Date: 28/10/2019 Page 1 of 14

Tested For: Construction Testing Solutions Ltd, Chesterfield, CTS Structures, c/o CET Calibration, M1 Commerce Park, Markham Lane, Duckmanton, S44 5HS

REPORT FOR THE PETROGRAPHIC EXMINATION OF SIX CONCRETE CORE SAMPLES

RELEVANT INFORMATION

Work Requested by Ben Dimbleby

STR Ref: STR154

Date Received: 7-9/10/2019

Client: Curtins

Site: CIS Tower, Manchester

Sample References: 6No. 100mm nominal diameter concrete cores as follows:

Reference	Description
B1L-6	120mm long core with a painted formed end and an inner broken end. 10mm steel reinforcement occurs at a depth of cover of 63mm.
B2-4	120mm long core with a painted formed end and an inner broken end. Wire mesh occurs towards the broken end.
B2-5	115mm long core made up of two concrete layers with an irregular outer surface in which coarse aggregate is exposed and an inner broken end.
B3-8	120mm long core made up of two concrete layers with a smooth formed outer surface in and an inner broken end.
B3-10	120mm long core with smoothly formed end coated with residual plaster and an inner broken end.
Ground 19 (G19)	120mm long core with a painted thin mortar skimmed end and an inner broken end.

Date of preparation and examination: 11-25/10/2019

Examined by Phil Raybould

1 INTRODUCTION

The concrete core samples provided were subjected to routine petrographic examination with reference to alkali-silica reaction.

2 PROCEDURES

Petrographic examination was carried out to in-house documented Procedure EPTP 001, which is in general accord with ASTM C856: Standard Petrographic Examination of Hardened Concrete.

2.1 Sample Preparation:

A slice cut to include the outer surface of cores B2-4, B1L-6, B3-10 and G19 was selected and prepared as a thin section. A slice cut to include both the outer and inner concrete layers in samples B2-5 and B3-8 was selected and prepared as a thin section. The thin sections were examined with Leitz petrological and fluorescent photomicroscopes. In making the thin sections, the sample offcuts were oven dried at a low temperature and impregnated with a low temperature curing penetrative fluorescent resin. One side of the impregnated slice was then ground, polished, and mounted onto a glass slide. The surplus sample was then removed, ground and polished to give a final thickness of approximately 20-30 micrometres.

Photographs of the samples as received, in finely ground surface and in thin section between crossed and plane polarized light and in reflected UV light were taken and are included in the Appendix to this report

Report Approved by:



Phil Raybould, Consultant Petrographer

3 PETROGRAPHIC DETAILS

3.1 Preliminary Examination

The formed surface of samples B2-4, B1L-6 and G19 is smooth and painted. The formed surface of sample B3-8 is smooth and unpainted. The outer surface of B3-10 is smoothly formed and coated with residual plaster. The outer surface of B2-5 appears to be weathered with fine and coarse aggregate visible (See Figures 1 and 2). No obvious macrocracking or fine cracking is evident in the outer surface of the six cores.

A steel mesh occurs in sample B2-4 at a depth of about 95mm from the formed end. Ten-millimetre diameter reinforcement occurs in sample B1L-6 at a depth of cover of about 6mm. No cracking or reinforcement corrosion product was seen associated with the mesh in B2-4 or the reinforcement in sample B1L-6.

Samples B2-5 and B3-8 include two concrete layers (see Figure 1 and 2). The outer concrete layer in B2-5 is about 80mm thick and is generally darker grey than the inner layer. The outer layer in B3-8 is about 60mm thick and has a darker reddy buff appearance than the inner layer. The concrete layers in both samples are well bonded (see Figure 2). The inner layer in sample B3-8 is carbonated to a depth of about 10mm showing that the top layer was added later. No carbonation occurs along the surface of the inner layer in sample B2-5.

The concrete of all six core samples consists of a natural partly crushed quartzite-rich gravel coarse aggregate with well-rounded to sub-angular particles of low aspect ratio that continuously grade from about 15 to 5mm nominal mean diameter with occasional larger pieces up to about 18mm. The coarse aggregate in all six samples is set in a CEMI cement paste and a quartz-rich sand fine aggregate and is uniformly distributed throughout with no evidence of any segregation. The cement pastes in samples B2-4, B2-5 and B3-10 have a light buff grey to grey appearance. The cement paste in samples B1L-6, B3-8 and G19 have a light to dark buff appearance with a red hue (see Figure 1 and 2).

All six samples contain sporadically distributed entrapped voids up to about 5mm with entrapped voids being more abundant in samples B2-4 and B2-5 (outer concrete) than in the other four samples. The outer concrete of sample B2-5 due to the abundance of entrapped void appears to satisfactorily to poorly compacted. The concrete in inner concrete of B2-5 and in the other five samples is generally satisfactorily compacted and coherent with little tendency for plucking of the cement paste from the sawn surfaces except for sample B1L-6 in which the paste shows minor tendency to pluck from the sawn surfaces (see Figures 1 and 2).

No macrocracking or fine cracking in keeping with alkali-silica reaction was seen in the body of the six samples. No evidence for the development of hygroscopic damp patches of alkali-silica gel was seen on the six cores as received or on the finely ground surfaces prepared from them.

3.2 Microscopic Examination

3.2.1 Coarse aggregate: The coarse aggregate in all six samples is a similar quartzite-rich gravel dominated by quartzites together minor sandstone, polycrystalline vein quartz, fine grained siliceous volcanic rock and chert. A single limestone particle was seen in sample B3-10 (see Figure 15). The quartzites range from white to grey to purple or brown in hand specimen and are mix of orthoquartzite and metaquartzite with most consisting of interlocking crystals of fine to medium-grained quartz. Some of the pieces consist of quartz that has been sheared and restructured and includes sub microscopic and strained quartz (see Figures 3, 6, 9, 12, 15 and 18).

The sandstones range from light brown to grey to deep brown and are mostly quartz-rich with minor feldspar and other rock and mineral types including mica and varying amounts of ferruginous (iron compounds) and may have a calcite matrix.

The igneous rocks appear to be mostly weathered porphyritic acid igneous (rhyolite) rock particles. The cherts have a microcrystalline siliceous texture (see Figures 2, 6 and 9).

The particles in all six samples are well defined against the cement paste and no deterioration or evidence of cracking or for gel deposits in keeping with alkali-silica reaction was found associated with the coarse aggregate in any of the six samples.

3.2.2 Fine aggregate: The fine aggregate in all six samples is a natural quartz-rich sand with particles continuously graded from 5mm to <1mm.

The sand dominated by quartz and quartzite with minor sandstone, siltstone and argillite, chert, varieties of igneous rock, ferruginous rock particles and feldspar and traces of mica with minor shell fragments also present in samples B2-4 and B2-5 (see Figure 7). The sand particles are generally rounded to irregular to angular in shape. No evidence for alkali-silica reaction or for deterioration of fine aggregate was seen in the thin sections of the six samples.

3.2.3 Cement Paste: The cement paste in all six samples is based on CEM I, being a Portland cement paste with no evidence for the presence of cement replacement phases such as slag (GGBS) or fly ash. Carbonation penetrates as follows from the outer surface of the samples.

Reference	Depth of carbonation (mm)
B2-4	Variable 4 - 22mm
B2-5	Surface only
B1L-6	25mm
B3-8	2mm
B3-10	Variable 3 - 10mm
G19	10 - 12mm

No carbonation was seen along the surface of the inner concrete in sample B2-5. Carbonation penetrates to a depth of about 10mm from surface of the inner concrete in sample B3-8.

Away from the carbonated zones, the cement paste of the six samples appears normally isotropic and dark in thin section between crossed polars (see Figures 4,7,10,13,16 and 19). The abundance of residual partially hydrated Portland cement grains is generally low in the samples, being moderate in abundance in sample B2-4 and the outer concrete in samples B2-5. Anhydral Portland (calcium hydroxide) crystals occur as discontinuous pellicles on the surface of aggregate particles and as discrete crystals in the cement paste of all six samples and tend to be small in samples B2-4 and B2-5 (outer concrete). The Portlandite crystals tend to be small to large in sample B1L-6 and small to medium in inner concrete of B2-5 and in samples B3-8, B3-10 and G19 (see Figures 4,7,10,13,16 and 19).

Voids in the samples range from <1 to about 5mm and range from irregular to rounded. Other than for traces of calcium hydroxide in occasional voids, no secondary crystalline deposits such as ettringite or alkali-silica gel were found in the voids seen in the thin sections of any of the six samples.

The cement paste of the samples exhibits varying microporosity when examined in reflected UV light, being low in the outer concrete of sample B2-5 and high in samples B1L-6 and B3-8 (inner concrete). The cement paste of samples B2-4, B2-5 (inner concrete), B3-8 (outer concrete), B3-10 and G19 moderate microporosity (see Figure 5,8,11,14,17 and 20).

The abundance of microcracking in the cement paste of all six samples is low.

4 REMARKS

The metaquartzite, quartzites, sandstones and siltstones, fine grained porphyritic acid igneous rock and chert particles in the coarse and fine aggregate in all six samples are amongst the rock types known to be potentially reactive with alkalis in cement paste and would be classified as 'normal reactivity' aggregate types.

No evidence for alkali-aggregate reaction or for other forms of deterioration of either the fine or coarse aggregate was found in any of the six samples.

The cement paste in the six samples is based on CEM I, being a Portland cement paste with no evidence for the presence of cement replacement phases such as slag (GGBS) or fly ash.

Other than for the carbonation, no evidence of any significant deterioration of the cement paste in any of the six sample was found. No evidence for the development of secondary crystallisation products such as ettringite in voids due to moisture movement through the cement paste was seen in any of the six samples.

The relative abundance of residual Portland cement grains and of Portlandite crystals and the general microporosity of the cement paste in the samples is in keeping with a water/cement ratio in the range of 0.45 to 0.60.

5 APPENDICES:**5.1 Photographs Illustrating the Samples:****Figure 1: Samples as received. Scale: The diameter of each core is about 100mm.**

The concretes have a natural quartzite-rich coarse aggregate and quartz-rich rich sand fine aggregate.



Figure 2: Samples in finely ground surface. Scale: The diameter of each core is about 100mm.

The coarse aggregate is uniformly distributed with no segregation evident in the samples. No obvious macrocracking or fine cracking occurs in the cores. The coarse aggregate is dominantly quartzites and is generally well defined against the cement paste in all six samples.

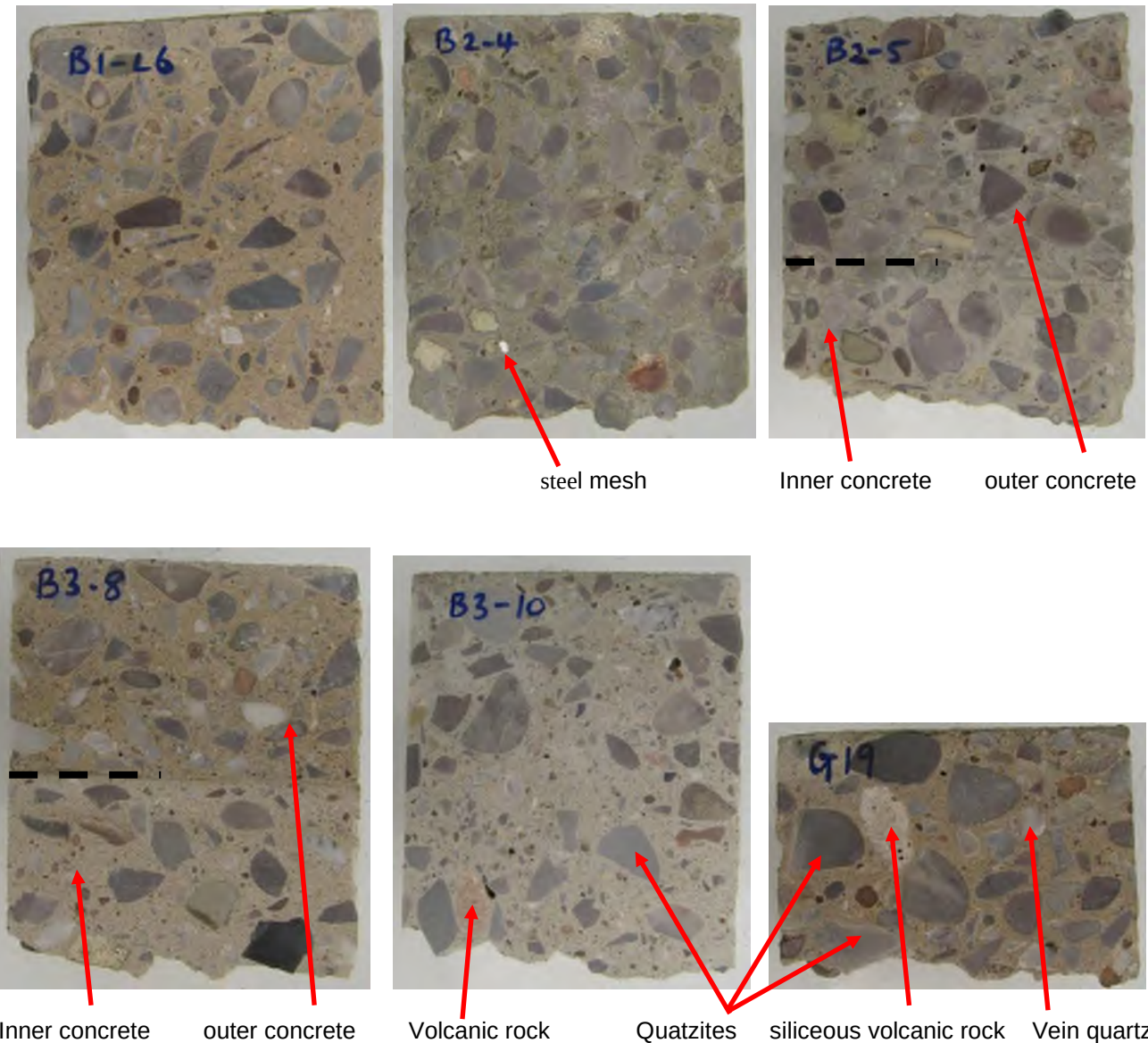


Figure 3: Sample B1L-6, thin section. Scale bar represents 1mm.

A general view in thin section in transmitted light between crossed polars.

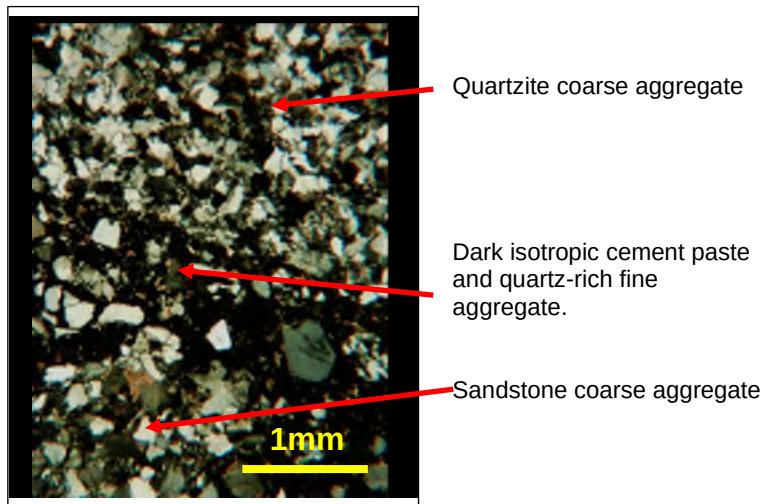


Figure 4: Sample B1L-6, thin section. Scale bar represents 0.1mm.

A detail of the concrete in thin section as seen in transmitted light between crossed polars (left) and between plane polars (right). The cement paste is dark and isotropic in the left view and has a light brown appearance in the right view.

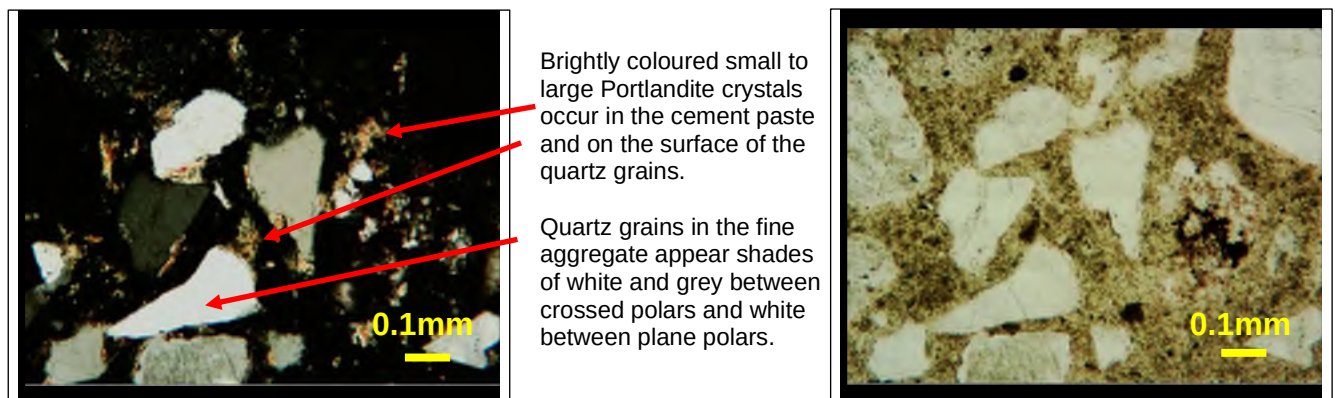


Figure 5: Sample B1L-6, thin section. Scale bar represents 1mm.

A general view of the cement paste and fine aggregate in thin section in reflected UV light.

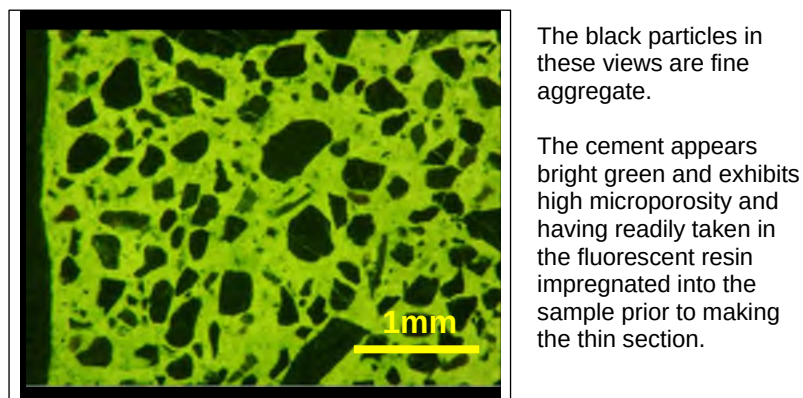


Figure 6: Sample B2-4, thin section. Scale bar represents 1mm.

A general view in thin section in transmitted light between crossed polars.

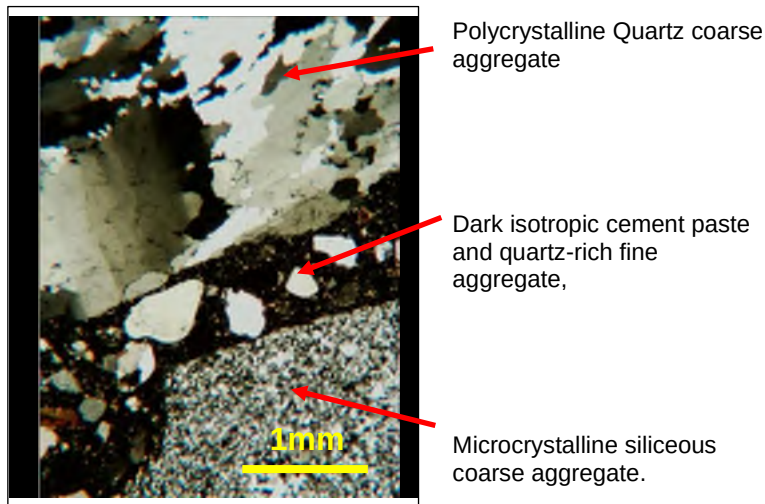


Figure 7: Sample B2-4, thin section. Scale bar represents 0.1mm.

A detail of the concrete in thin section as seen in transmitted light between crossed polars (left) and between plane polars (right). The cement paste is dark and isotropic in the left view and has a light brown appearance in the right view.

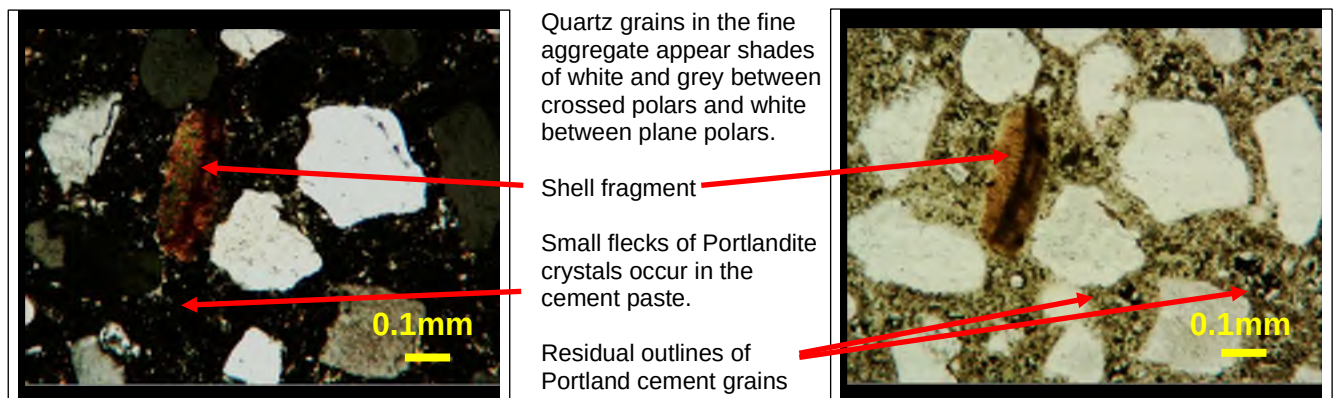


Figure 8: Sample B2-4, thin section. Scale bar represents 1mm.

A general view of the cement paste and fine aggregate in thin section in reflected UV light.

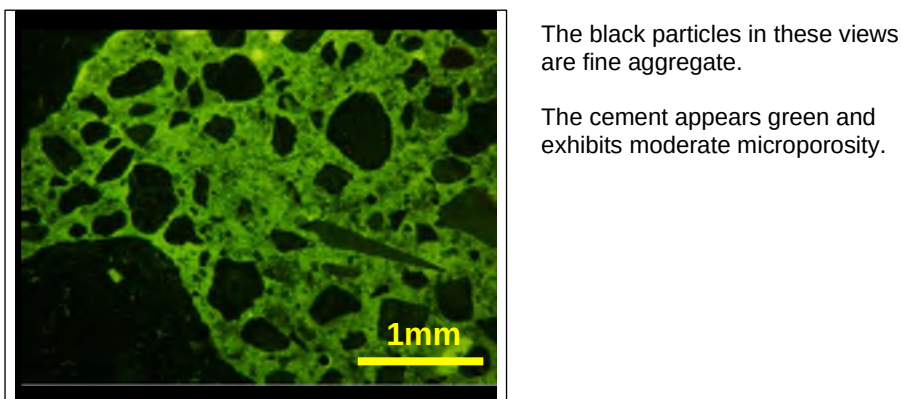


Figure 9: Sample B2-5 outer concrete, thin section. Scale bar represents 1mm.

A general view in thin section in transmitted light between crossed polars.

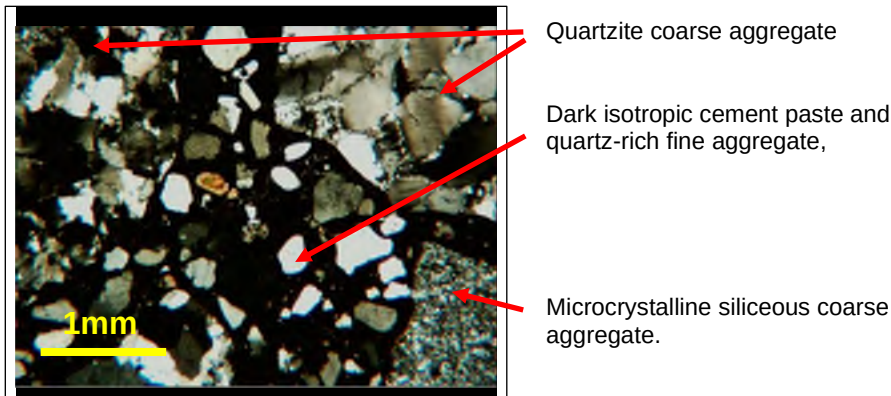


Figure 10: Sample B2-5, thin section. Scale bar represents 0.1mm.

A detail of the outer and inner concrete in thin section as seen in transmitted light between crossed polars (left) and between plane polars (right). The cement paste is dark and isotropic in the left views and has a light brown appearance in the right views.

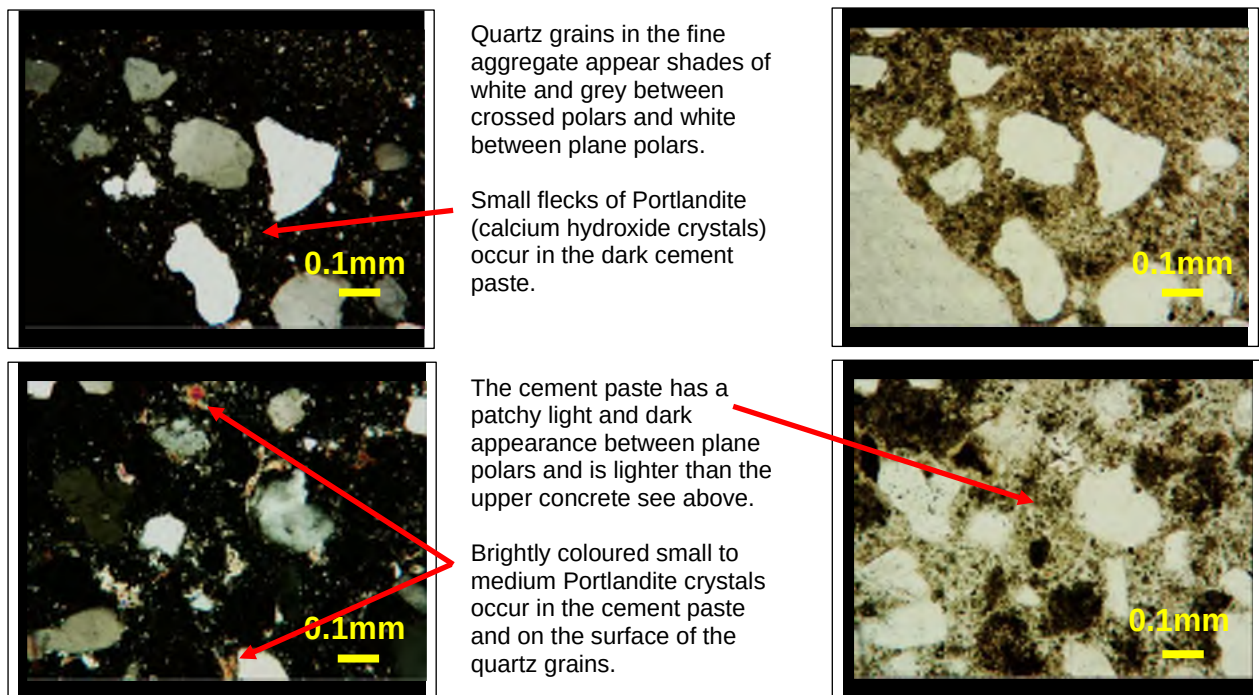


Figure 11: Sample B2-5, thin section. Scale bar represents 1mm.

A general view of the cement paste and fine aggregate in thin section in reflected UV light. Outer concrete (left), inner concrete (right).

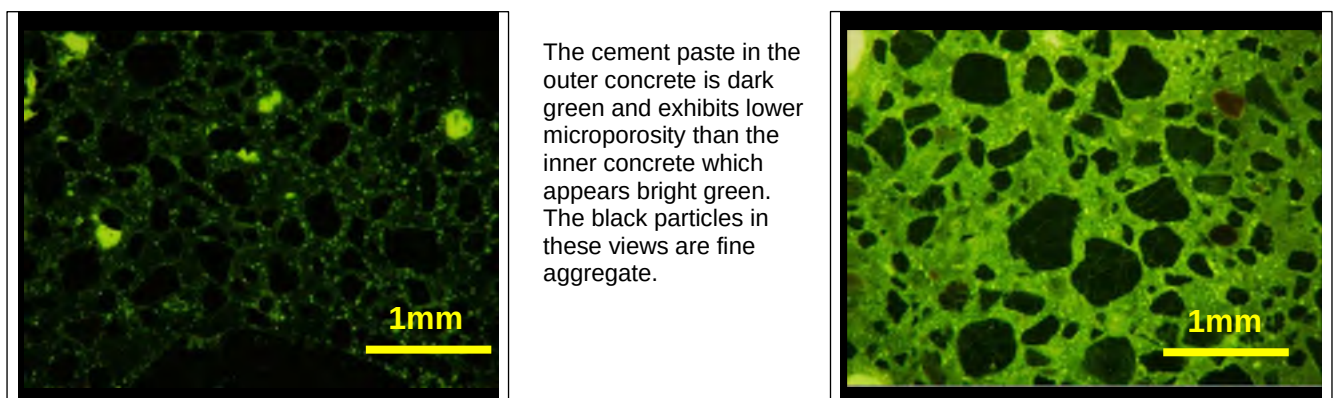


Figure 12: Sample B3-8 outer concrete, thin section. Scale bar represents 1mm.

A general view in thin section in transmitted light between crossed polars.

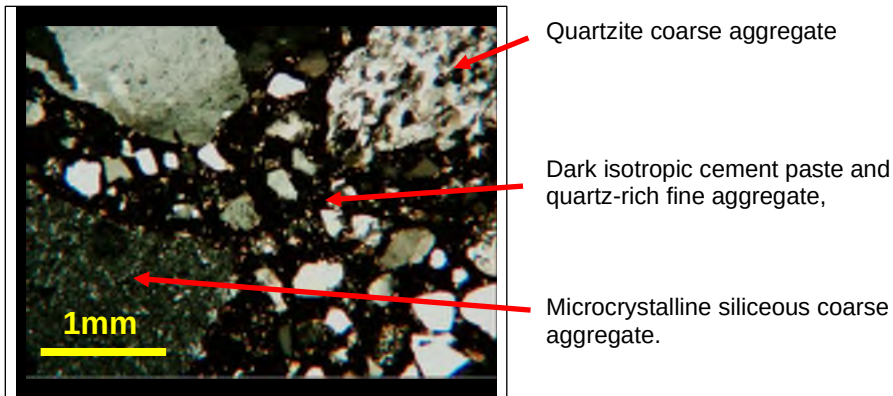


Figure 13: Sample B3-8, thin section. Scale bar represents 0.1mm.

A detail of the outer and inner concrete in thin section as seen in transmitted light between crossed polars (left) and between plane polars (right). The cement paste is dark and isotropic in the left views and has a light brown appearance in the right views.

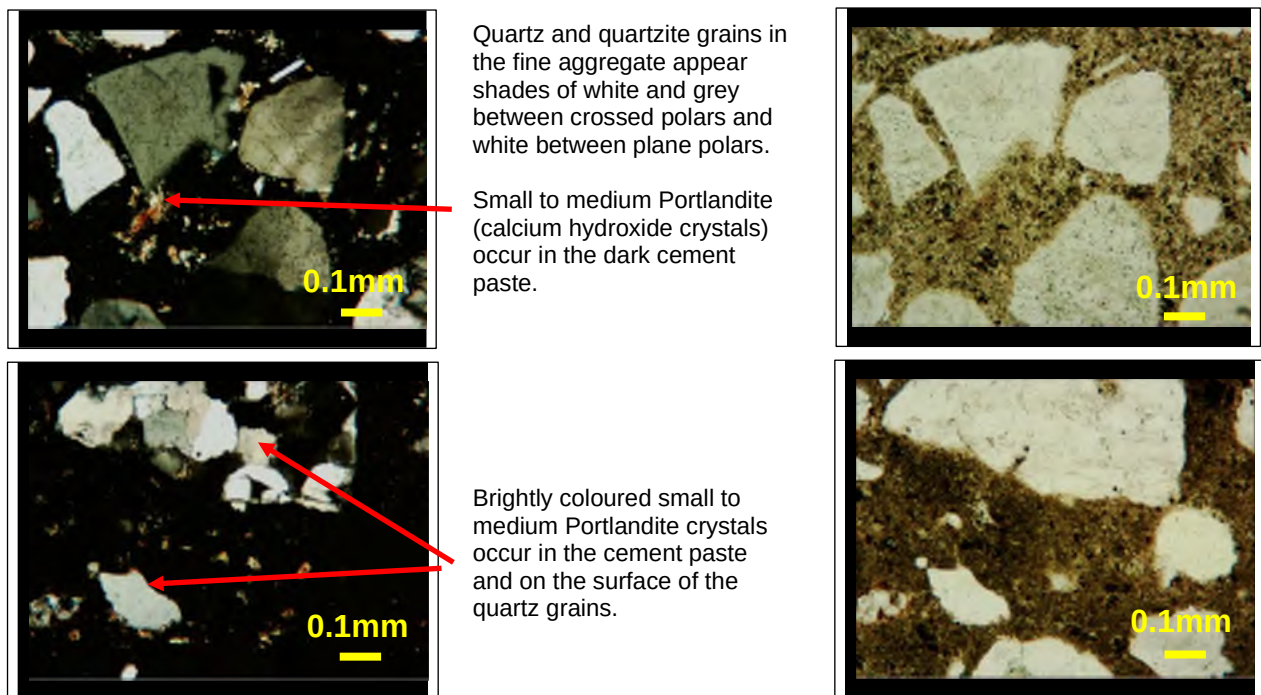


Figure 14: Sample B3-8, thin section. Scale bar represents 1mm.

A general view of the cement paste and aggregate in thin section in reflected UV light. Outer concrete (left), inner concrete (right).

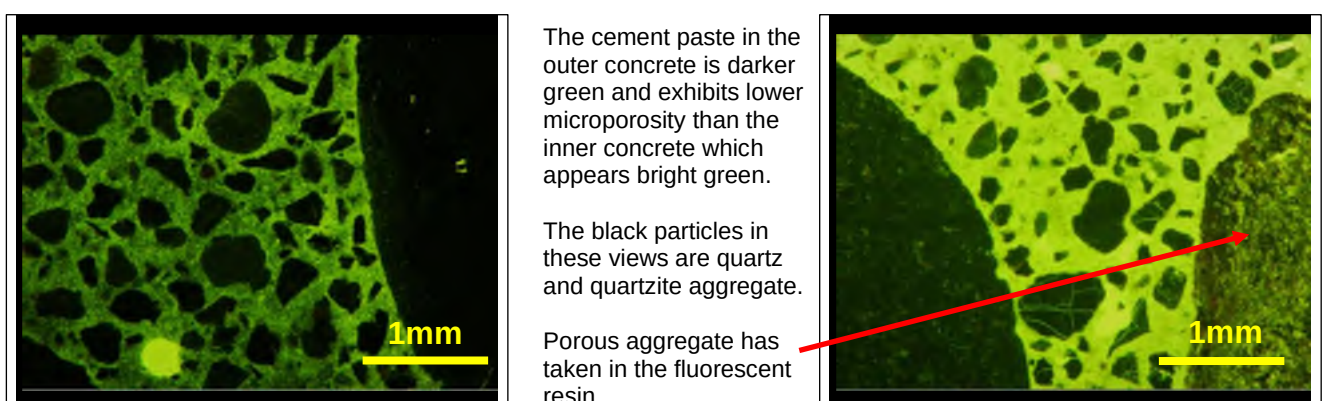


Figure 15: Sample B3-10, thin section. Scale bar represents 1mm.

A general view in thin section in transmitted light between crossed polars.

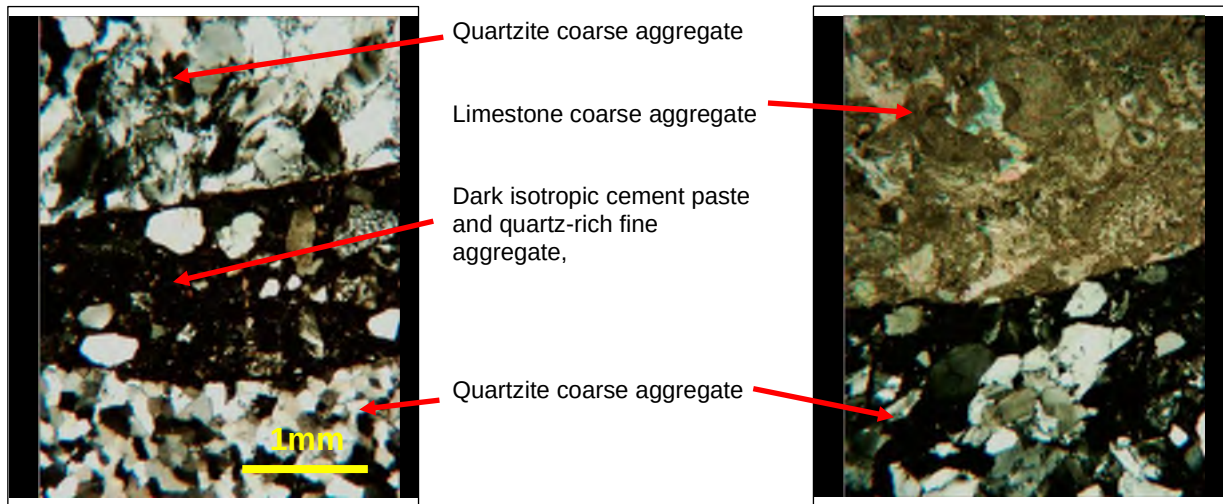


Figure 16: Sample B3-10, thin section. Scale bar represents 0.1mm.

A detail of the concrete in thin section as seen in transmitted light between crossed polars (left) and between plane polars (right). The cement paste is dark and isotropic in the left view and has a dark brown appearance in the right view.

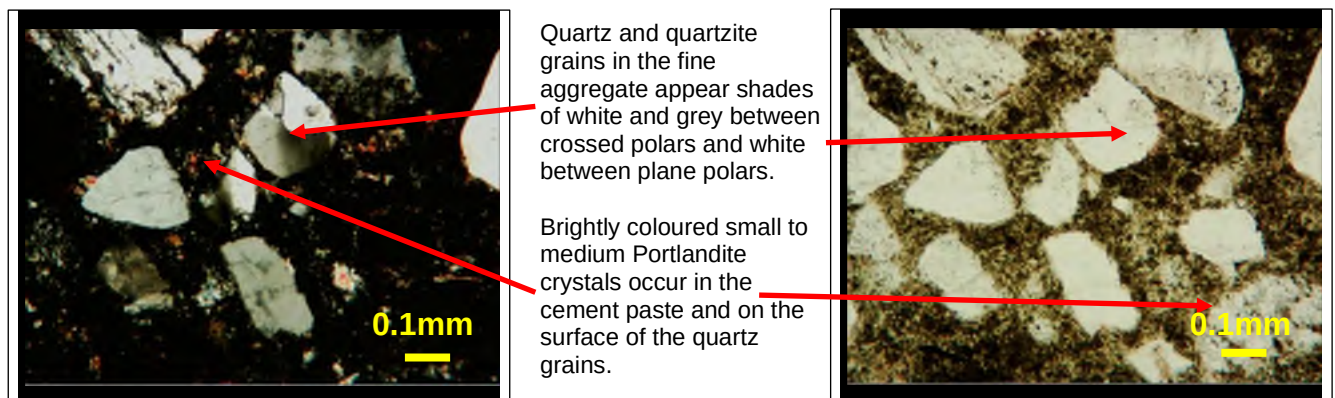


Figure 17: Sample B3-10, thin section. Scale bar represents 1mm.

A general view of the cement paste and fine aggregate in thin section in reflected UV light.

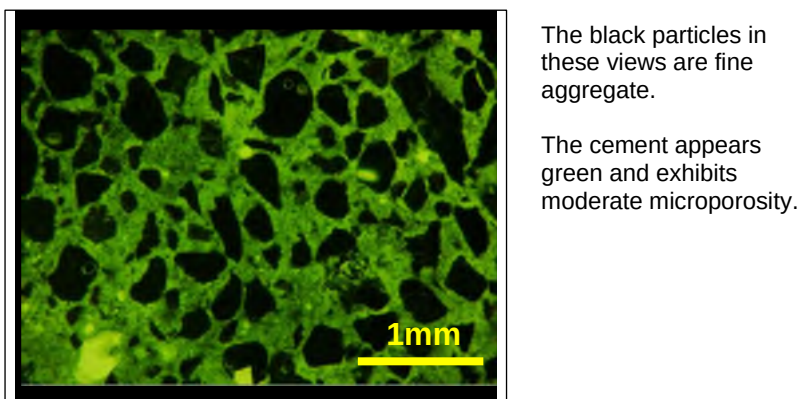


Figure 18: Sample G19, thin section. Scale bar represents 1mm.

A general view in thin section in transmitted light between crossed polars.

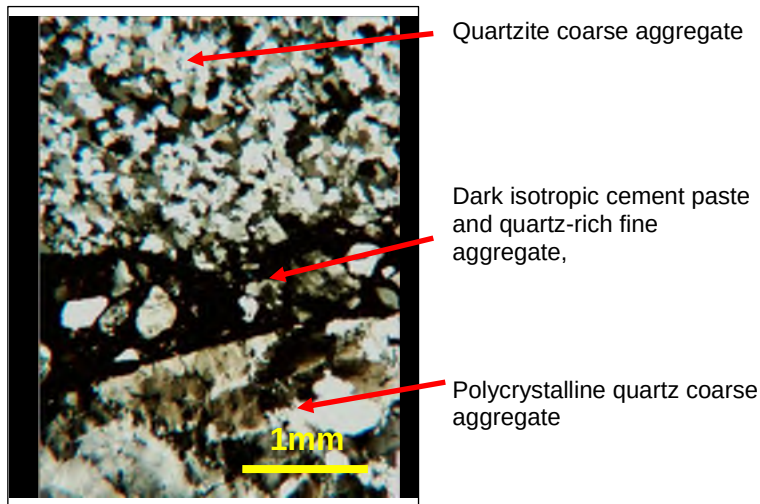


Figure 19: Sample G19, thin section. Scale bar represents 0.1mm.

A detail of the concrete in thin section as seen in transmitted light between crossed polars (left) and between plane polars (right). The cement paste is dark and isotropic in the left view and has a brown appearance in the right view.

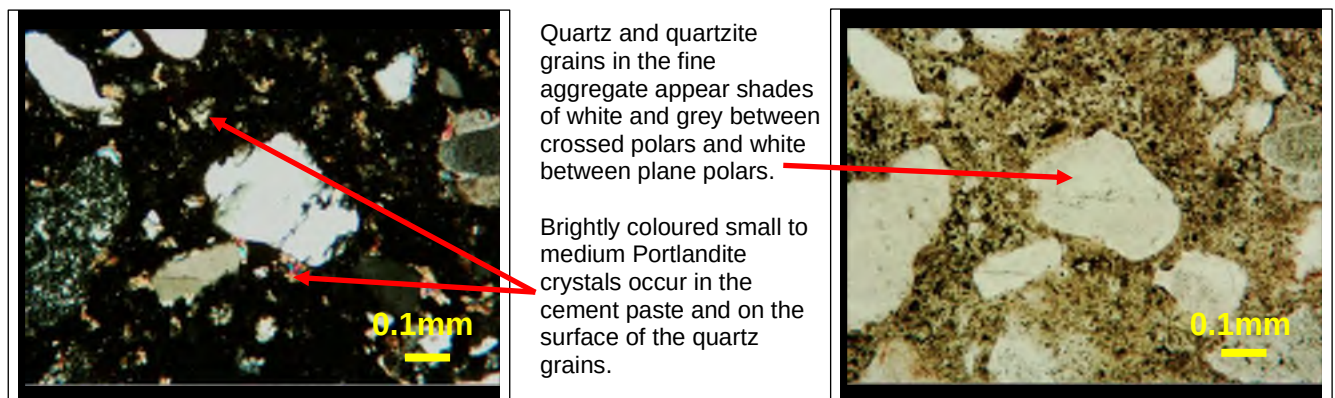
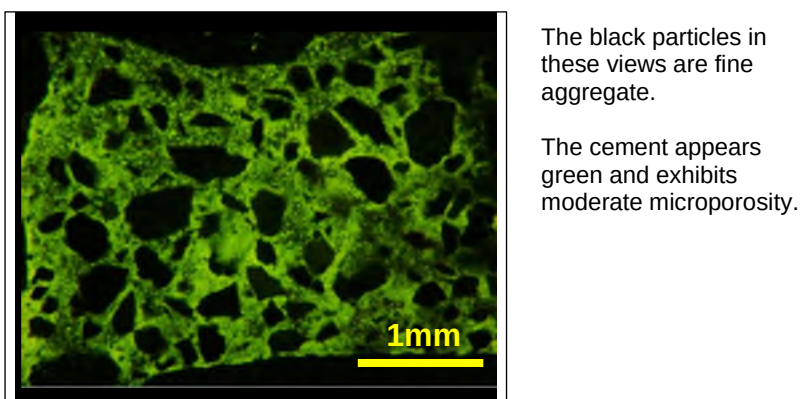


Figure 20: Sample G19, thin section. Scale bar represents 1mm.

A general view of the cement paste and fine aggregate in thin section in reflected UV light.



5.2 Guidance:**5.2.1 Alkali-silica reactivity of rock, mineral, and artificial concrete aggregate constituents (compiled from BS 7943 and BRE Digest 330).**

Low Reactivity	Normal Reactivity	High Reactivity
Air-cooled blastfurnace slag	Arkose ⁴	Chalcedony and chalcedonic silica
Amphibolite ¹	Breccia	Cristobolite
Andesite ¹	Chert	Greywacke (crushed)
Basalt ¹	Conglomerate	Opal or opaline silica
Chalk	Flint	Tridymite
Diorite and microdiorite ¹	Granulite ¹	Recycled demolition waste
Dolerite ¹	Greywacke (uncrushed)	
Dolomite ²	Gritstone ⁴	
Expanded clay/shale/slate	Hornfels	
Feldspar	Quartzite ⁴	
Gabbro ¹	Rhyolite ¹	
Gneiss ¹	Sandstone and siltstone ⁴	
Granite and microgranite ¹	Tuff ¹	
Limestone ²	Volcanic glass ⁵	
Marble ²		
Quartz ³		
Schist ¹		
Sintered pulverised-fuel ash		
Slate		
Syenite and microsyenite ¹		
Trachyte ¹		

1 Rock types not generally alkali-silica reactive but may occasionally contain reactive forms of silica (possibly including opal, chalcedony, tridymite, devitrified glass, microcrystalline or cryptocrystalline quartz, sub microscopic or disordered quartz).

2 Silicified limestones, dolomites, and marbles may be reactive due to the presence of disseminated microcrystalline or cryptocrystalline quartz.

3 Not quartzite, nor microcrystalline or cryptocrystalline quartz. In addition, highly disordered quartz and sub microscopic silica or is potentially reactive.

4 Sandstones may occasionally contain reactive forms of silica such as microcrystalline or cryptocrystalline quartz, strained or disordered, opal, chalcedony. Greywacke can be highly alkali reactive (when crushed) and is considered separately from other types of sandstones.

5 Volcanic glass may be reactive if the non-crystalline glass has devitrified to become very finely crystalline.

5.2.2 Compaction of concrete described in terms of excess voidage compared with standard photographs in Annex to BS EN 12504-1:

Excess voidage %	Compaction
≤1.0	Very good
>1.0 - ≤ 3.0	Satisfactory (normal for structural concrete)
>3.0 - ≤ 5.0	Poor
>5.0	Very poor
In addition, the term 'honeycombed' is used to describe interconnecting large entrapped	

5.2.3 Guidance on terms used in petrographic description of hardened concrete of relict cement grains and seen in thin section:

Size	
Small	< 20 µm
Medium	20 – 60 µm
Large	60 – 100 µm
Very large	> 100 µm
Relative abundance	
Rare	Only found by thorough searching
Sporadic	Only occasionally observed during normal examination
Common	Easily observed during normal examination
Frequent	Easily observed with minimal examination
Abundant	Immediately apparent to initial examination

5.2.4 Voids

Void type	Origin	Size	Morphology
Water	Filled with water at time of concrete setting	Typically, >3mm	Irregular and elongated shape. Found beneath coarse aggregate particles or reinforcing bars. Internal surface has a granular appearance
Entrapped	Air entrapped in the concrete during placement and compaction	Mostly >1mm	Typically, irregular shape but can also be spherical. Irregular distribution. May increase in size and distribution towards the surface. Internal surface has a glazed lustre
Entrained	Formed by chemical admixture that is retained on the surfaces of the cement particles during the mixing process	0.01mm to 1mm	Spherical shape and uniformly distributed.
Capillary	Sub-microscopic spaces filled with mix water remain after hydration of cement to form an integral part of cement matrix	>0.005mm	Irregular shape

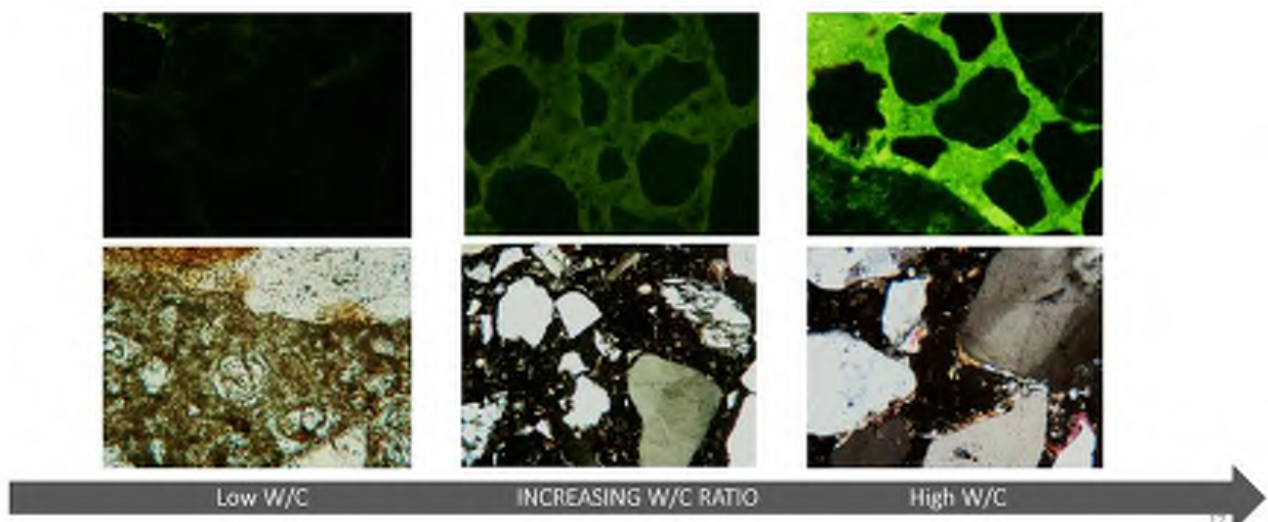
5.2.5 Cracks

Cracks can be open, closed, or filled discontinuities in concrete, resulting after placement and can develop at any stage through the life of the concrete. The terms for crack width are by convention as follows: large cracks >1 mm wide, cracks 1 mm – 100 µm, fine cracks 100 µm – 10 µm, microcracks 10 µm – 1 µm and fine microcracks <1 µm.

5.2.6 Water/Cement ratio

For normally hydrated CEM I concrete that has not been modified or altered in any way with no additions such as GGBS, fly ash or silica fume, w/c ratio can be assessed petrographically using fluorescence microscopy in combination with making an assessment the features of the hydrated paste in thin section such as the abundance, size, and distribution of Portlandite and abundance of residual unhydrated cement. Essentially an increase in w/c leads to increasing microporosity. The more porous the paste is the more readily it takes in the fluorescent resin impregnated into it during the manufacture of the thin section. Cement paste with a low w/c ratio will contain more residual unhydrated cement than one with a high-water cement ratio where there will be very little residual unhydrated cement. A cement paste with a low w/c tends to have less conspicuous coarsely Portlandite which may occur in more abundance as coarse crystals with high w/c.

Photomicrographs illustrating the differences in the appearance of cement paste from low to high w/c ratio



5.2.7 Carbonation

Carbonation is the reaction of carbon dioxide in the environment with the calcium hydroxide in the cement paste. This reaction produces calcium carbonate and lowers the pH to around 9. At this value the protective oxide layer surrounding the reinforcing steel breaks down and corrosion becomes possible.

The reaction of carbon dioxide and calcium hydroxide only occurs in solution and so in very dry concrete carbonation will be slow. In saturated concrete the moisture presents a barrier to the penetration of carbon dioxide and again carbonation will be slow.

The most favourable condition for the carbonation reaction is when there is enough moisture for the reaction but not enough to act as a barrier. In most structures made with good quality concrete, carbonation will take several (or many) years to reach the level of the reinforcement.

Water is essential for carbonation, and a relative humidity ranging from about 50% to 75% creates together with high carbon dioxide concentrations and elevated temperature an ideal environment for the reactions to occur. Concrete with a relative humidity lower than 40% is less susceptible to carbonation because there is insufficient water to dissolve carbon dioxide. At a relative humidity more than 90%, when pores are filled with water, carbonic acid is unable to penetrate the saturated pores and diffuse throughout the concrete, again preventing carbonation.

End of Report

4.4 Tensile strength test certificates



Description Test Sample B3-4 STR Ref: STR154 The test item was submitted to the laboratory for: Mechanical - Tensile	Specification: None Stated Requirements: Submitted by: Dave Sandbrook Date Sample(s) Received: 08/10/2019 Date(s) tested: 16/10/2019	Tested For: CONSTRUCTION TESTING SOLUTIONS LTD BOOTHAM LANE INDUSTRIAL ESTATE BOOTHAM LANE DUNSCROFT DONCASTER DN7 4JU
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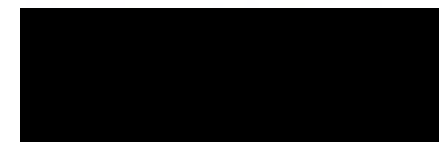
Sample: 19-13471-001 **B3-4** **Mechanical - Tensile** Tested in accordance with: BS EN ISO 6892-1 - 2016

Description: Longitudinal test piece **Test piece type:** Bars **Control mode:** A224 **Original gauge length [mm]:** 25

Sample ID	Test piece size [mm]	Yield strength Rp0.2% [MPa]	Tensile strength [MPa]	Elongation [%]
B3-4	5.01Ø	307	492	37.5

Results as reported.

Comments: Results as reported.





Description Test Sample B3-7 STR Ref: STR154 The test item was submitted to the laboratory for: Mechanical - Tensile	Specification: None Stated Requirements: Submitted by: Dave Sandbrook Date Sample(s) Received: 08/10/2019 Date(s) tested: 16/10/2019	Tested For: CONSTRUCTION TESTING SOLUTIONS LTD BOOTHAM LANE INDUSTRIAL ESTATE BOOTHAM LANE DUNSCROFT DONCASTER DN7 4JU
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Sample: 19-13471-002 **B3-7** **Mechanical - Tensile** Tested in accordance with: BS EN ISO 6892-1 - 2016

Description: Longitudinal test piece **Test piece type:** Bars **Control mode:** A224 **Original gauge length [mm]:** 25

Sample ID	Test piece size [mm]	Yield strength Rp0.2% [MPa]	Tensile strength [MPa]	Elongation [%]
B3-7	5.02Ø	392	692	27.5

Results as reported.

Comments: Results as reported.

**REPORT ISSUED AND
AUTHORISED BY**

Chris Jones
Senior Technician



Description: Test Sample B1-12 STR Ref: STR154 The test item was submitted to the laboratory for: Mechanical - Tensile	Specification: None Stated Requirements: Submitted by: Dave Sandbrook Date Sample(s) Received: 08/10/2019 Date(s) tested: 16/10/2019	Tested For: CONSTRUCTION TESTING SOLUTIONS LTD BOOTHAM LANE INDUSTRIAL ESTATE BOOTHAM LANE DUNSCROFT DONCASTER DN7 4JU
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Sample: 19-13471-003 **B1-12** **Mechanical - Tensile** Tested in accordance with: BS EN ISO 6892-1 - 2016

Description: Longitudinal test piece **Test piece type:** Bars **Control mode:** A224 **Original gauge length [mm]:** 25

Sample ID	Test piece size [mm]	Yield strength Rp0.2% [MPa]	Tensile strength [MPa]	Elongation [%]
B1-12	4.98Ø	362	607	27.5

Results as reported.

Comments: Results as reported.



Description: Test Sample B1L-4 STR Ref: STR154 The test item was submitted to the laboratory for: Mechanical - Tensile	Specification: None Stated Requirements: Submitted by: Dave Sandbrook Date Sample(s) Received: 08/10/2019 Date(s) tested: 16/10/2019	Tested For: CONSTRUCTION TESTING SOLUTIONS LTD BOOTHAM LANE INDUSTRIAL ESTATE BOOTHAM LANE DUNSCROFT DONCASTER DN7 4JU
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Sample: 19-13471-004 **B1L-4** **Mechanical - Tensile** Tested in accordance with: BS EN ISO 6892-1 - 2016

Description: Longitudinal test piece **Test piece type:** Bars **Control mode:** A224 **Original gauge length [mm]:** 25

Sample ID	Test piece size [mm]	Yield strength Rp0.2% [MPa]	Tensile strength [MPa]	Elongation [%]
B1L-4	5.01Ø	282	515	38.5

Results as reported.

Comments: Results as reported.

**REPORT ISSUED AND
AUTHORISED BY**

Senior Technician



Description: Test Sample B2-8 STR Ref: STR154 The test item was submitted to the laboratory for: 🔧 Mechanical - Tensile	Specification: None Stated Requirements: Submitted by: Dave Sandbrook Date Sample(s) Received: 08/10/2019 Date(s) tested: 16/10/2019	Tested For: CONSTRUCTION TESTING SOLUTIONS LTD BOOTHAM LANE INDUSTRIAL ESTATE BOOTHAM LANE DUNSCROFT DONCASTER DN7 4JU
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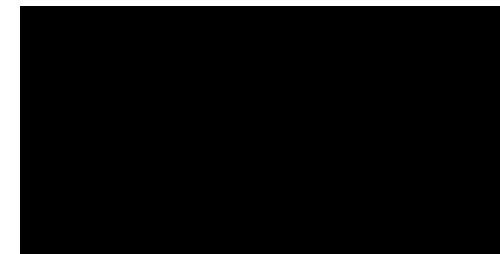
Sample: 19-13471-005 **B2-8** **Mechanical - Tensile** Tested in accordance with: BS EN ISO 6892-1 - 2016

Description: Longitudinal test piece **Test piece type:** Bars **Control mode:** A224 **Original gauge length [mm]:** 25

Sample ID	Test piece size [mm]	Yield strength Rp0.2% [MPa]	Tensile strength [MPa]	Elongation [%]
B2-8	4.99Ø	294	449	38.0

Results as reported.

Comments: Results as reported.



**REPORT ISSUED AND
AUTHORISED BY**

Chris Jones
Senior Technician



Description Test Sample G-23 STR Ref: STR 154 The test item was submitted to the laboratory for: Mechanical - Tensile	Specification: None Stated Requirements: Submitted by: Dave Sandbrook Date Sample(s) Received: 09/10/2019 Date(s) tested: 16/10/2019	Tested For: CONSTRUCTION TESTING SOLUTIONS LTD BOOTHAM LANE INDUSTRIAL ESTATE BOOTHAM LANE DUNSCROFT DONCASTER DN7 4JU
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Sample: 19-13498-001 **SAMPLE REF** G-23 **Mechanical - Tensile** Tested in accordance with: BS EN ISO 6892-1 - 2016

Description: Longitudinal test piece **Test piece type:** Bars **Control mode:** A224 **Original gauge length [mm]:** 25

Sample ID	Test piece size [mm]	Yield strength Rp0.2% [MPa]	Tensile strength [MPa]	Elongation [%]	Reduction of Area [%]
#1	5.02Ø	332	506	32.0	58

Results as reported.

Comments: Results as reported.



Description: Test Sample L2-2 STR Ref: STR 154 The test item was submitted to the laboratory for: Mechanical - Tensile	Specification: None Stated Requirements: Submitted by: Dave Sandbrook Date Sample(s) Received: 09/10/2019 Date(s) tested: 16/10/2019	Tested For: CONSTRUCTION TESTING SOLUTIONS LTD BOOTHAM LANE INDUSTRIAL ESTATE BOOTHAM LANE DUNSCROFT DONCASTER DN7 4JU
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Sample: 19-13498-002 **SAMPLE REF** L2-2 **Mechanical - Tensile** Tested in accordance with: BS EN ISO 6892-1 - 2016

Description: Longitudinal test piece **Test piece type:** Bars **Control mode:** A224 **Original gauge length [mm]:** 25

Sample ID	Test piece size [mm]	Yield strength Rp0.2% [MPa]	Tensile strength [MPa]	Elongation [%]	Reduction of Area [%]
L2-2	5.01Ø	300	470	39.0	64

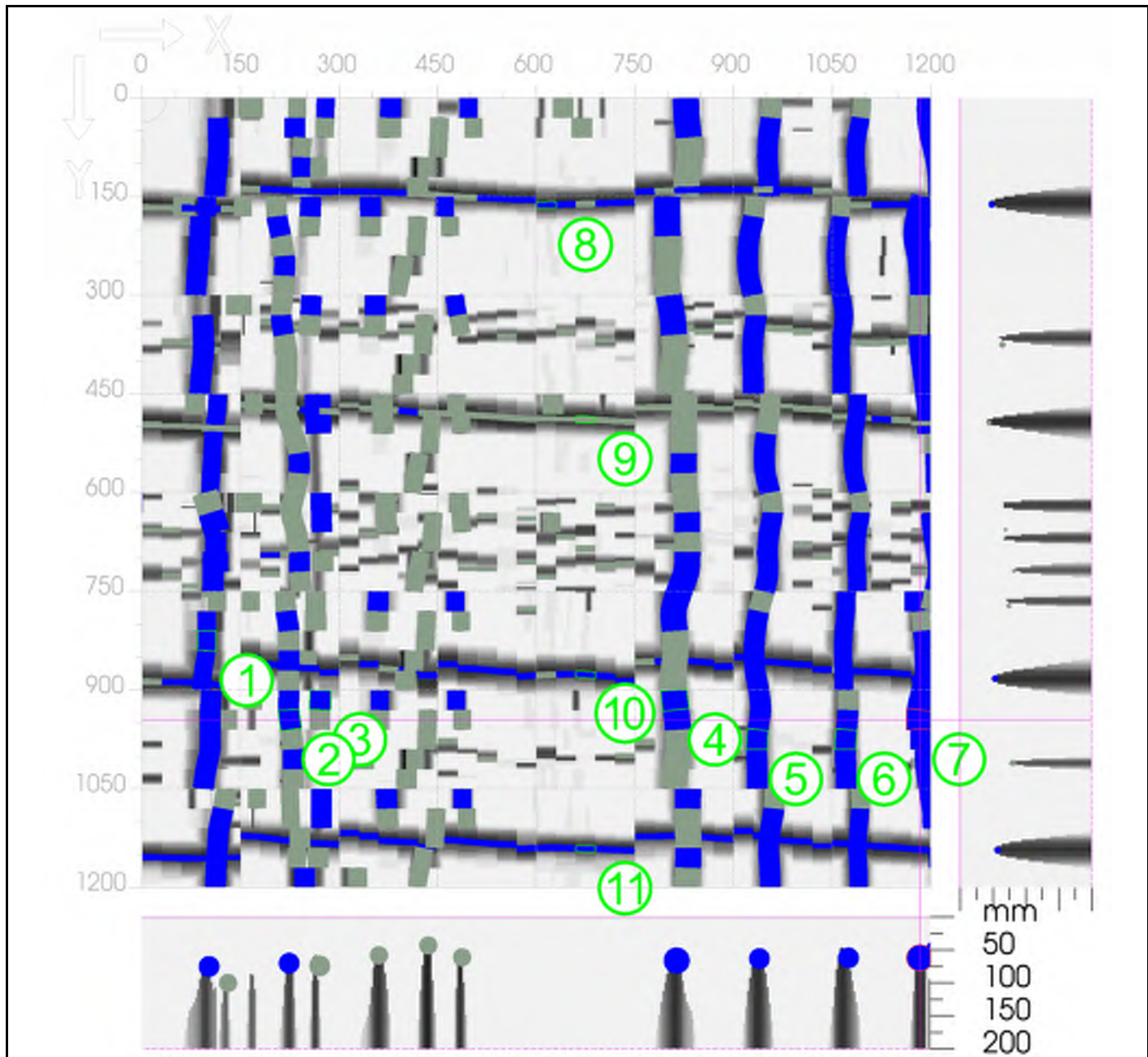
Results as reported.

Comments: Results as reported.

5.0 Appendix c – Individual Ferroscons

Hilti PROFIS Detection Report

Scan File: aa.fscan
Serial number: 227190008
Date / Time: 2019-10-02 23:02:13
Comment: -



x 1183 mm y 945 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 3	Object:	B3-1
User:	B.D		
Comment:	-		

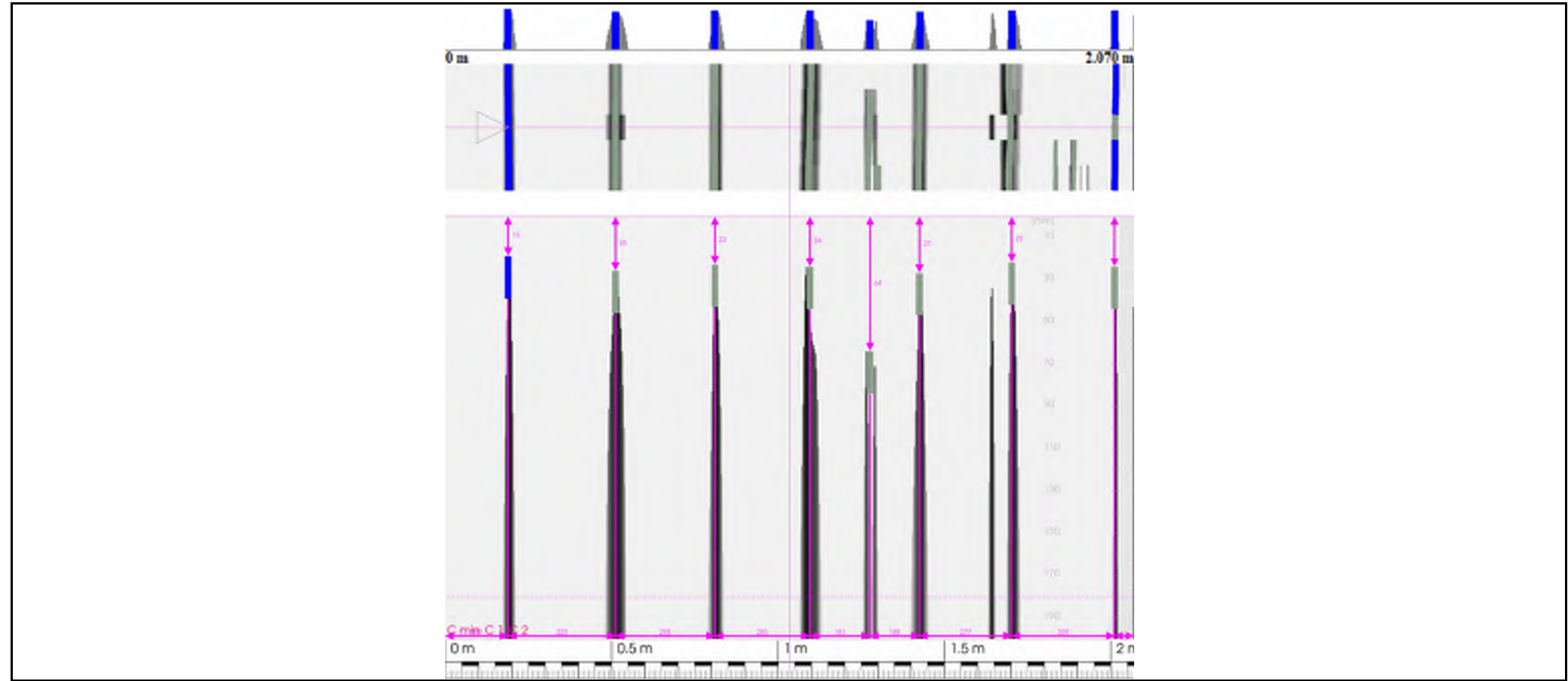
Ø Horizontal:	8 mm +/- 1 mm	Type:	Input
Ø Vertical:	32 mm +/- 4 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	99 mm	825 mm	62 mm	28 mm	Vertical	High
2.	224 mm	945 mm	54 mm	32 mm	Vertical	High
3.	271 mm	915 mm	55 mm	32 mm	Vertical	High
4.	811 mm	915 mm	47 mm	40 mm	Vertical	High
5.	935 mm	975 mm	47 mm	32 mm	Vertical	High
6.	1069 mm	975 mm	47 mm	32 mm	Vertical	High
7.	1183 mm	945 mm	42 mm	40 mm	Vertical	High
8.	615 mm	163 mm	44 mm	10 mm	Horizontal	High
9.	675 mm	488 mm	42 mm	10 mm	Horizontal	Low
10.	675 mm	875 mm	49 mm	10 mm	Horizontal	High
11.	675 mm	1141 mm	49 mm	10 mm	Horizontal	High

Project information:			
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 3	Object:	B3-2
User:	B.D		
Comment:	-		

Scan File: 13.fscan
Serial number: 227190008
Date / Time: 2019-09-25 19:56:27
Comment: -



Segment:

Width:	2.070 m	Position:	-
Ø:	14 mm +/- 6 mm	Number of rebars:	8
Detection mode:	Auto		
Overlay:	-		

Crosshair / cross section:

x:	1.035 m	y:	75 mm
z:	0 mm	Thickness:	180 mm

Range:

	Cover / Cut-off:	Number of rebars:
Cmin:	200 mm	8
C1:	200 mm	8
C2:	200 mm	8
Cut-off:	< 0 mm, 200 mm >	8

Statistic: Cover

Minimum:	19 mm	Maximum:	64 mm
Mean:	28 mm	Standard deviation:	15 mm
Median:	24 mm		

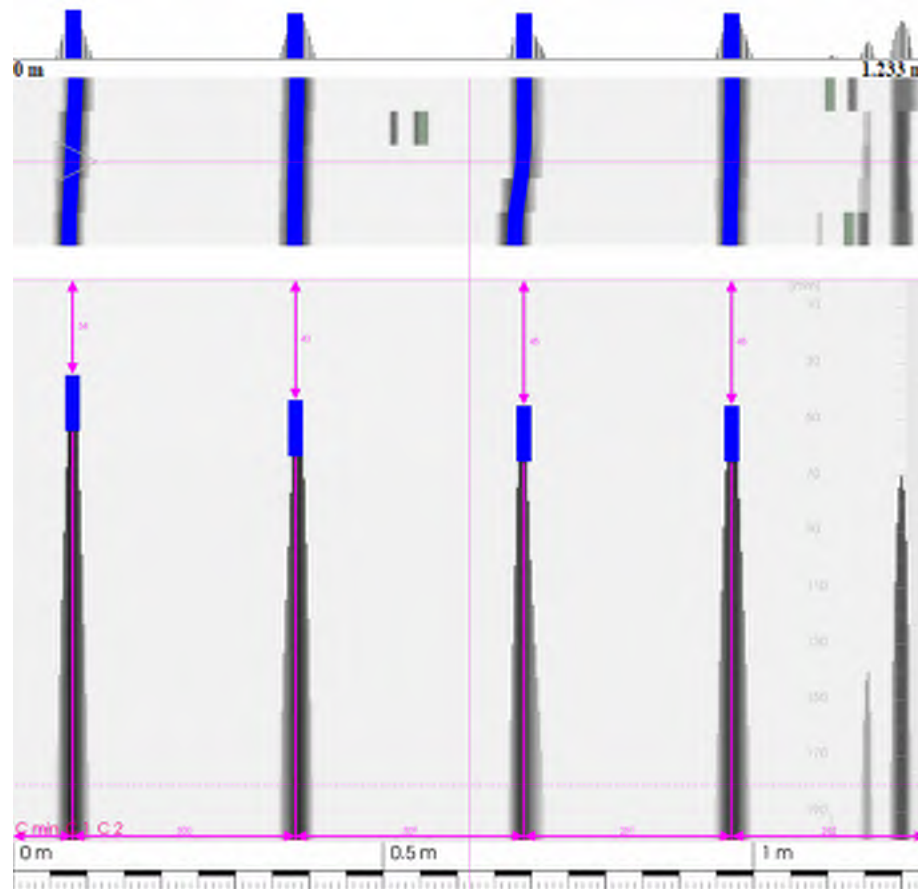
Hilti PROFIS Detection Report

Project information:

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 3	Object:	B3-3
User:	B.D		
Comment:	-		

Scan information:

Scan File:	15.fscan
Serial number:	227190008
Date / Time:	2019-09-25 20:01:55
Comment:	-



Segment:

Width:	1.233 m	Position:	-
Ø:	14 mm +/- 6 mm	Number of rebars:	4
Detection mode:	Auto		
Overlay:	-		

Crosshair / cross section:

x:	0.617 m	y:	75 mm
z:	0 mm	Thickness:	180 mm

Range:

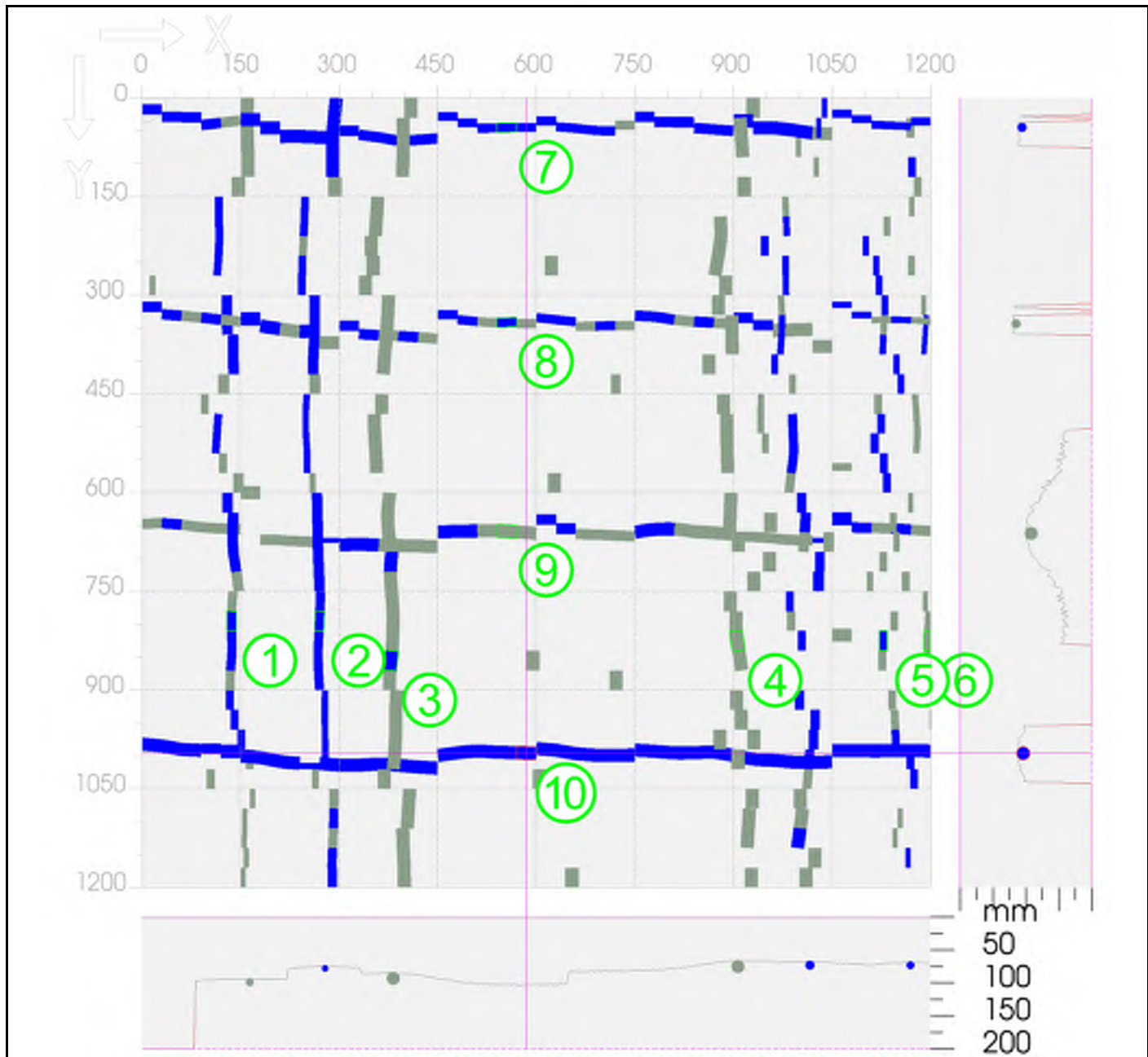
	Cover / Cut-off:	Number of rebars:
Cmin:	200 mm	4
C1:	200 mm	4
C2:	200 mm	4
Cut-off:	< 0 mm, 200 mm >	4

Statistic: Cover

Minimum:	34 mm	Maximum:	45 mm
Mean:	41 mm	Standard deviation:	5 mm
Median:	44 mm		

Hilti PROFIS Detection Report

Scan File: bb.fscan
Serial number: 227190008
Date / Time: 2019-10-02 23:06:32
Comment: -



x 585 mm y 996 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 3	Object:	B3-6
User:	B.D		
Comment:	-		

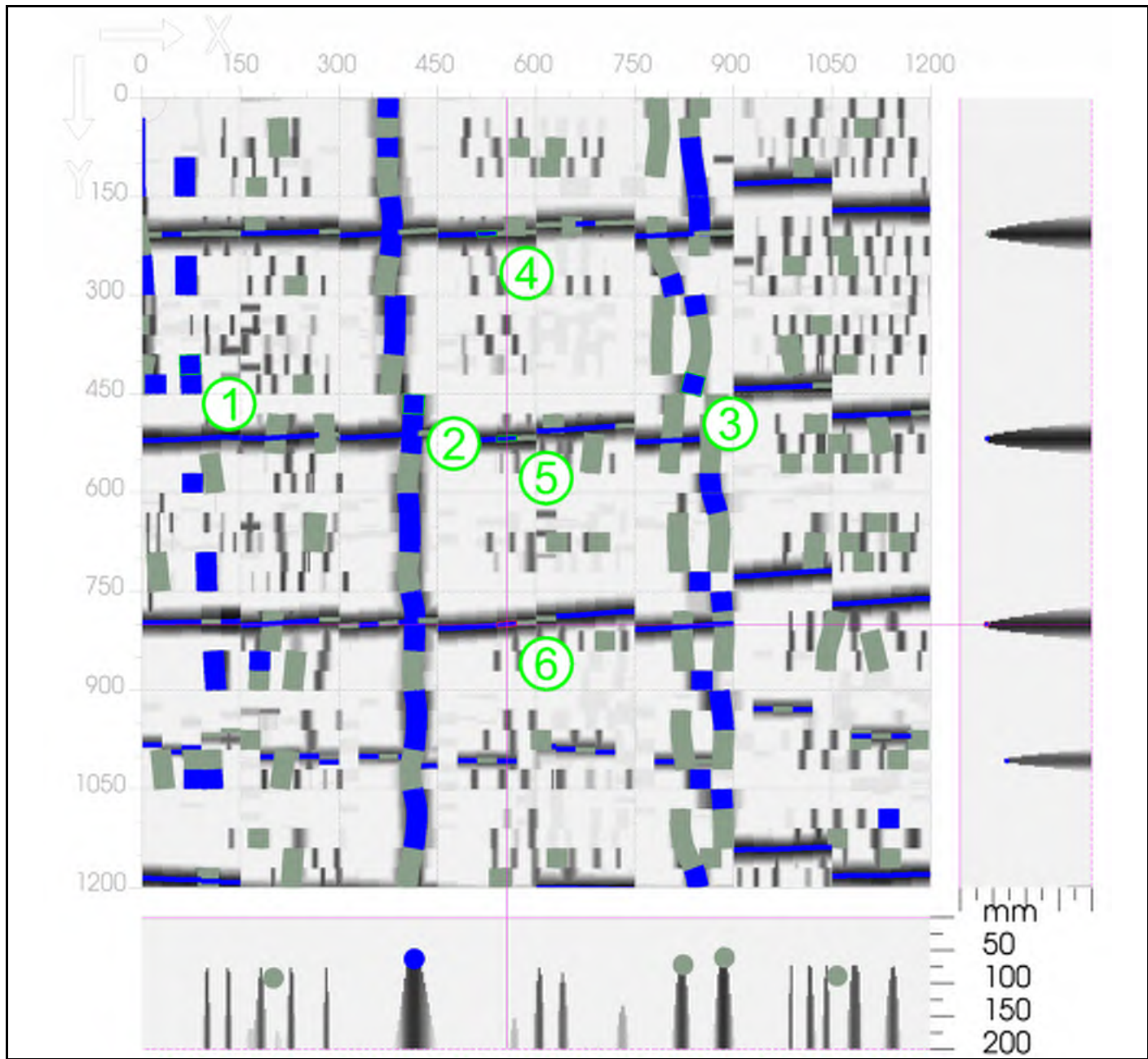
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	135 mm	795 mm	85 mm	14 mm	Vertical	High
2.	270 mm	795 mm	77 mm	14 mm	Vertical	High
3.	378 mm	855 mm	81 mm	20 mm	Vertical	High
4.	904 mm	825 mm	76 mm	20 mm	Vertical	Low
5.	1128 mm	825 mm	91 mm	12 mm	Vertical	High
6.	1193 mm	825 mm	114 mm	10 mm	Vertical	Low
7.	555 mm	45 mm	85 mm	14 mm	Horizontal	High
8.	555 mm	340 mm	85 mm	14 mm	Horizontal	High
9.	555 mm	657 mm	96 mm	20 mm	Horizontal	Low
10.	585 mm	996 mm	86 mm	20 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: cc.fscan
Serial number: 227190008
Date / Time: 2019-10-02 23:14:45
Comment: -



x 555 mm y 800 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 3	Object:	B3-7
User:	B.D		
Comment:	-		

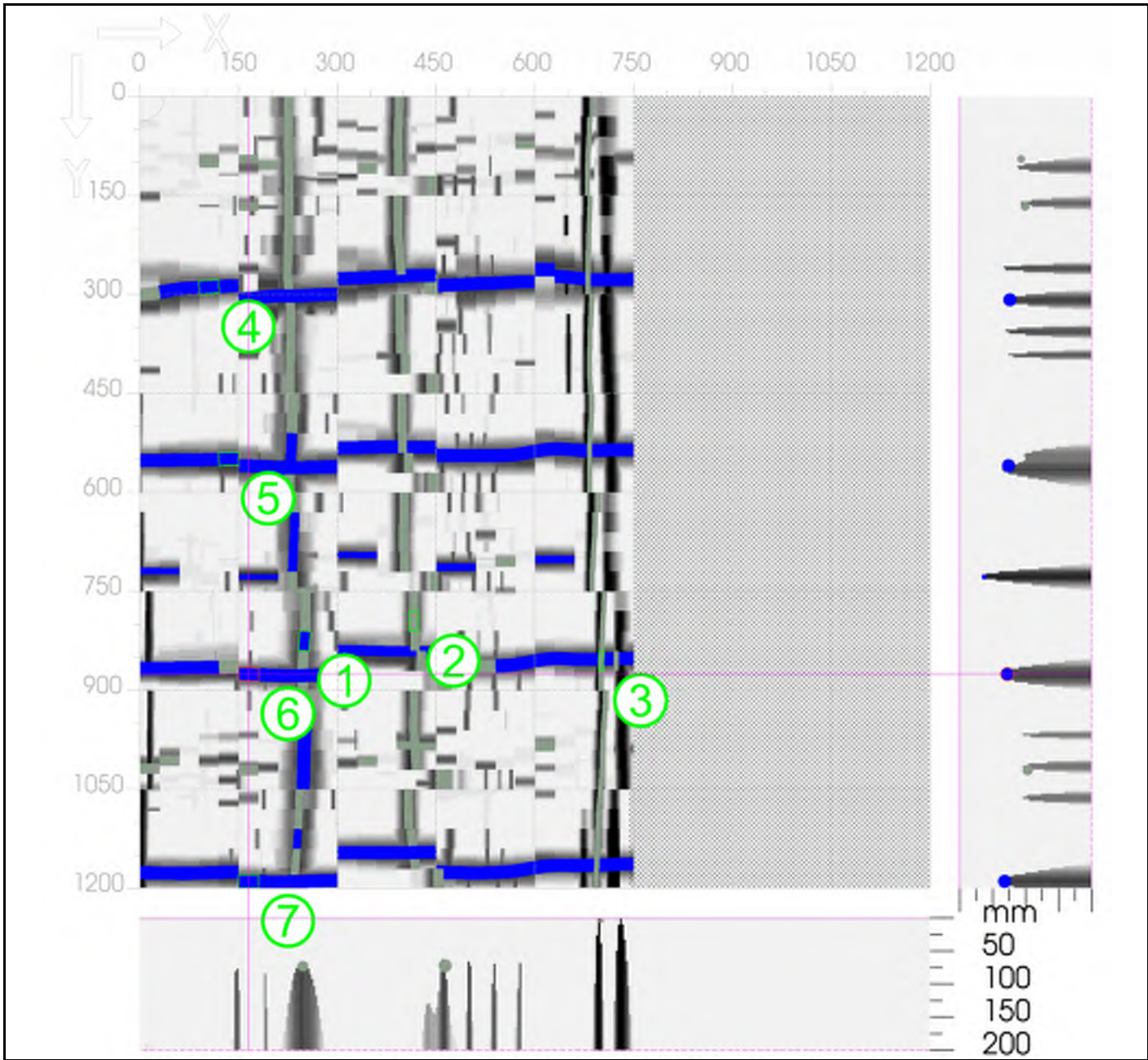
Ø Horizontal:	8 mm +/- 0 mm	Type:	Input
Ø Vertical:	32 mm +/- 0 mm	Type:	Input
Detection mode:	Rebar		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	73 mm	405 mm	51 mm	32 mm	Vertical	High
2.	414 mm	465 mm	48 mm	32 mm	Vertical	High
3.	835 mm	435 mm	52 mm	32 mm	Vertical	High
4.	525 mm	206 mm	39 mm	8 mm	Horizontal	High
5.	555 mm	517 mm	37 mm	8 mm	Horizontal	High
6.	555 mm	800 mm	36 mm	8 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: dd.fscan
Serial number: 227190008
Date / Time: 2019-10-02 23:27:29
Comment: -



x 165 mm y 875 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 3	Object:	B3-10
User:	B.D		
Comment:	-		

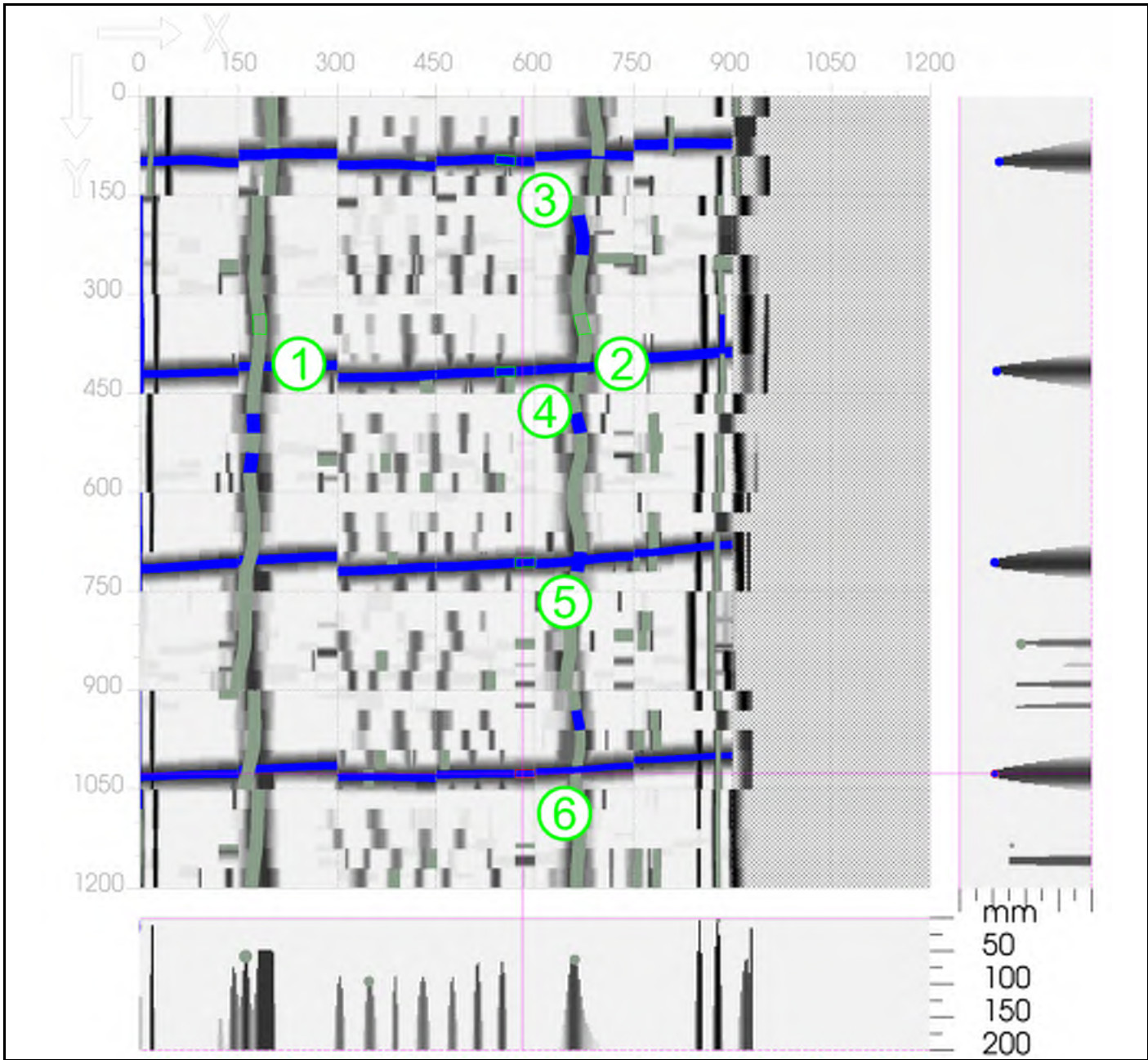
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	250 mm	825 mm	66 mm	16 mm	Vertical	High
2.	416 mm	795 mm	36 mm	14 mm	Vertical	Low
3.	700 mm	855 mm	0 mm	8 mm	Vertical	Low
4.	105 mm	289 mm	58 mm	20 mm	Horizontal	High
5.	135 mm	549 mm	57 mm	20 mm	Horizontal	High
6.	165 mm	875 mm	62 mm	20 mm	Horizontal	High
7.	165 mm	1189 mm	58 mm	20 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: e.fscan
Serial number: 227190008
Date / Time: 2019-10-02 23:38:23
Comment: -



x 580 mm y 1026 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 3	Object:	B3-11
User:	B.D		
Comment:	-		

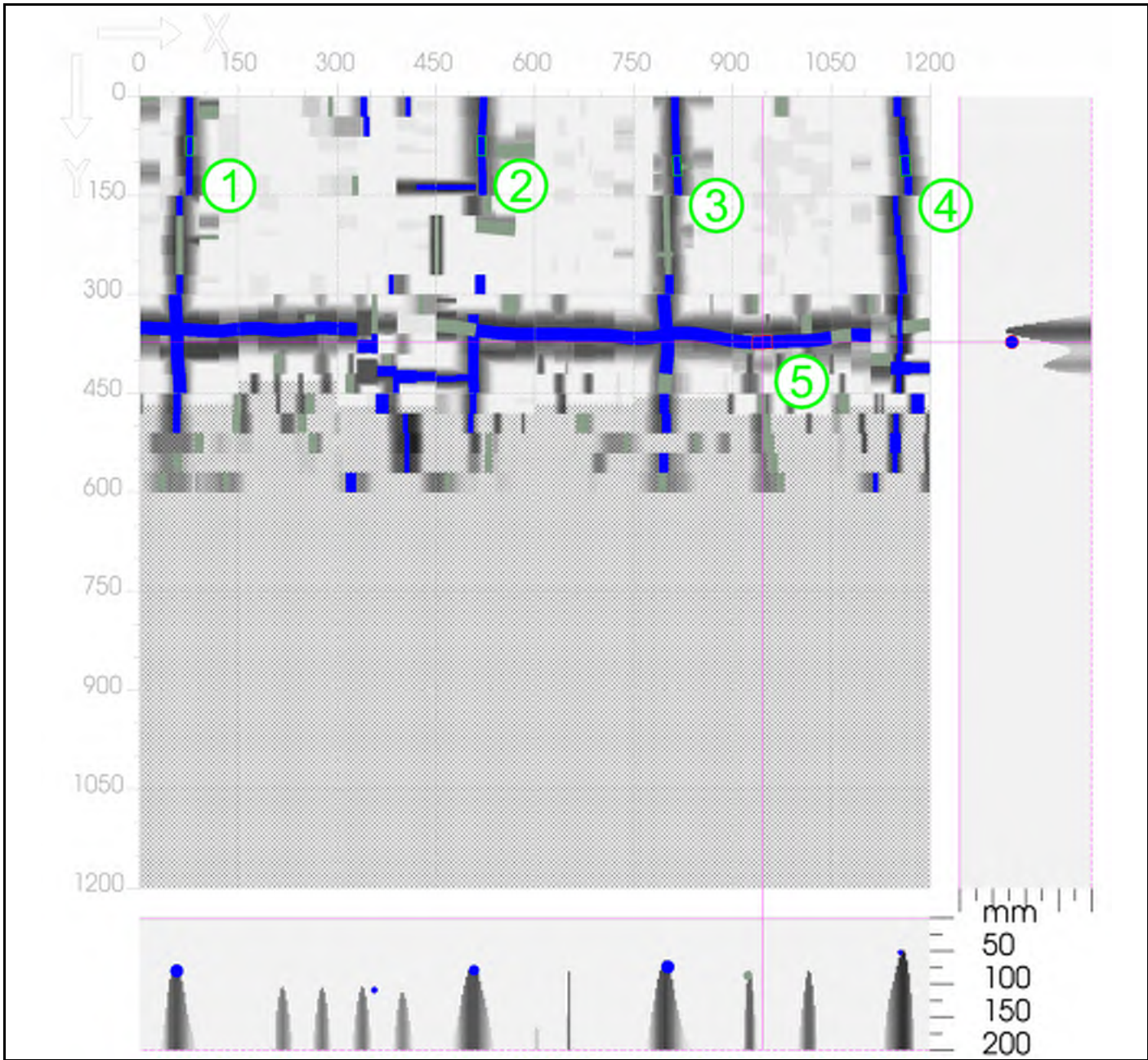
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	181 mm	345 mm	53 mm	20 mm	Vertical	Low
2.	672 mm	345 mm	52 mm	20 mm	Vertical	Low
3.	555 mm	97 mm	54 mm	14 mm	Horizontal	High
4.	555 mm	417 mm	51 mm	14 mm	Horizontal	High
5.	585 mm	706 mm	46 mm	14 mm	Horizontal	High
6.	585 mm	1026 mm	47 mm	12 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 87.fscan
Serial number: 227190008
Date / Time: 2019-10-01 20:07:57
Comment: -



x 945 mm y 372 mm z 0 mm Thickness: 200 mm
Overlay: - mm

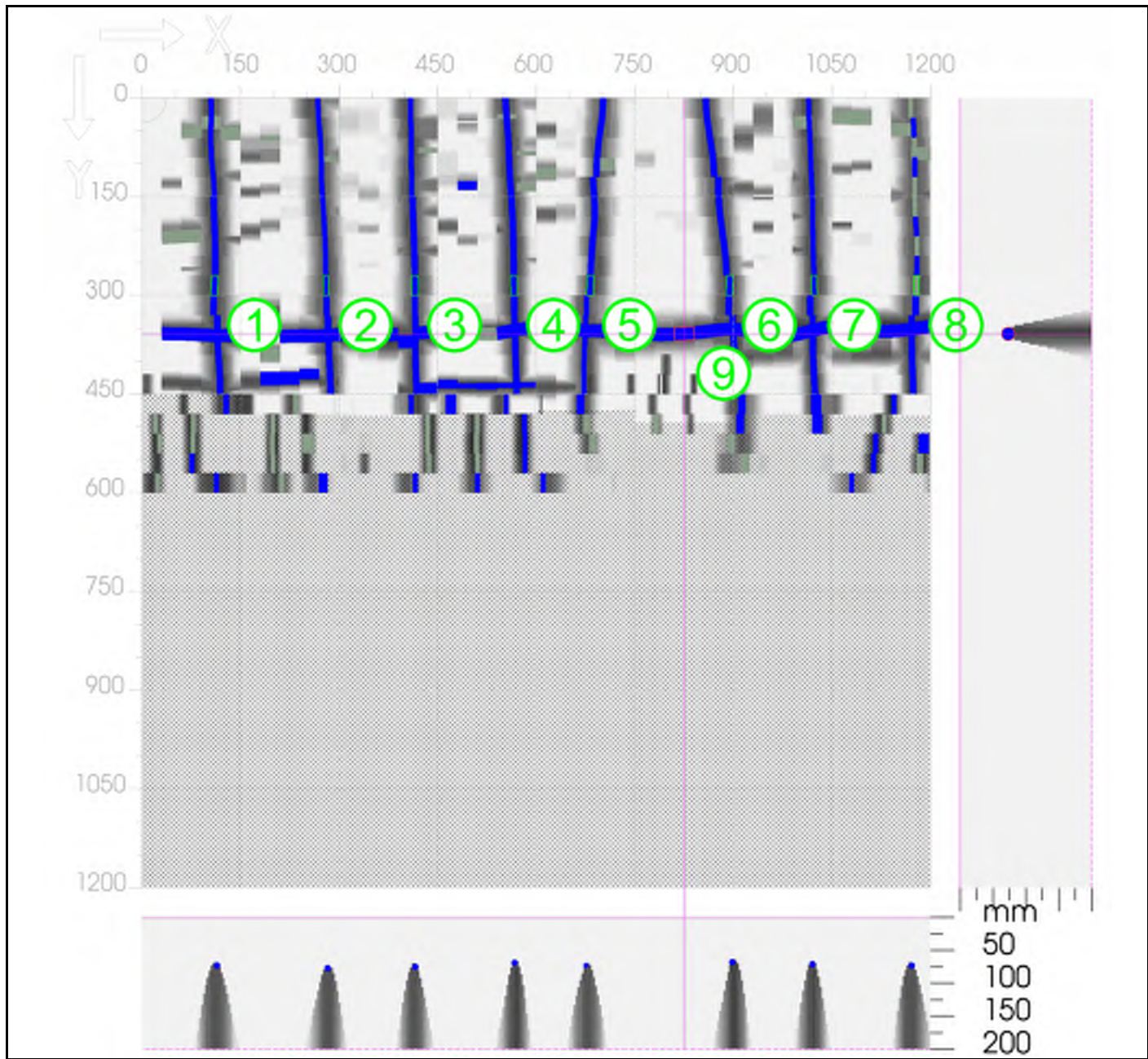
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 3	Object:	B3-13
User:	B.D		
Comment:	-		
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	75 mm	75 mm	60 mm	10 mm	Vertical	High
2.	518 mm	75 mm	81 mm	12 mm	Vertical	High
3.	815 mm	105 mm	62 mm	12 mm	Vertical	High
4.	1163 mm	105 mm	74 mm	14 mm	Vertical	High
5.	945 mm	372 mm	69 mm	20 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 91.fscan
Serial number: 227190008
Date / Time: 2019-10-01 21:21:19
Comment: -



x 825 mm y 358 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 3	Object:	B3-14
User:	B.D		
Comment:	-		

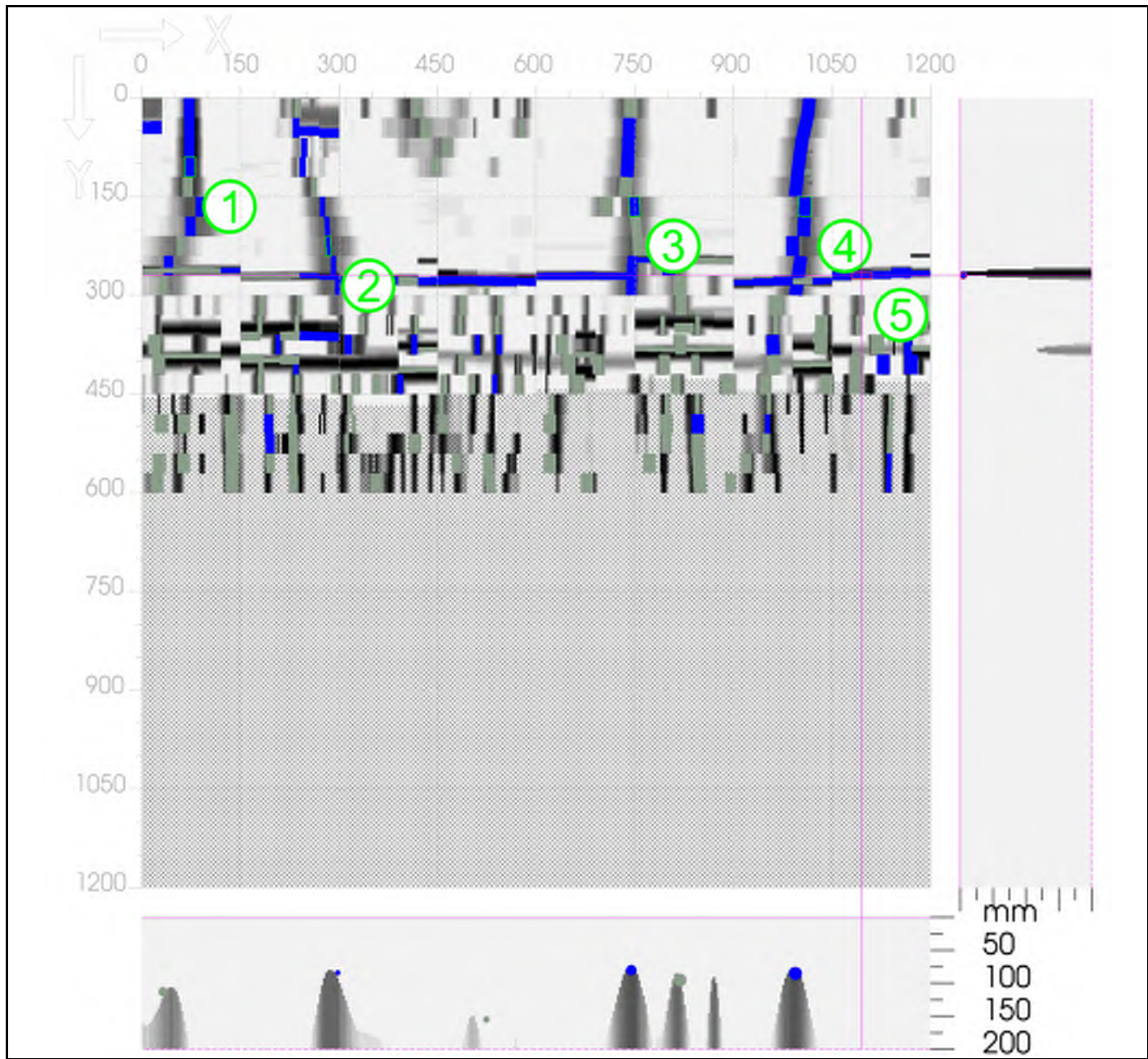
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	111 mm	285 mm	68 mm	10 mm	Vertical	High
2.	280 mm	285 mm	73 mm	8 mm	Vertical	High
3.	416 mm	285 mm	70 mm	10 mm	Vertical	High
4.	566 mm	285 mm	63 mm	10 mm	Vertical	High
5.	681 mm	285 mm	73 mm	10 mm	Vertical	High
6.	895 mm	285 mm	66 mm	10 mm	Vertical	High
7.	1023 mm	285 mm	65 mm	8 mm	Vertical	High
8.	1179 mm	285 mm	71 mm	8 mm	Vertical	Low
9.	825 mm	358 mm	63 mm	20 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 102.fscan
Serial number: 227190008
Date / Time: 2019-10-02 00:37:08
Comment: -



x 1095 mm y 270 mm z 0 mm Thickness: 200 mm
Overlay: - mm

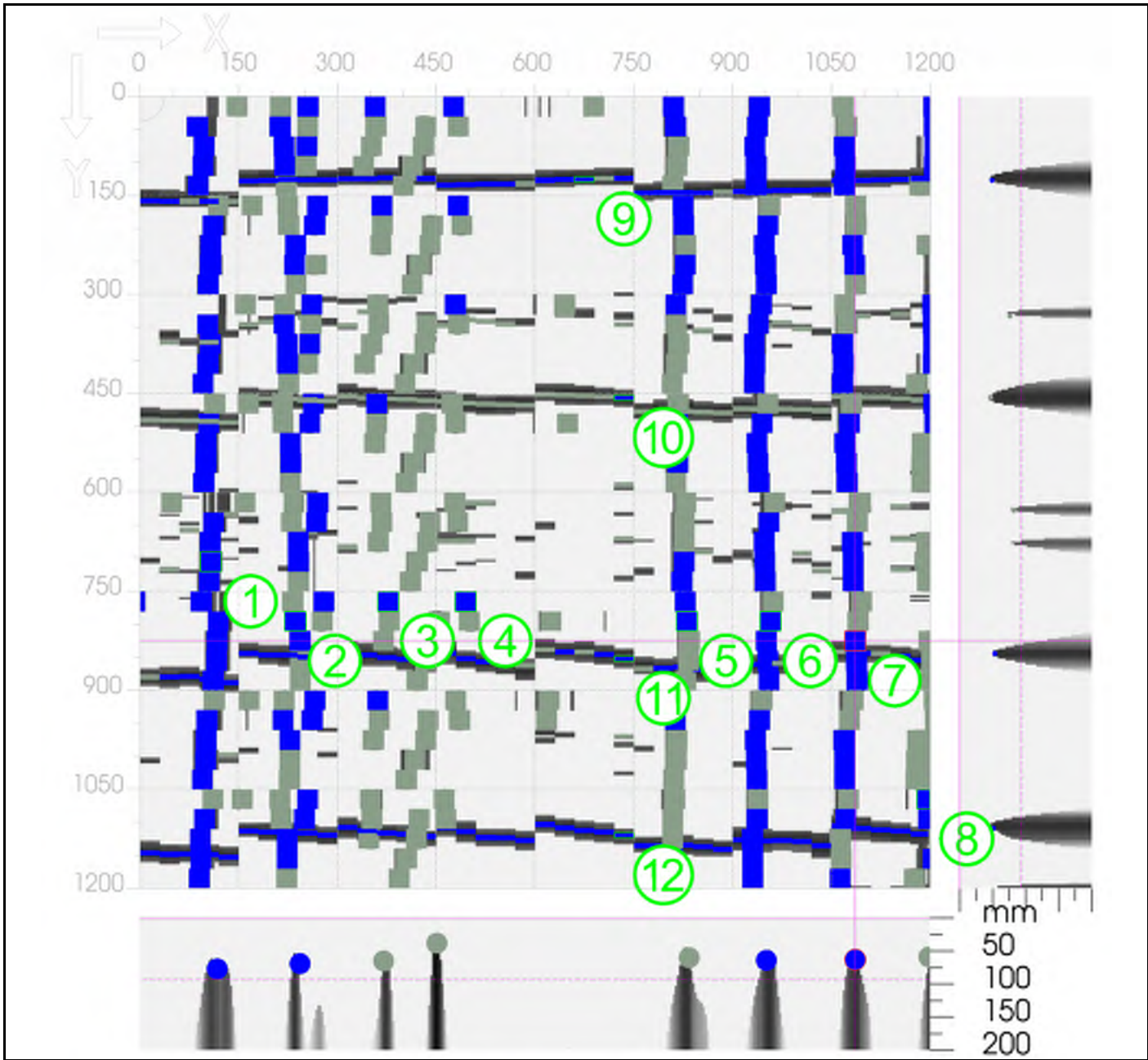
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 3	Object:	B3-16
User:	B.D		
Comment:	-		
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	73 mm	105 mm	32 mm	16 mm	Vertical	High
2.	284 mm	225 mm	78 mm	8 mm	Vertical	High
3.	748 mm	165 mm	76 mm	16 mm	Vertical	High
4.	1009 mm	165 mm	79 mm	20 mm	Vertical	High
5.	1095 mm	270 mm	0 mm	10 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: a.fscan
Serial number: 227190008
Date / Time: 2019-10-02 22:57:41
Comment: -



x 1086 mm y 825 mm z 0 mm Thickness: 93 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 3	Object:	B3-1
User:	B.D		
Comment:	-		

Ø Horizontal:	8 mm +/- 0 mm	Type:	Input
Ø Vertical:	32 mm +/- 0 mm	Type:	Input
Detection mode:	Rebar		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	108 mm	705 mm	62 mm	32 mm	Vertical	High
2.	236 mm	795 mm	55 mm	32 mm	Vertical	High
3.	377 mm	765 mm	42 mm	32 mm	Vertical	High
4.	495 mm	765 mm	32 mm	32 mm	Vertical	High
5.	830 mm	795 mm	46 mm	32 mm	Vertical	High
6.	958 mm	795 mm	48 mm	32 mm	Vertical	High
7.	1086 mm	825 mm	47 mm	32 mm	Vertical	High
8.	1196 mm	1065 mm	28 mm	32 mm	Vertical	High
9.	675 mm	125 mm	43 mm	8 mm	Horizontal	High
10.	735 mm	457 mm	41 mm	8 mm	Horizontal	High
11.	735 mm	852 mm	47 mm	8 mm	Horizontal	High
12.	735 mm	1119 mm	51 mm	8 mm	Horizontal	High

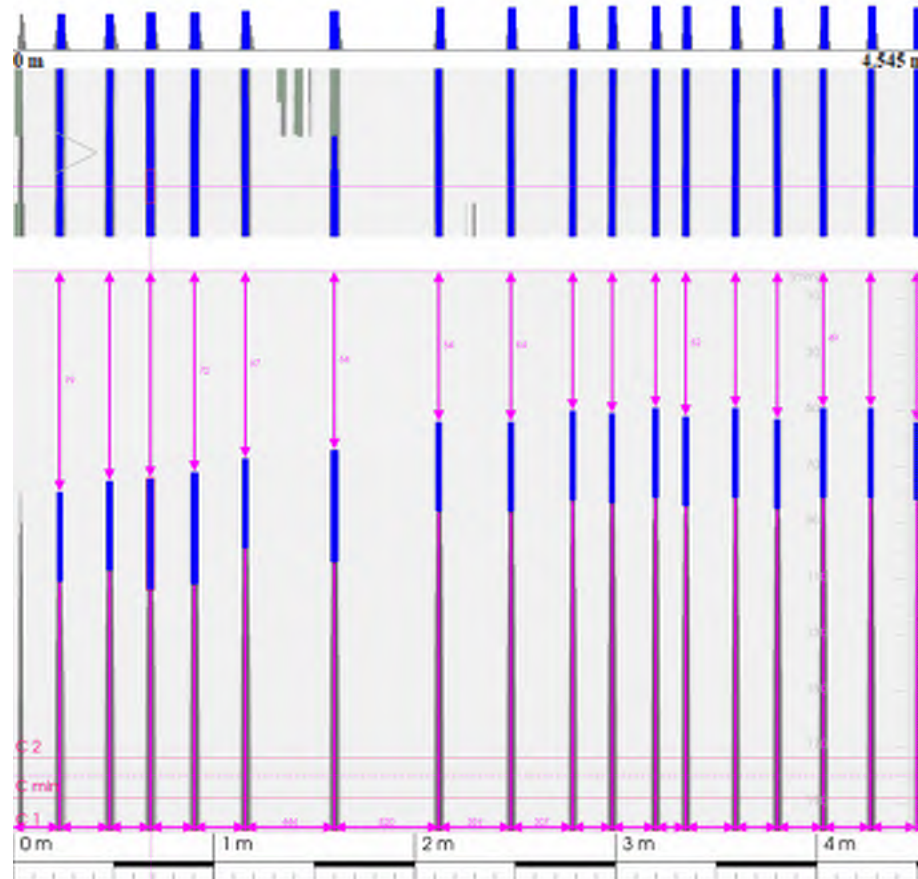
Hilti PROFIS Detection Report

Project information:

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 3	Object:	B3-2
User:	B.D		
Comment:	-		

Scan information:

Scan File:	12.fscan
Serial number:	227190008
Date / Time:	2019-09-25 19:54:21
Comment:	-



Segment:

Width:	4.545 m	Position:	-
Ø:	14 mm +/- 28 mm	Number of rebars:	17
Detection mode:	Auto		
Overlay:	-		

Crosshair / cross section:

x:	0.684 m	y:	105 mm
z:	0 mm	Thickness:	180 mm

Range:

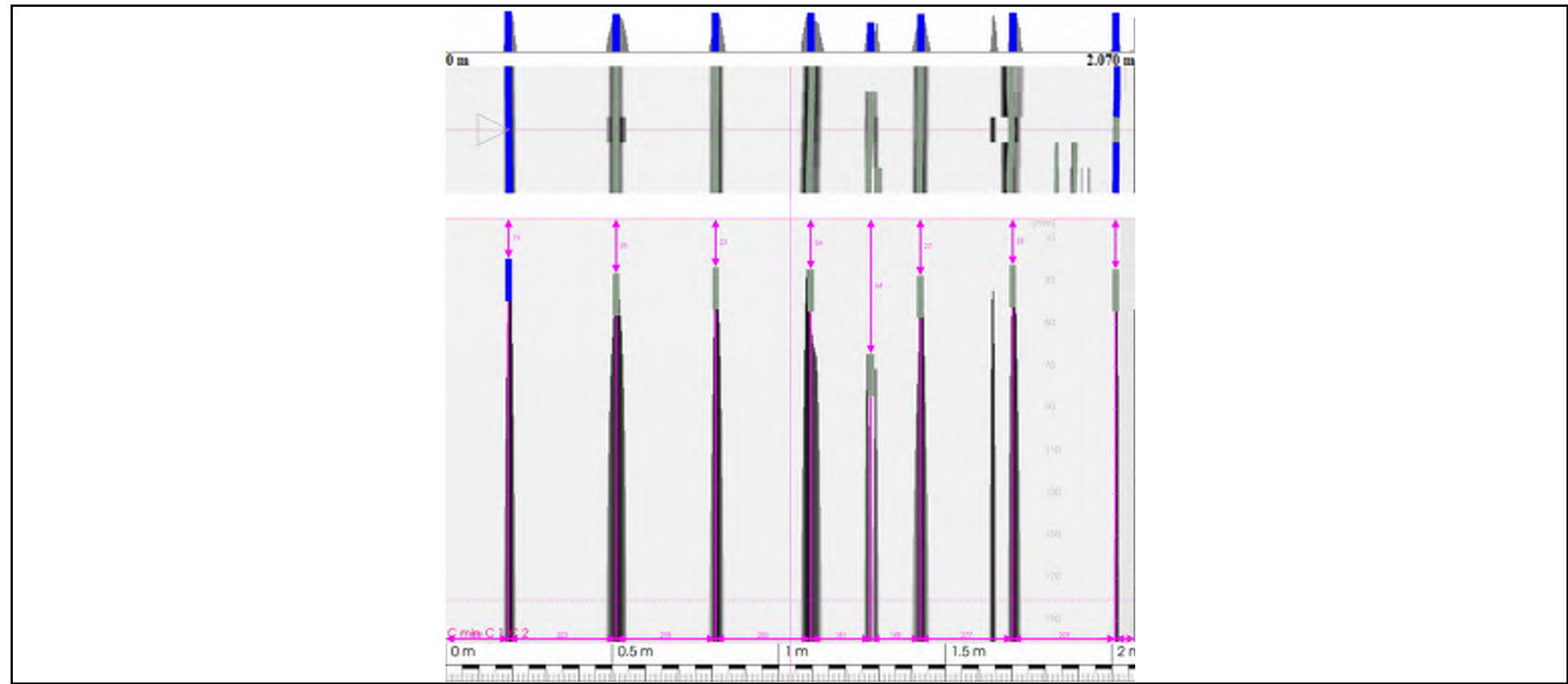
	Cover / Cut-off:	Number of rebars:
Cmin:	188 mm	17
C1:	200 mm	17
C2:	174 mm	17
Cut-off:	< 0 mm, 200 mm >	17

Statistic: Cover

Minimum:	49 mm	Maximum:	79 mm
Mean:	58 mm	Standard deviation:	11 mm
Median:	54 mm		

Project information:			
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 3	Object:	B3-3
User:	B.D		
Comment:	-		

Scan File: 13.fscan
Serial number: 227190008
Date / Time: 2019-09-25 19:56:27
Comment: -



Segment:

Width:	2.070 m	Position:	-
Ø:	14 mm +/- 6 mm	Number of rebars:	8
Detection mode:	Auto		
Overlay:	-		

Crosshair / cross section:

x:	1.035 m	y:	75 mm
z:	0 mm	Thickness:	180 mm

Range:

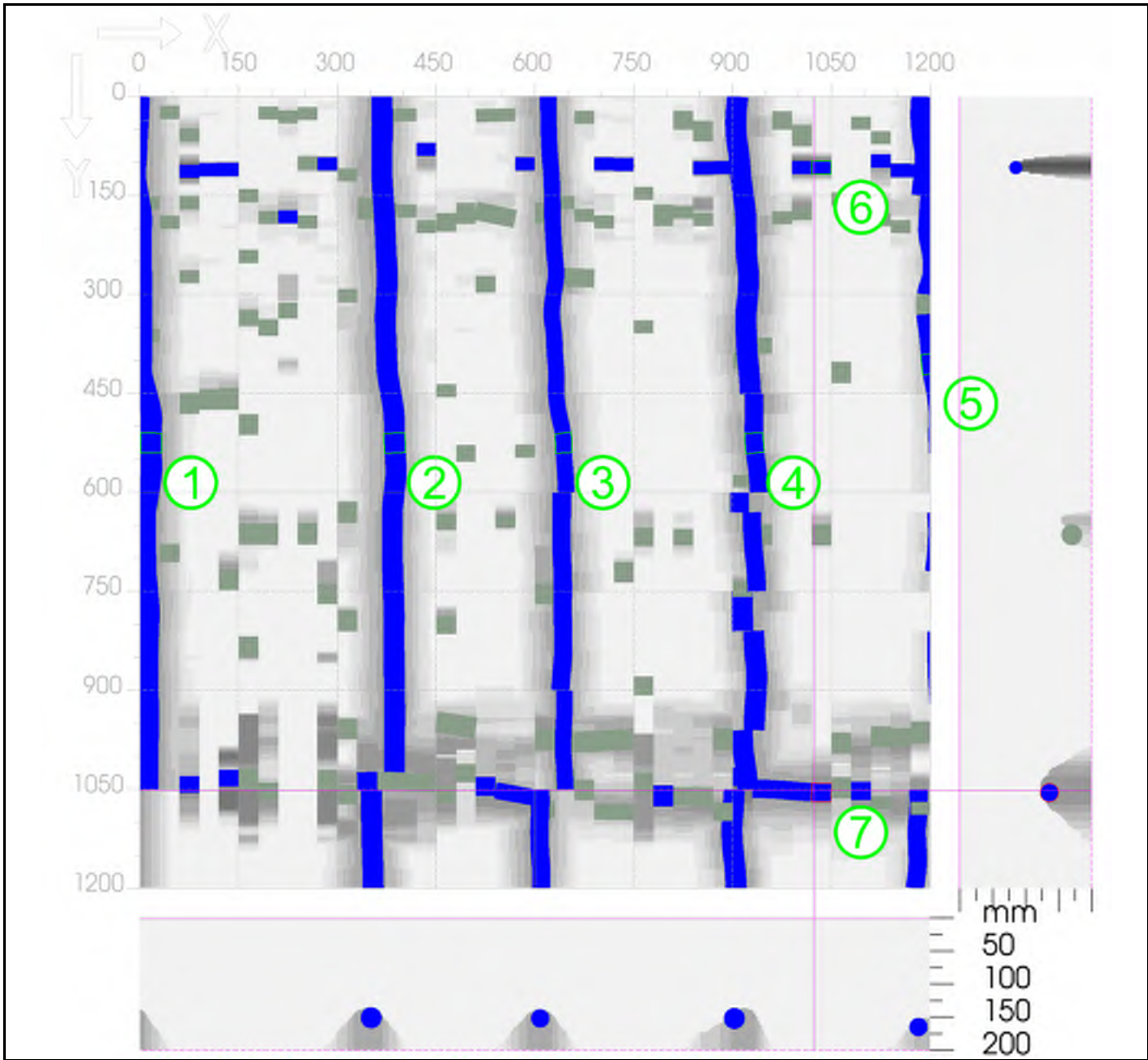
	Cover / Cut-off:	Number of rebars:
Cmin:	200 mm	8
C1:	200 mm	8
C2:	200 mm	8
Cut-off:	< 0 mm, 200 mm >	8

Statistic: Cover

Minimum:	19 mm	Maximum:	64 mm
Mean:	28 mm	Standard deviation:	15 mm
Median:	24 mm		

Hilti PROFIS Detection Report

Scan File: 18.fscan
Serial number: 227190008
Date / Time: 2019-09-25 20:12:04
Comment: -



x 1024 mm y 1052 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 3	Object:	B3-4
User:	B.D		
Comment:	-		

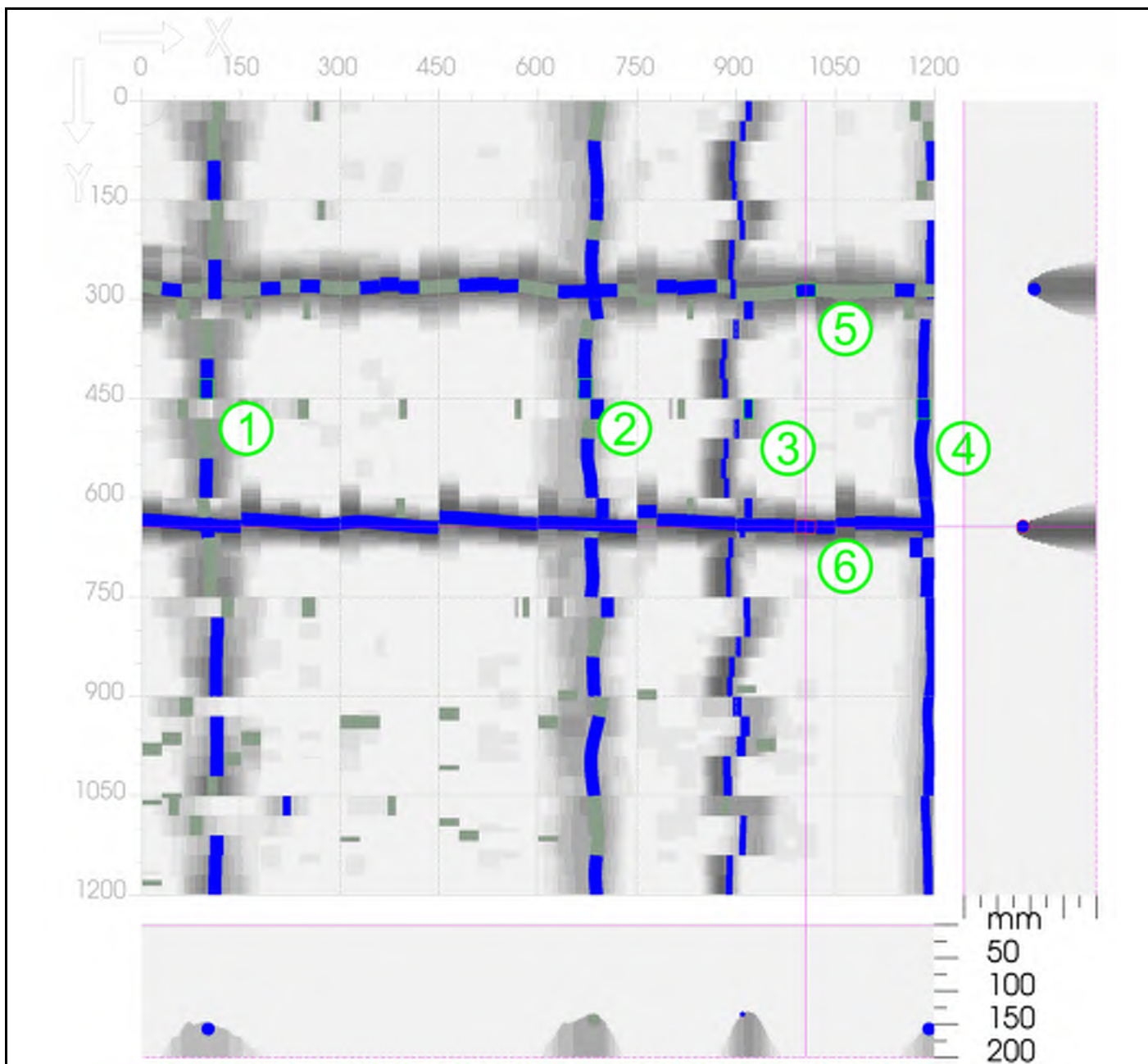
Ø Horizontal:	28 mm +/- 6 mm	Type:	Input
Ø Vertical:	28 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	17 mm	525 mm	132 mm	32 mm	Vertical	High
2.	387 mm	525 mm	138 mm	32 mm	Vertical	High
3.	643 mm	525 mm	137 mm	25 mm	Vertical	High
4.	932 mm	525 mm	135 mm	28 mm	Vertical	High
5.	1202 mm	405 mm	148 mm	28 mm	Vertical	High
6.	1035 mm	108 mm	75 mm	20 mm	Horizontal	High
7.	1035 mm	1055 mm	122 mm	28 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 21.fscan
Serial number: 227190008
Date / Time: 2019-09-25 20:20:06
Comment: -



x 1005 mm y 643 mm z 0 mm Thickness: 200 mm
Overlay: - mm

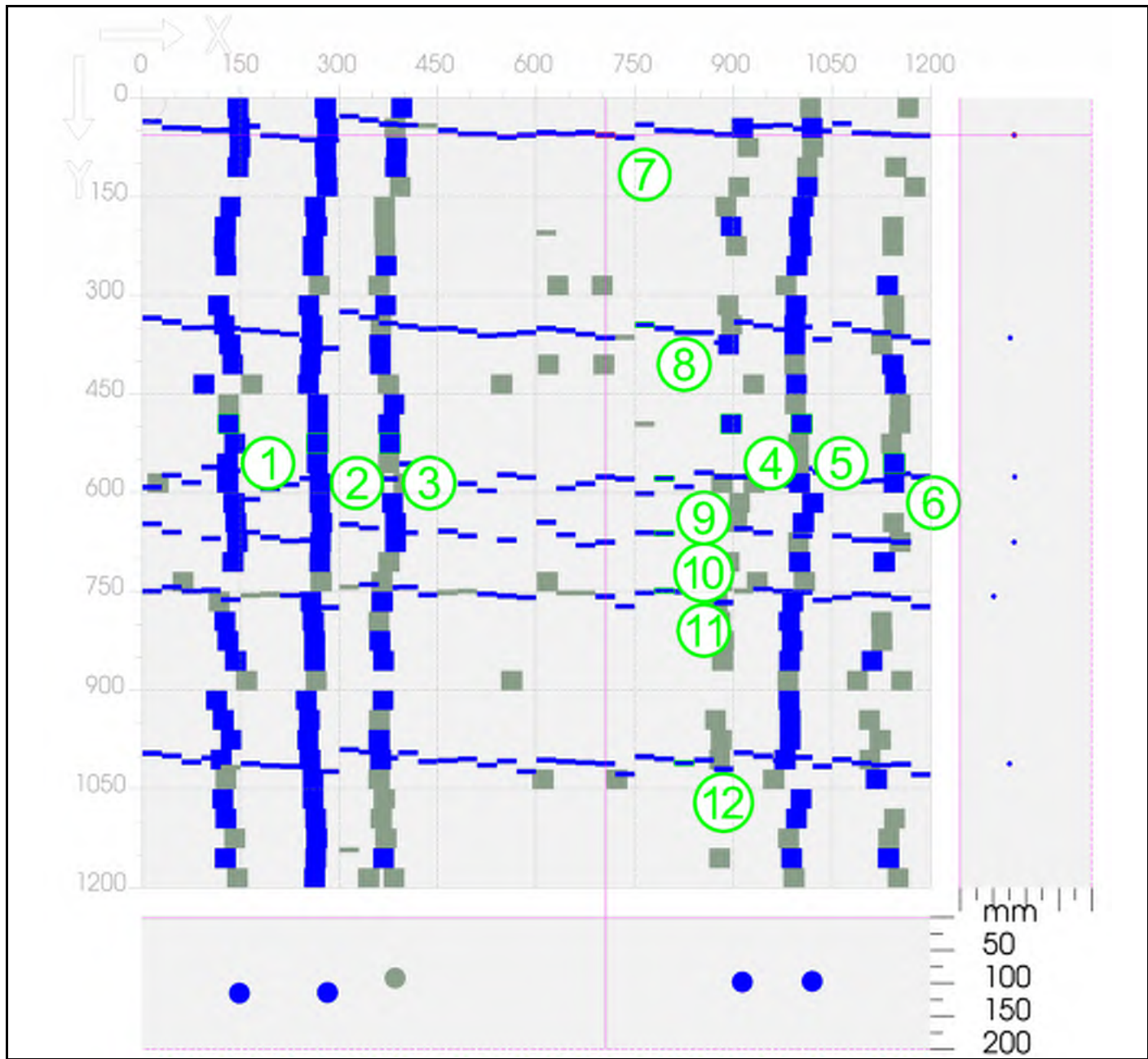
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 3	Object:	B3-5
User:	B.D		
Comment:	-		
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	98 mm	435 mm	98 mm	20 mm	Vertical	High
2.	671 mm	435 mm	135 mm	20 mm	Vertical	High
3.	918 mm	465 mm	134 mm	14 mm	Vertical	High
4.	1184 mm	465 mm	133 mm	20 mm	Vertical	High
5.	1005 mm	284 mm	96 mm	20 mm	Horizontal	High
6.	1005 mm	643 mm	79 mm	20 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: b.fscan
Serial number: 227190008
Date / Time: 2019-10-02 23:09:41
Comment: -



x 705 mm y 56 mm z 0 mm Thickness: 200 mm
Overlay: - mm

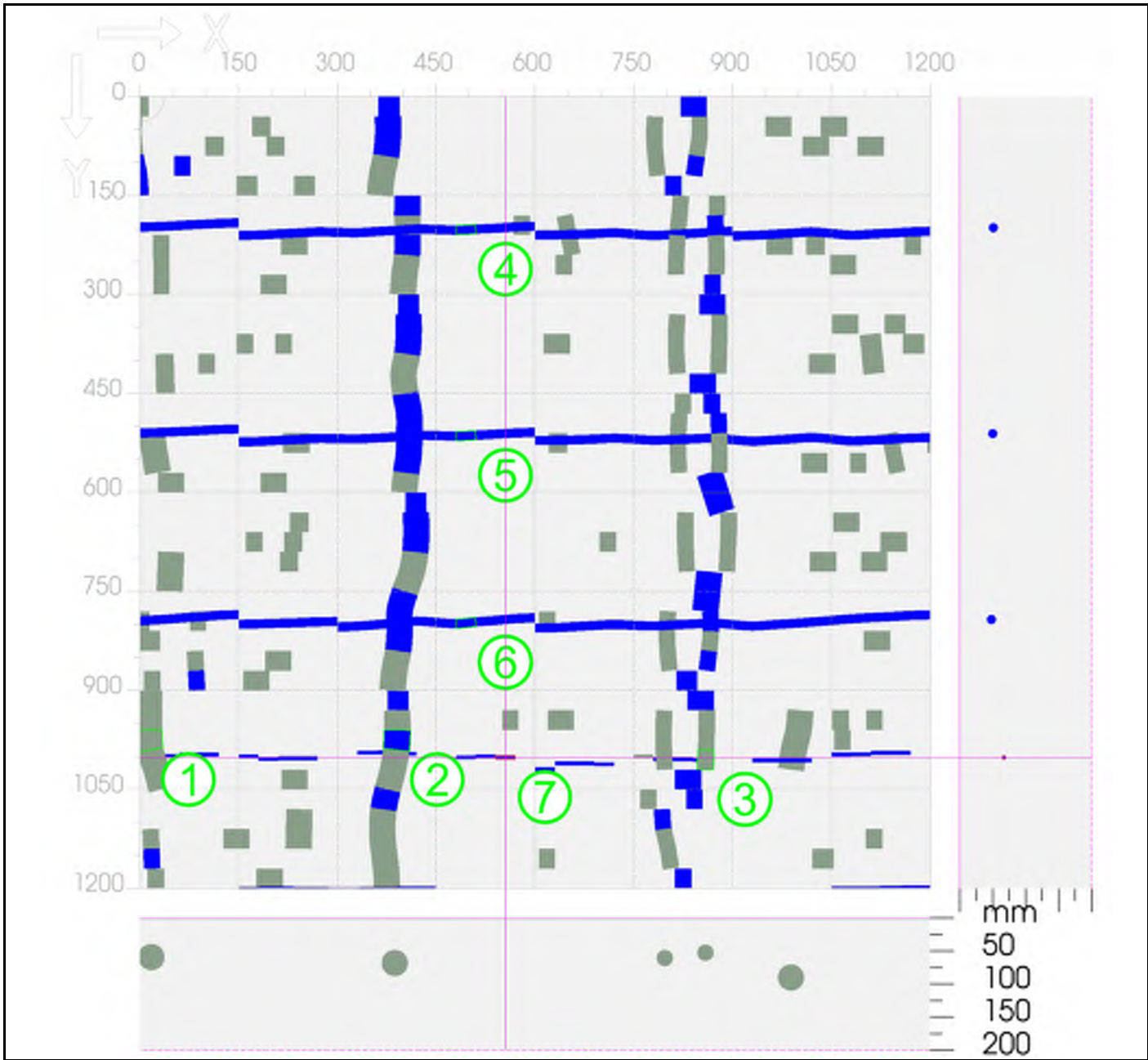
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 3	Object:	B3-6
User:	B.D		
Comment:	-		
Ø Horizontal:	8 mm +/- 0 mm	Type:	Input
Ø Vertical:	32 mm +/- 0 mm	Type:	Input
Detection mode:	Rebar		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	132 mm	495 mm	92 mm	32 mm	Vertical	High
2.	267 mm	525 mm	87 mm	32 mm	Vertical	High
3.	377 mm	525 mm	84 mm	32 mm	Vertical	High
4.	897 mm	495 mm	85 mm	32 mm	Vertical	High
5.	1004 mm	495 mm	92 mm	32 mm	Vertical	High
6.	1145 mm	555 mm	73 mm	32 mm	Vertical	High
7.	705 mm	56 mm	78 mm	8 mm	Horizontal	High
8.	765 mm	345 mm	71 mm	8 mm	Horizontal	High
9.	795 mm	578 mm	86 mm	8 mm	Horizontal	High
10.	795 mm	661 mm	75 mm	8 mm	Horizontal	High
11.	795 mm	749 mm	46 mm	8 mm	Horizontal	High
12.	825 mm	1010 mm	79 mm	8 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: c.fscan
Serial number: 227190008
Date / Time: 2019-10-02 23:18:22
Comment: -



x 555 mm y 1002 mm z 0 mm Thickness: 200 mm
Overlay: - mm

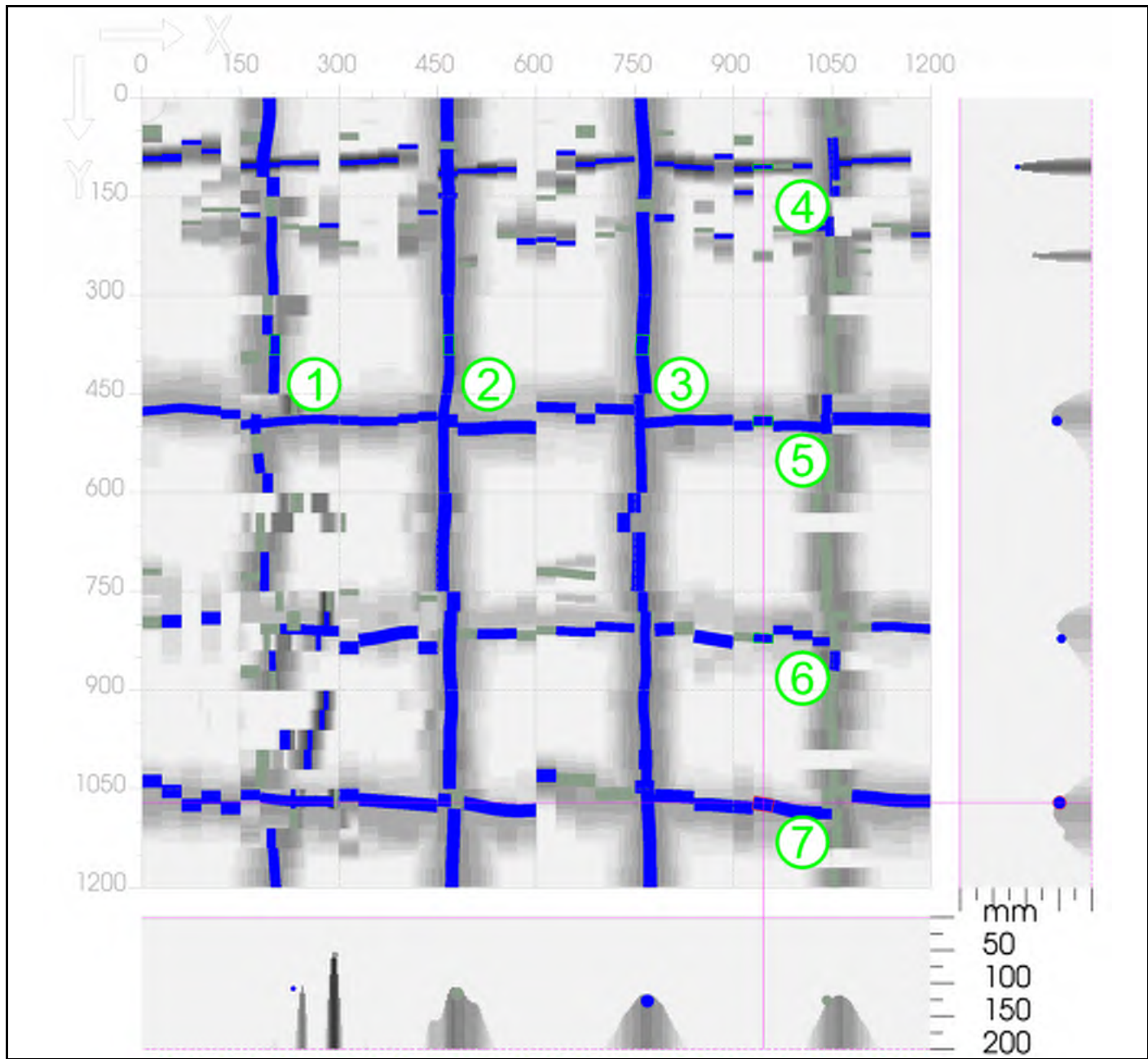
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 3	Object:	B3-7
User:	B.D		
Comment:	-		
Ø Horizontal:	8 mm +/- 6 mm	Type:	Input
Ø Vertical:	32 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	14 mm	975 mm	46 mm	40 mm	Vertical	Low
2.	392 mm	975 mm	48 mm	40 mm	Vertical	High
3.	859 mm	1005 mm	40 mm	25 mm	Vertical	Low
4.	495 mm	202 mm	44 mm	14 mm	Horizontal	High
5.	495 mm	514 mm	42 mm	14 mm	Horizontal	High
6.	495 mm	797 mm	42 mm	14 mm	Horizontal	High
7.	555 mm	1002 mm	64 mm	6 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 28.fscan
Serial number: 227190008
Date / Time: 2019-09-25 20:43:06
Comment: -



x 945 mm y 1071 mm z 0 mm Thickness: 200 mm
Overlay: - mm

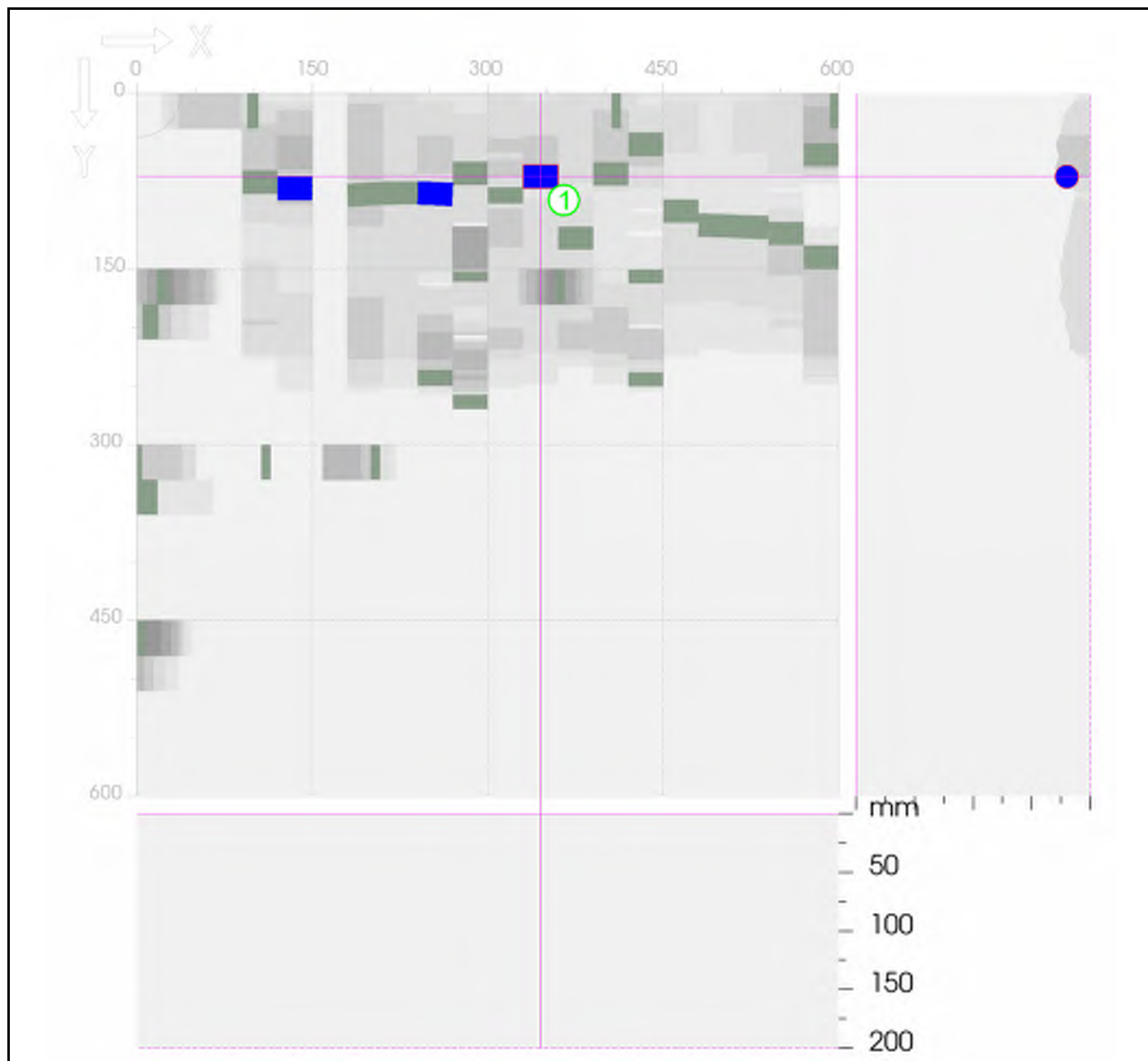
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 3	Object:	B3-8
User:	B.D		
Comment:	-		
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	202 mm	375 mm	123 mm	16 mm	Vertical	High
2.	467 mm	375 mm	116 mm	16 mm	Vertical	High
3.	761 mm	375 mm	121 mm	20 mm	Vertical	High
4.	945 mm	105 mm	83 mm	8 mm	Horizontal	High
5.	945 mm	491 mm	139 mm	16 mm	Horizontal	High
6.	945 mm	821 mm	147 mm	14 mm	Horizontal	High
7.	945 mm	1071 mm	141 mm	20 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 10.fscan
Serial number: 227190008
Date / Time: 2019-09-24 21:21:31
Comment: -



x 345 mm y 71 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 3	Object:	B3 - 9
User:	B.D		
Comment:	-		

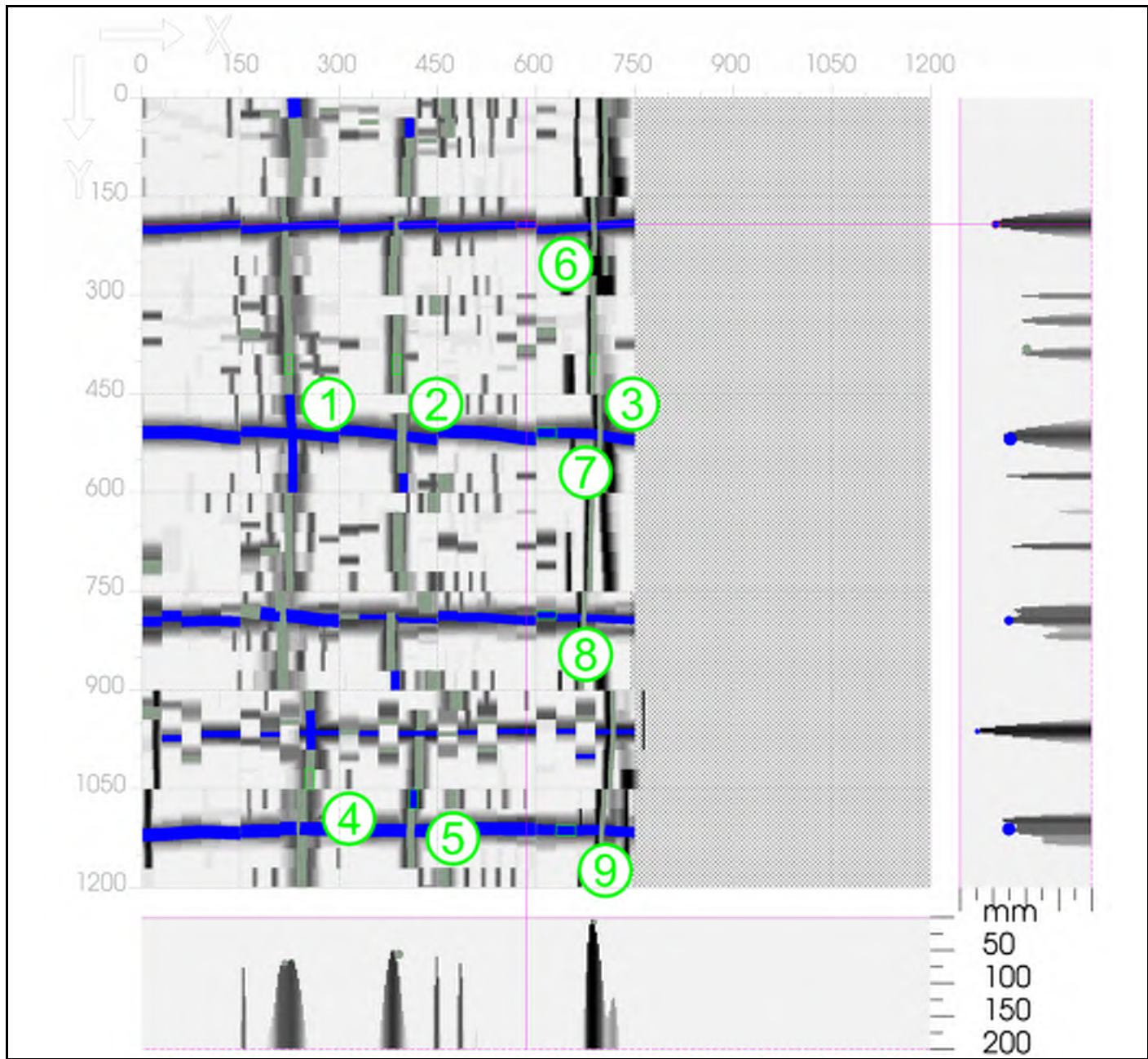
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	345 mm	71 mm	170 mm	20 mm	Horizontal	High
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Hilti PROFIS Detection Report

Scan File: d.fscan
Serial number: 227190008
Date / Time: 2019-10-02 23:29:39
Comment: -



x 585 mm y 192 mm z 0 mm Thickness: 200 mm
Overlay: - mm

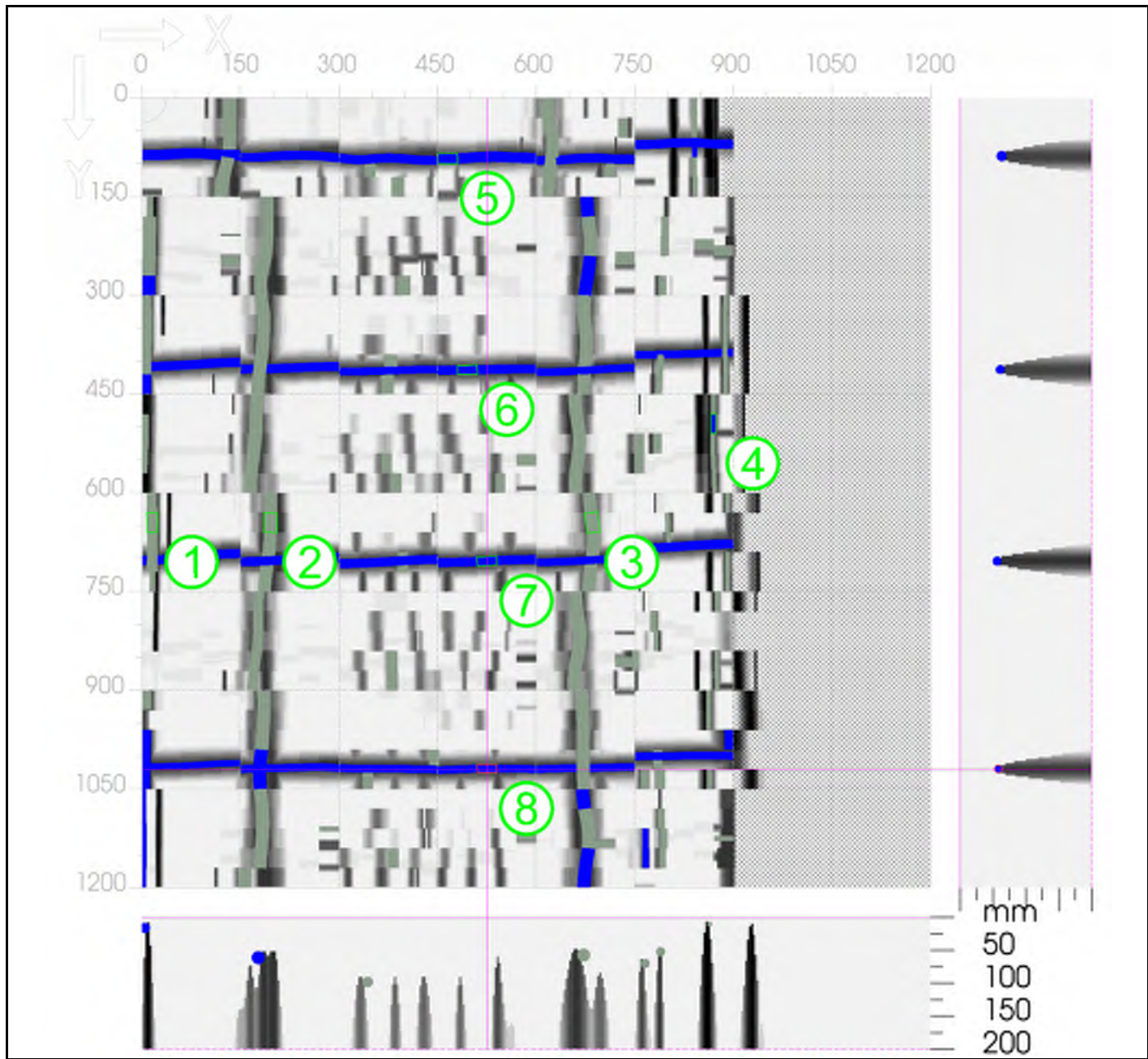
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 3	Object:	B3-10
User:	B.D		
Comment:	-		
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	223 mm	405 mm	64 mm	12 mm	Vertical	Low
2.	388 mm	405 mm	36 mm	14 mm	Vertical	Low
3.	686 mm	405 mm	0 mm	8 mm	Vertical	Low
4.	255 mm	1035 mm	68 mm	14 mm	Vertical	Low
5.	413 mm	1065 mm	50 mm	12 mm	Vertical	High
6.	585 mm	192 mm	48 mm	12 mm	Horizontal	High
7.	615 mm	509 mm	63 mm	16 mm	Horizontal	High
8.	615 mm	785 mm	59 mm	12 mm	Horizontal	High
9.	645 mm	1113 mm	66 mm	16 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: ee.fscan
Serial number: 227190008
Date / Time: 2019-10-02 23:35:30
Comment: -



x 525 mm y 1019 mm z 0 mm Thickness: 200 mm
Overlay: - mm

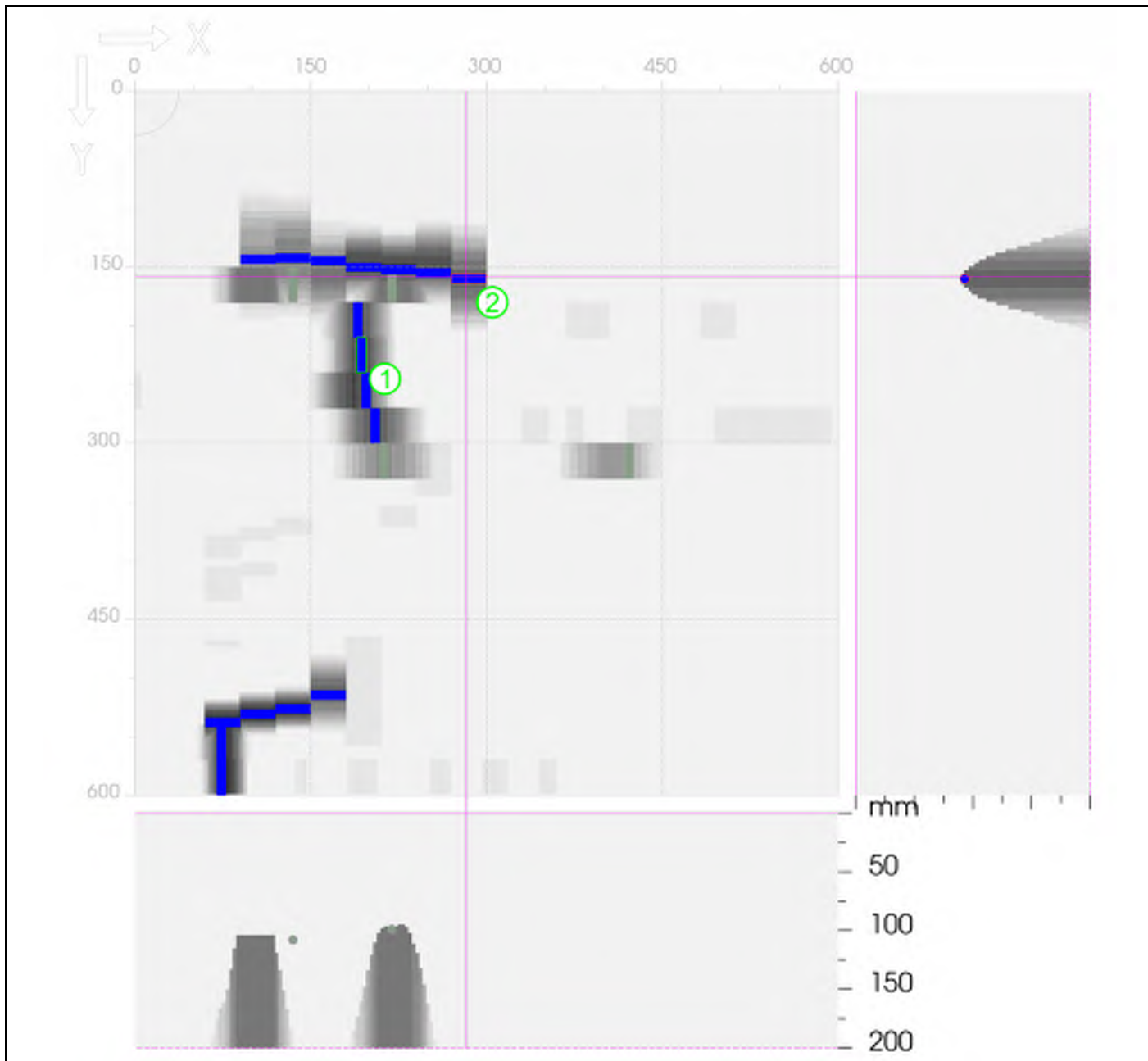
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 3	Object:	B3-11
User:	B.D		
Comment:	-		
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	15 mm	645 mm	2 mm	16 mm	Vertical	Low
2.	195 mm	645 mm	53 mm	20 mm	Vertical	Low
3.	685 mm	645 mm	52 mm	20 mm	Vertical	Low
4.	869 mm	495 mm	1 mm	8 mm	Vertical	High
5.	465 mm	92 mm	56 mm	16 mm	Horizontal	High
6.	495 mm	413 mm	54 mm	14 mm	Horizontal	High
7.	525 mm	704 mm	49 mm	14 mm	Horizontal	High
8.	525 mm	1019 mm	52 mm	12 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 11.fscan
Serial number: 227190008
Date / Time: 2019-09-24 23:57:15
Comment: -



x 283 mm y 158 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 3	Object:	B3-12
User:	B.D		
Comment:	-		

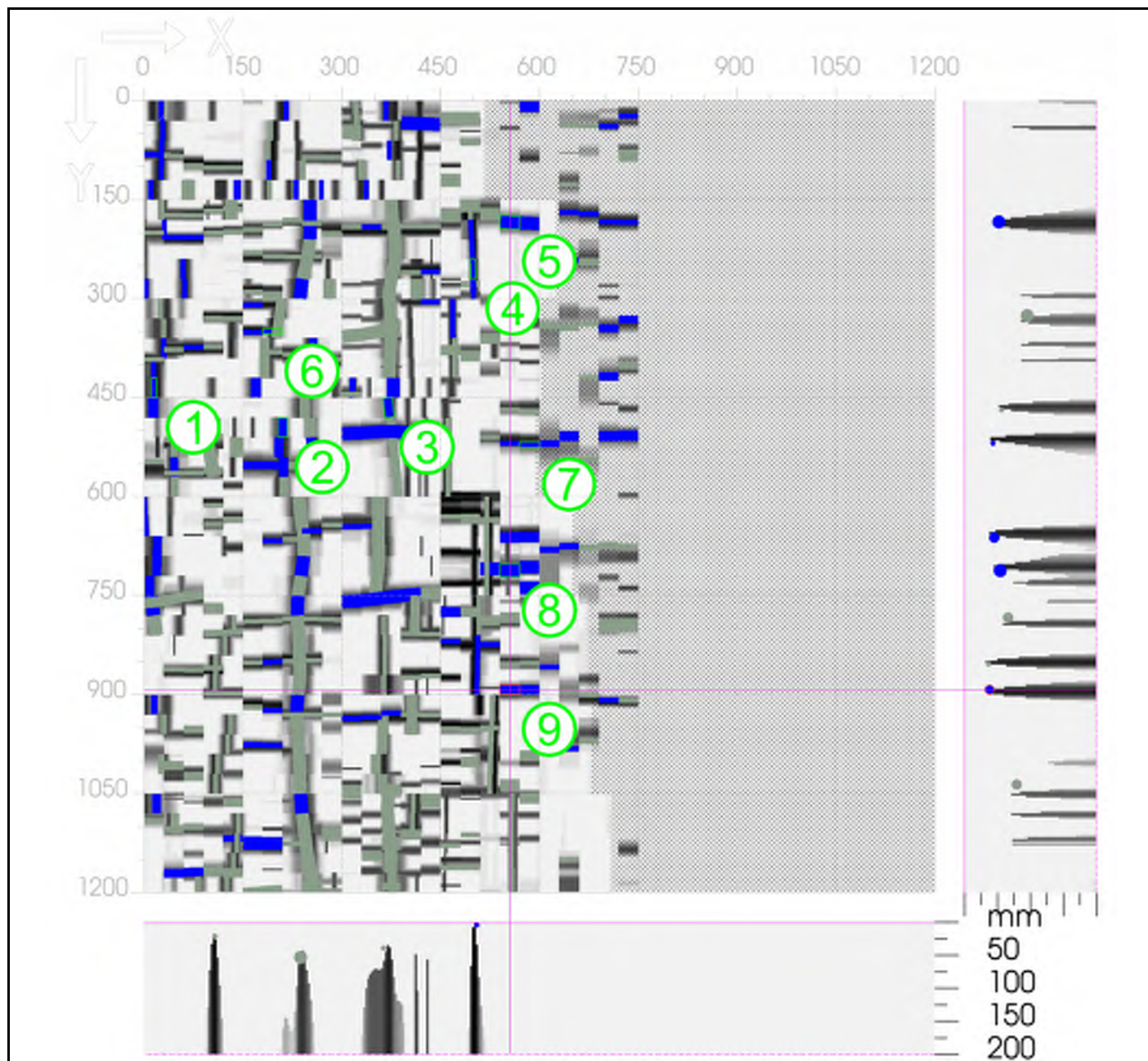
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	193 mm	225 mm	65 mm	8 mm	Vertical	High
2.	285 mm	160 mm	89 mm	8 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 85.fscan
Serial number: 227190008
Date / Time: 2019-10-01 19:58:46
Comment: -



x 555 mm
Overlay: - mm

y 892 mm

z 0 mm

Thickness: 200 mm

Project name: CIS Tower
Location: Basement Level 3
User: B.D
Comment: -

Customer: Curtins
Object: B3-13 Soffit

Ø Horizontal: 14 mm +/- 6 mm
Ø Vertical: 14 mm +/- 6 mm
Detection mode: Auto

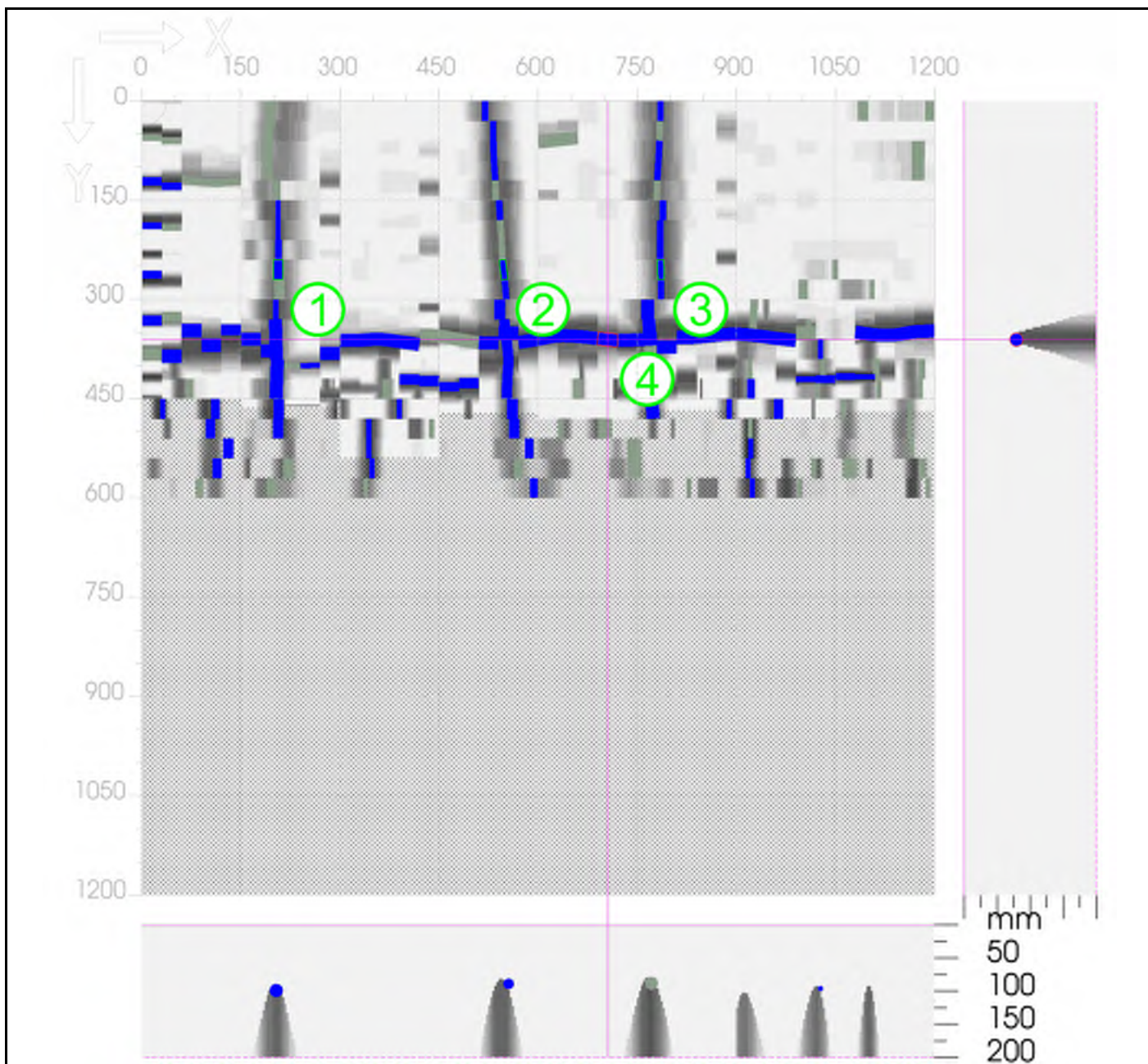
Type: Input
Type: Input

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	15 mm	435 mm	20 mm	8 mm	Vertical	High
2.	210 mm	495 mm	49 mm	14 mm	Vertical	High
3.	370 mm	465 mm	41 mm	14 mm	Vertical	High
4.	499 mm	255 mm	2 mm	8 mm	Vertical	High
5.	555 mm	184 mm	42 mm	20 mm	Horizontal	High
6.	195 mm	350 mm	30 mm	8 mm	Horizontal	High
7.	585 mm	521 mm	34 mm	8 mm	Horizontal	High
8.	555 mm	712 mm	44 mm	20 mm	Horizontal	High
9.	555 mm	892 mm	31 mm	14 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 86.fscan
Serial number: 227190008
Date / Time: 2019-10-01 20:02:15
Comment: -



x 705 mm y 361 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 3	Object:	B3-13
User:	B.D		
Comment:	-		

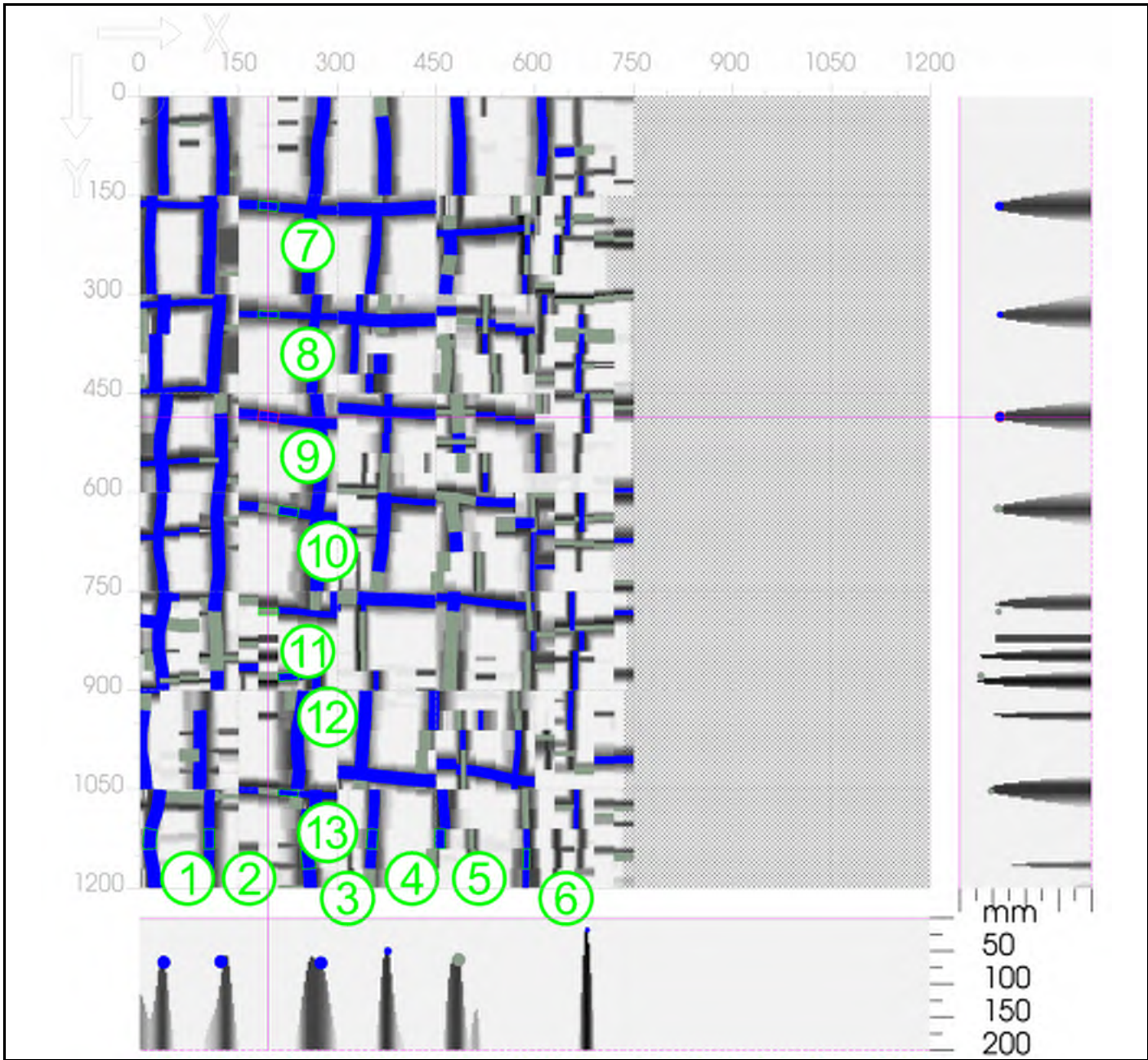
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	206 mm	255 mm	93 mm	14 mm	Vertical	High
2.	547 mm	255 mm	76 mm	10 mm	Vertical	High
3.	786 mm	255 mm	80 mm	10 mm	Vertical	High
4.	705 mm	361 mm	69 mm	20 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 90.fscan
Serial number: 227190008
Date / Time: 2019-10-01 21:16:42
Comment: -



x 195 mm y 485 mm z 0 mm Thickness: 200 mm
Overlay: - mm

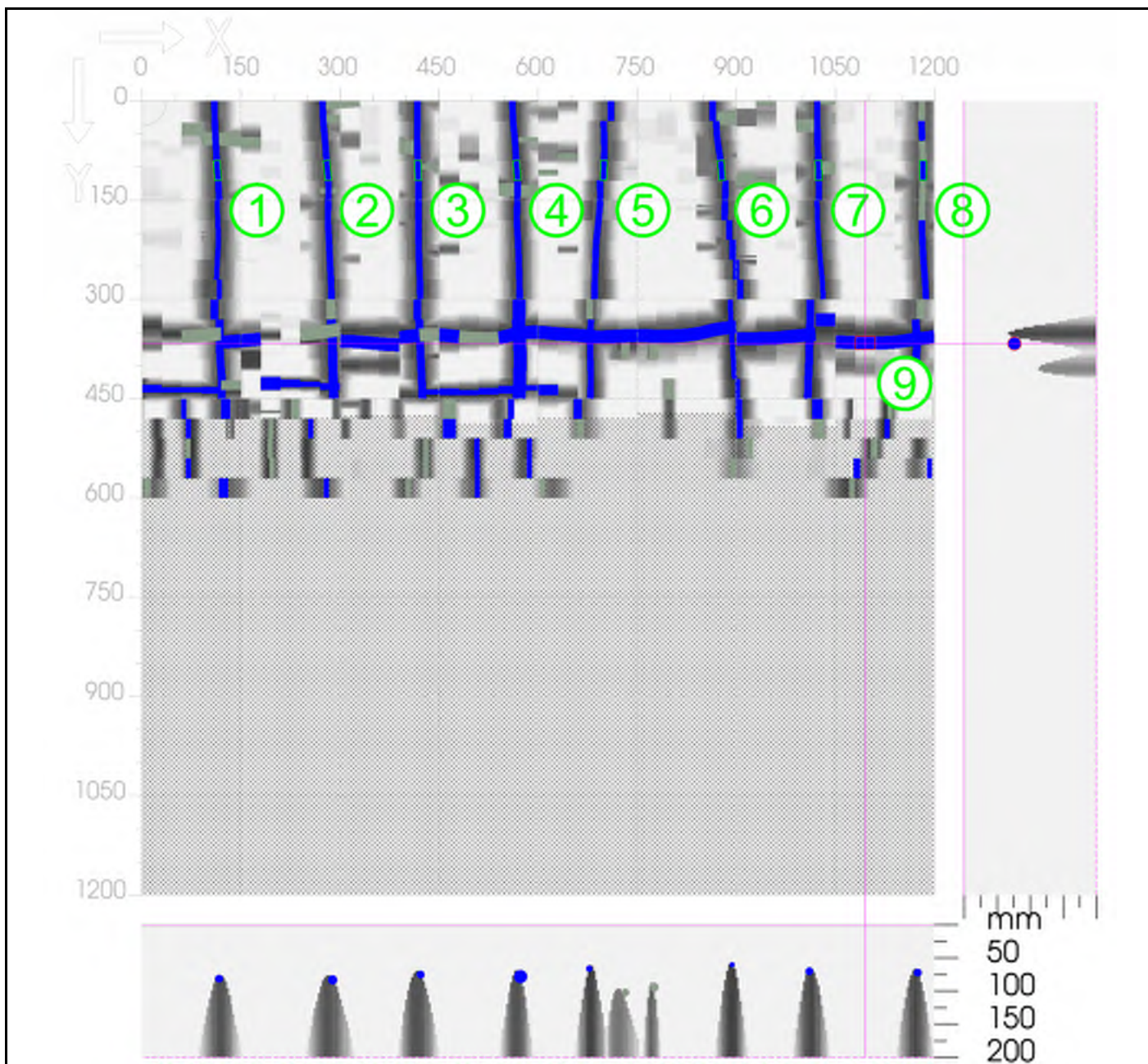
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 3	Object:	B3-14 Soffit
User:	B.D		
Comment:	-		
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	13 mm	1125 mm	62 mm	20 mm	Vertical	High
2.	106 mm	1125 mm	56 mm	16 mm	Vertical	High
3.	255 mm	1155 mm	58 mm	20 mm	Vertical	High
4.	353 mm	1125 mm	56 mm	16 mm	Vertical	High
5.	455 mm	1125 mm	55 mm	16 mm	Vertical	High
6.	587 mm	1155 mm	43 mm	10 mm	Vertical	High
7.	195 mm	166 mm	53 mm	14 mm	Horizontal	High
8.	195 mm	330 mm	56 mm	10 mm	Horizontal	High
9.	195 mm	485 mm	53 mm	16 mm	Horizontal	High
10.	225 mm	629 mm	49 mm	14 mm	Horizontal	High
11.	195 mm	781 mm	54 mm	10 mm	Horizontal	Low
12.	225 mm	880 mm	68 mm	12 mm	Horizontal	High
13.	225 mm	1055 mm	42 mm	10 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 89.fscan
Serial number: 227190008
Date / Time: 2019-10-01 21:11:38
Comment: -



x 1095 mm y 367 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 3	Object:	B3-14
User:	B.D		
Comment:	-		

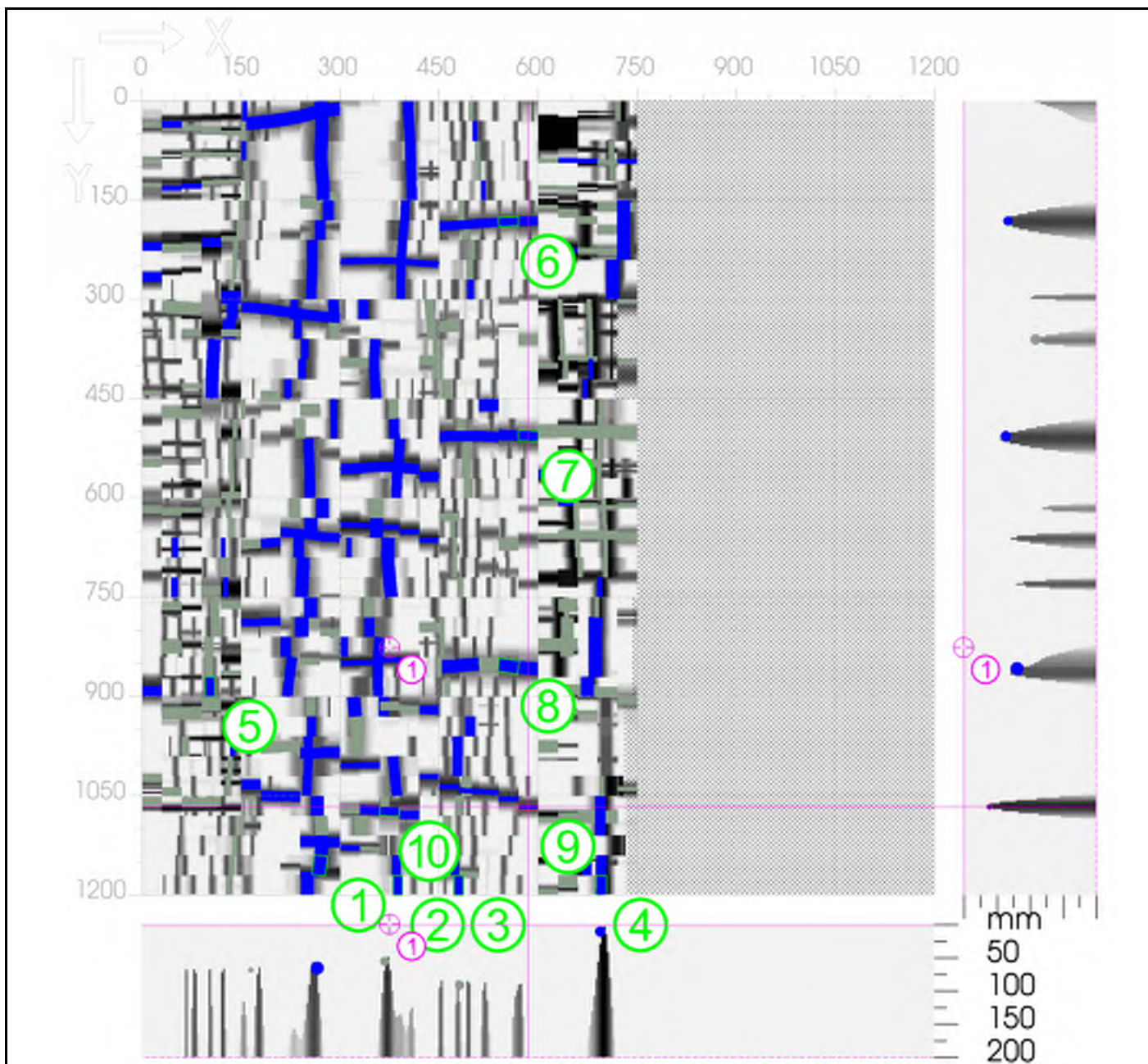
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	114 mm	105 mm	69 mm	10 mm	Vertical	High
2.	281 mm	105 mm	76 mm	10 mm	Vertical	High
3.	418 mm	105 mm	73 mm	10 mm	Vertical	High
4.	568 mm	105 mm	64 mm	10 mm	Vertical	High
5.	699 mm	105 mm	78 mm	10 mm	Vertical	High
6.	879 mm	105 mm	72 mm	10 mm	Vertical	High
7.	1024 mm	105 mm	70 mm	10 mm	Vertical	High
8.	1182 mm	105 mm	79 mm	10 mm	Vertical	High
9.	1095 mm	367 mm	66 mm	20 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 96.fscan
Serial number: 227190008
Date / Time: 2019-10-01 23:22:33
Comment: -



x 585 mm y 1067 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 3	Object:	B3-15 Soffit
User:	B.D		
Comment:	-		

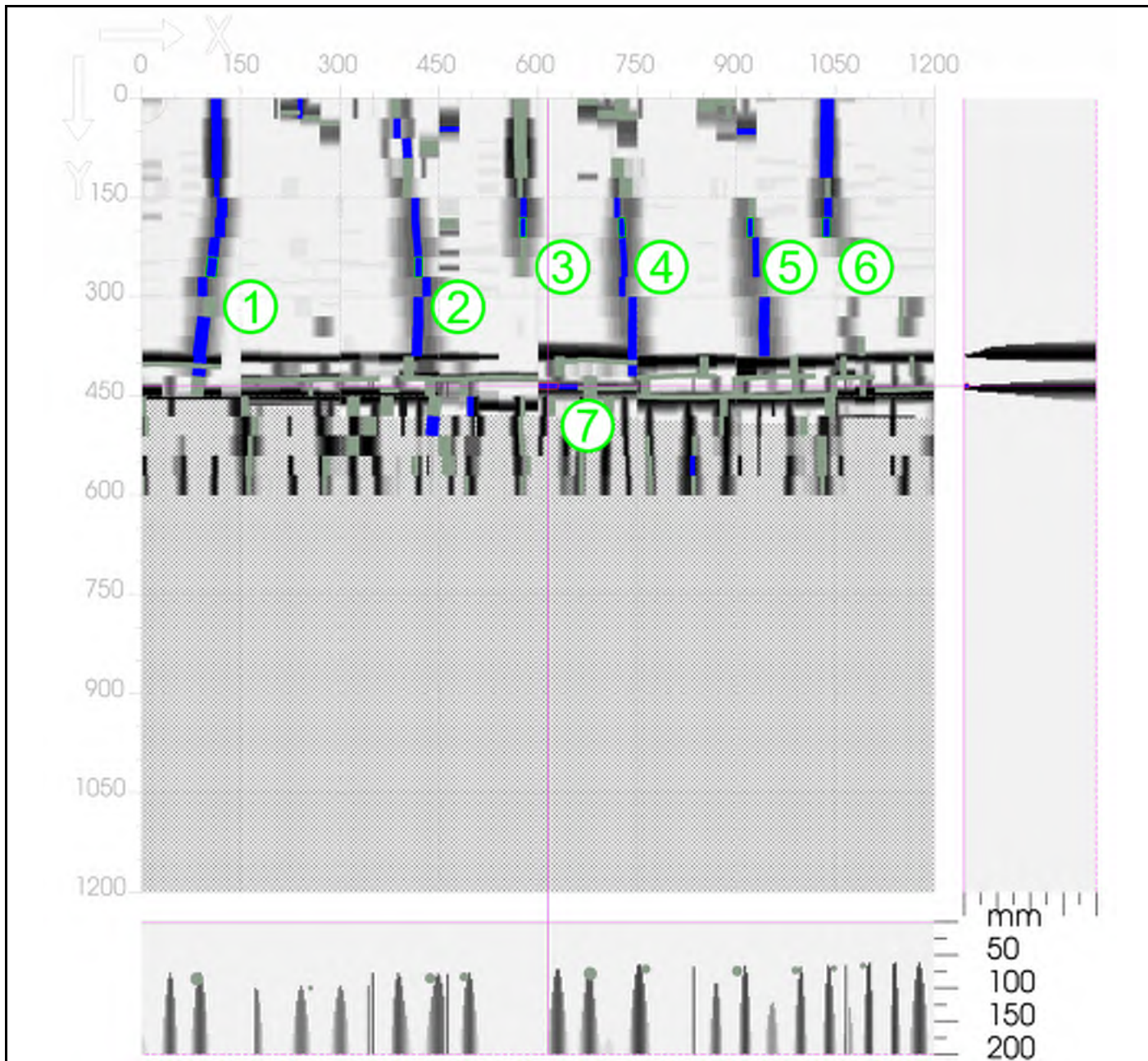
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Annotations:	x:	y:	z:	Comment:
1.	375 mm	826 mm	-1 mm	-

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	268 mm	1155 mm	70 mm	20 mm	Vertical	High
2.	388 mm	1185 mm	77 mm	14 mm	Vertical	High
3.	479 mm	1185 mm	75 mm	14 mm	Vertical	High
4.	695 mm	1185 mm	0 mm	16 mm	Vertical	High
5.	103 mm	885 mm	62 mm	14 mm	Vertical	High
6.	555 mm	182 mm	60 mm	14 mm	Horizontal	High
7.	585 mm	507 mm	55 mm	16 mm	Horizontal	High
8.	555 mm	854 mm	73 mm	20 mm	Horizontal	High
9.	585 mm	1067 mm	34 mm	8 mm	Horizontal	High
10.	375 mm	1074 mm	40 mm	14 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 98.fscan
Serial number: 227190008
Date / Time: 2019-10-01 23:29:12
Comment: -



x 615 mm y 435 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 3	Object:	B3-15
User:	B.D		
Comment:	-		

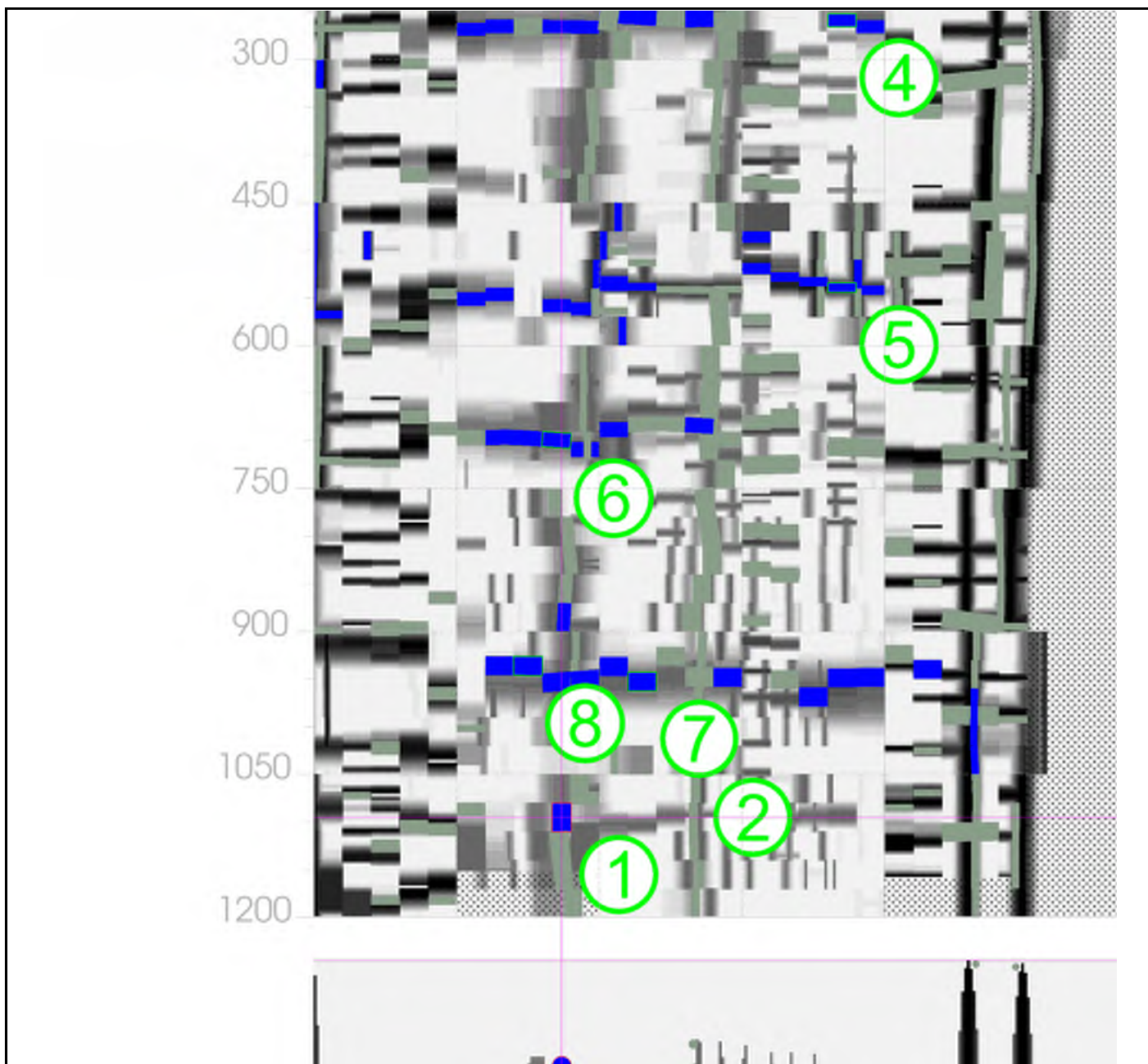
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	104 mm	255 mm	87 mm	16 mm	Vertical	High
2.	419 mm	255 mm	88 mm	12 mm	Vertical	High
3.	577 mm	195 mm	77 mm	10 mm	Vertical	High
4.	726 mm	195 mm	79 mm	10 mm	Vertical	High
5.	921 mm	195 mm	88 mm	10 mm	Vertical	High
6.	1036 mm	195 mm	79 mm	12 mm	Vertical	High
7.	615 mm	435 mm	0 mm	8 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 100.fscan
Serial number: 227190008
Date / Time: 2019-10-02 00:22:31
Comment: -



x 260 mm y 1095 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 3	Object:	B3-16 Soffit
User:	B.D		
Comment:	-		

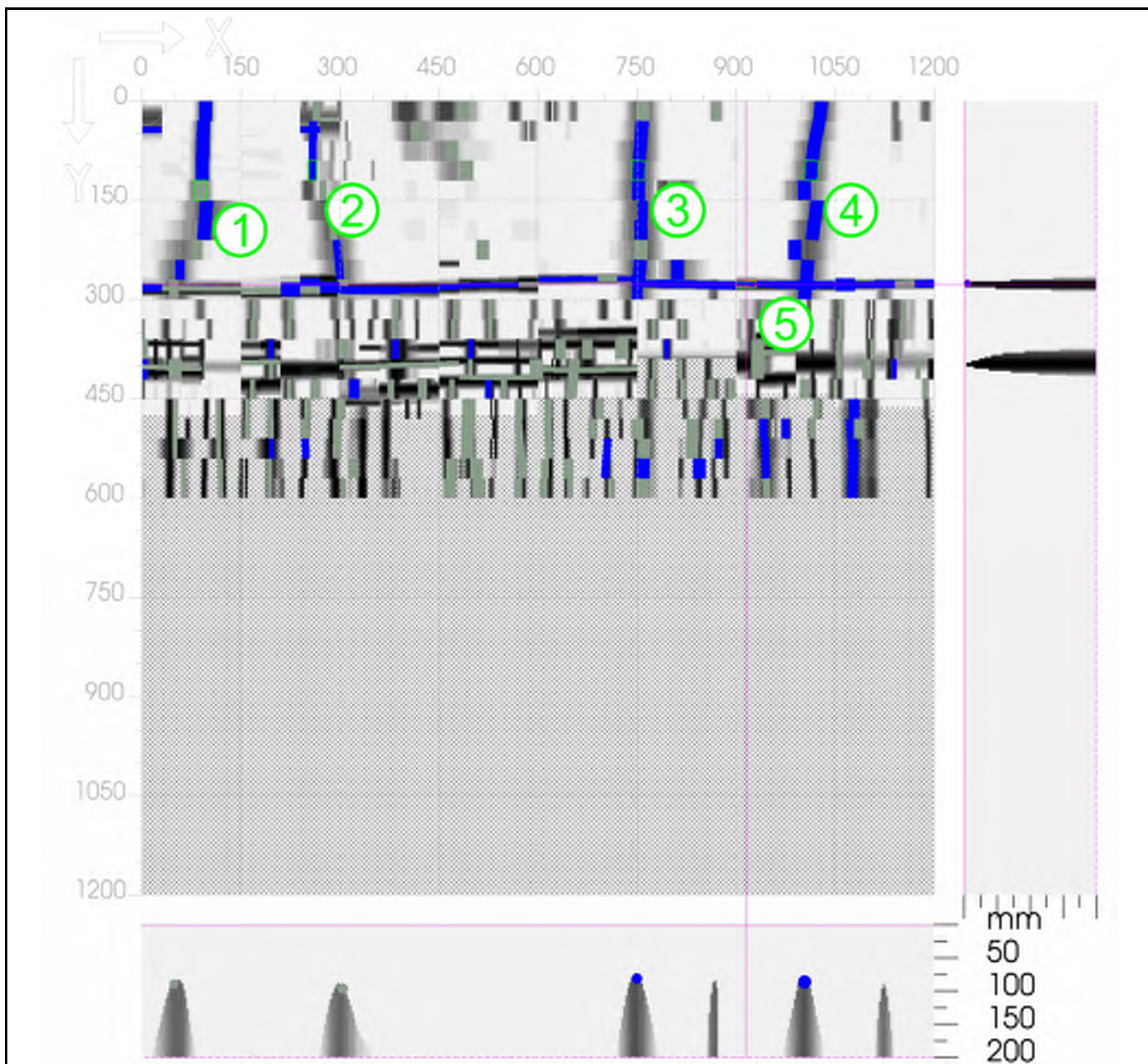
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	260 mm	1095 mm	101 mm	20 mm	Vertical	High
2.	401 mm	1035 mm	75 mm	20 mm	Vertical	High
3.	645 mm	74 mm	23 mm	16 mm	Horizontal	High
4.	555 mm	259 mm	110 mm	14 mm	Horizontal	High
5.	555 mm	539 mm	22 mm	10 mm	Horizontal	High
6.	255 mm	700 mm	89 mm	16 mm	Horizontal	High
7.	345 mm	953 mm	79 mm	20 mm	Horizontal	High
8.	225 mm	936 mm	93 mm	20 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 101.fscan
Serial number: 227190008
Date / Time: 2019-10-02 00:35:05
Comment: -



x 915 mm y 277 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 3	Object:	B3-16
User:	B.D		
Comment:	-		

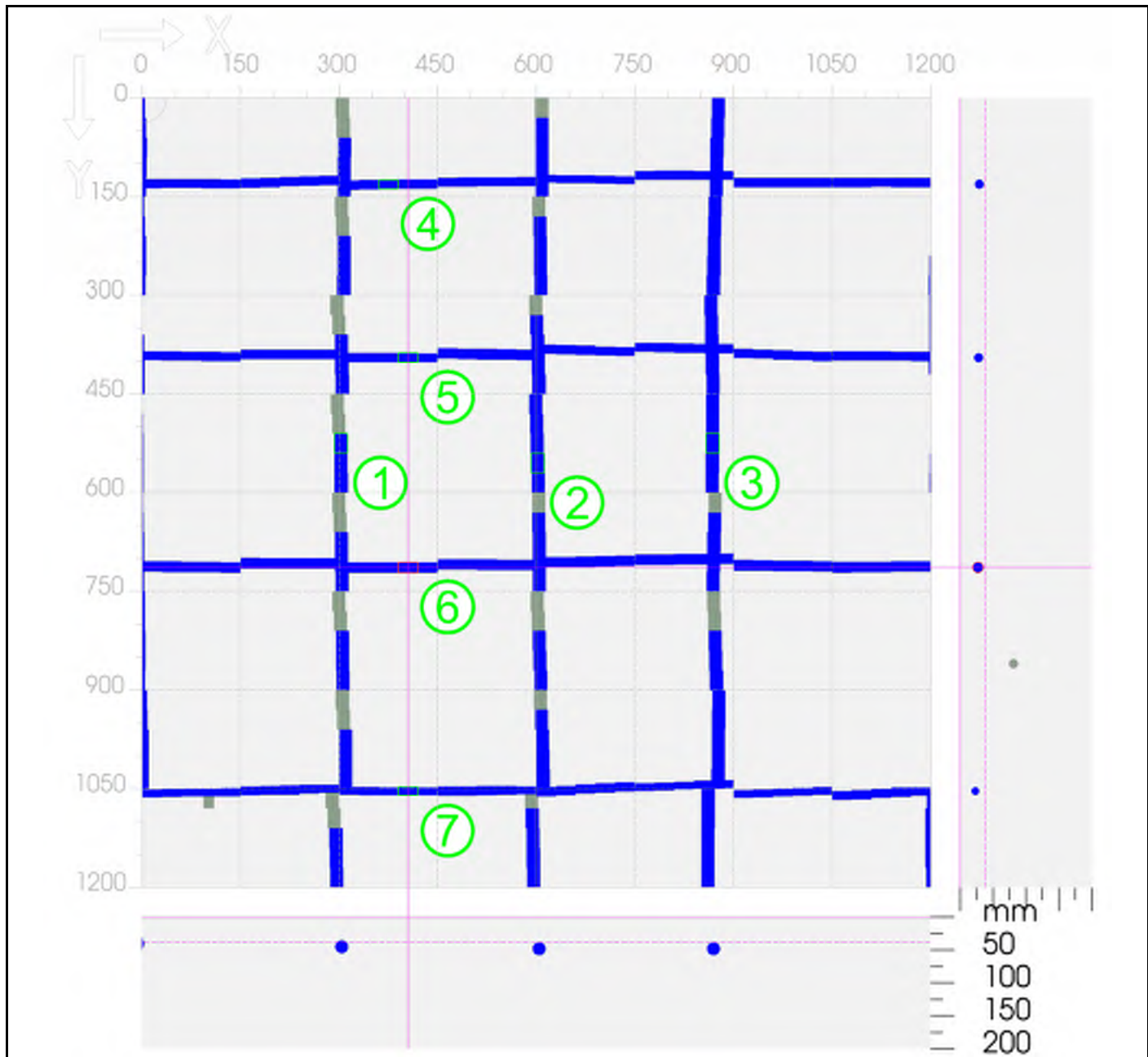
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	89 mm	135 mm	56 mm	20 mm	Vertical	Low
2.	258 mm	105 mm	104 mm	12 mm	Vertical	High
3.	752 mm	105 mm	73 mm	20 mm	Vertical	High
4.	1013 mm	105 mm	73 mm	20 mm	Vertical	High
5.	915 mm	277 mm	1 mm	10 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: b2a.fscan
Serial number: 227190008
Date / Time: 2019-10-02 18:56:16
Comment: -



x 405 mm y 714 mm z 0 mm Thickness: 38 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 2	Object:	2BA
User:	B.D		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	303 mm	525 mm	34 mm	20 mm	Vertical	High
2.	602 mm	555 mm	38 mm	20 mm	Vertical	High
3.	868 mm	525 mm	37 mm	20 mm	Vertical	High
4.	375 mm	131 mm	22 mm	14 mm	Horizontal	High
5.	405 mm	395 mm	21 mm	14 mm	Horizontal	High
6.	405 mm	714 mm	19 mm	16 mm	Horizontal	High
7.	405 mm	1053 mm	17 mm	12 mm	Horizontal	High

```
Scan File:          b2b.fscan
Serial number:      227190008
Date / Time:        2019-10-02 19:01:11
Comment:            -
```



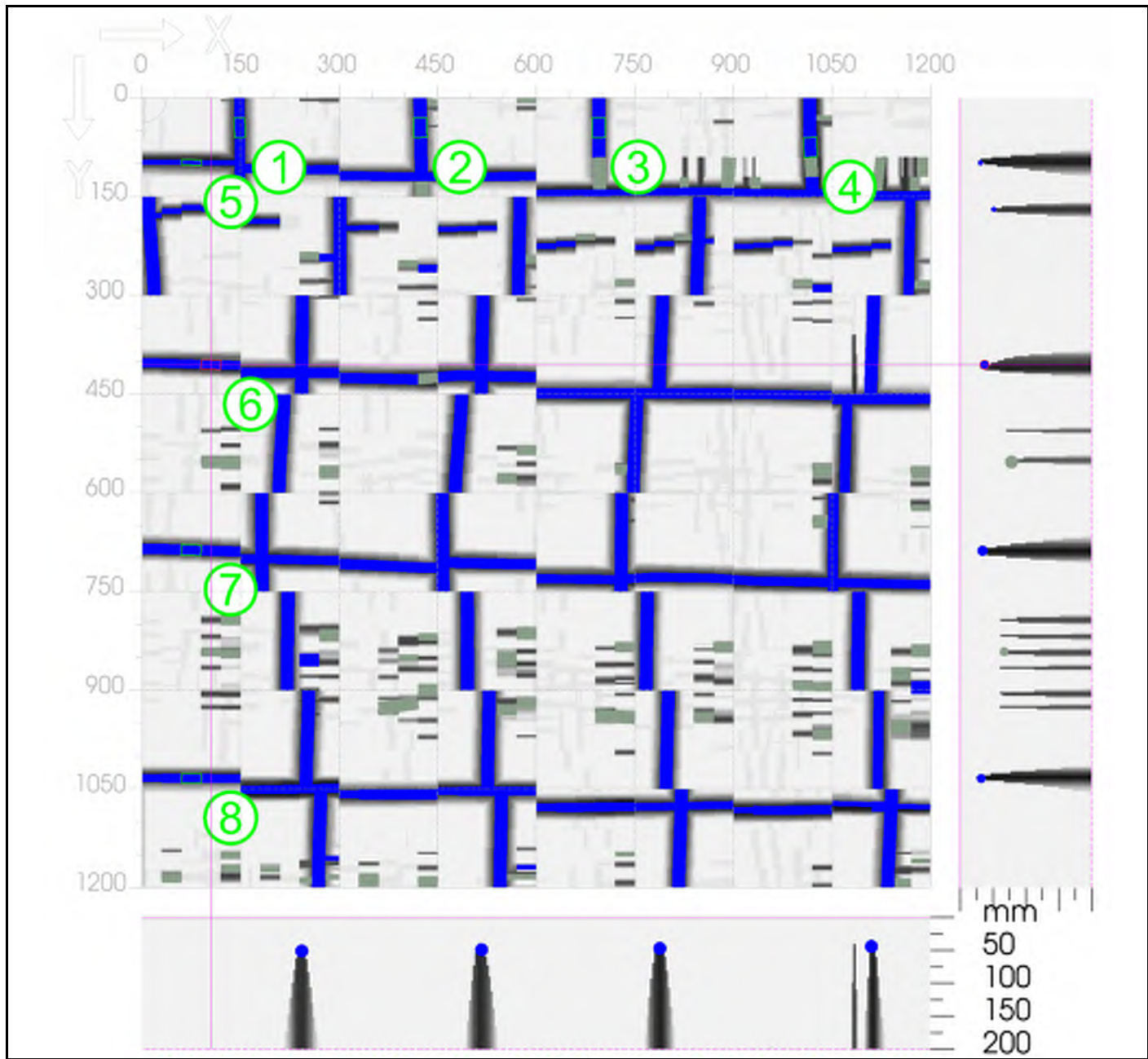
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 2	Object:	-2BB
User:	B.D		
Comment:	-		
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements: **x:** **y:** **Cover:** **Ø:** **Orientation:** **Quality:**

1.	135 mm	1005 mm	20 mm	16 mm	Vertical	High
2.	429 mm	975 mm	22 mm	14 mm	Vertical	High
3.	791 mm	975 mm	33 mm	20 mm	Vertical	High
4.	1042 mm	975 mm	34 mm	14 mm	Vertical	High
5.	975 mm	223 mm	34 mm	16 mm	Horizontal	High
6.	1005 mm	577 mm	30 mm	8 mm	Horizontal	High
7.	975 mm	890 mm	19 mm	14 mm	Horizontal	High
8.	975 mm	1183 mm	32 mm	12 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: b2c.fscan
Serial number: 227190008
Date / Time: 2019-10-02 19:07:01
Comment: -



x 105 mm y 405 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 2	Object:	2BC
User:	B.D		
Comment:	-		

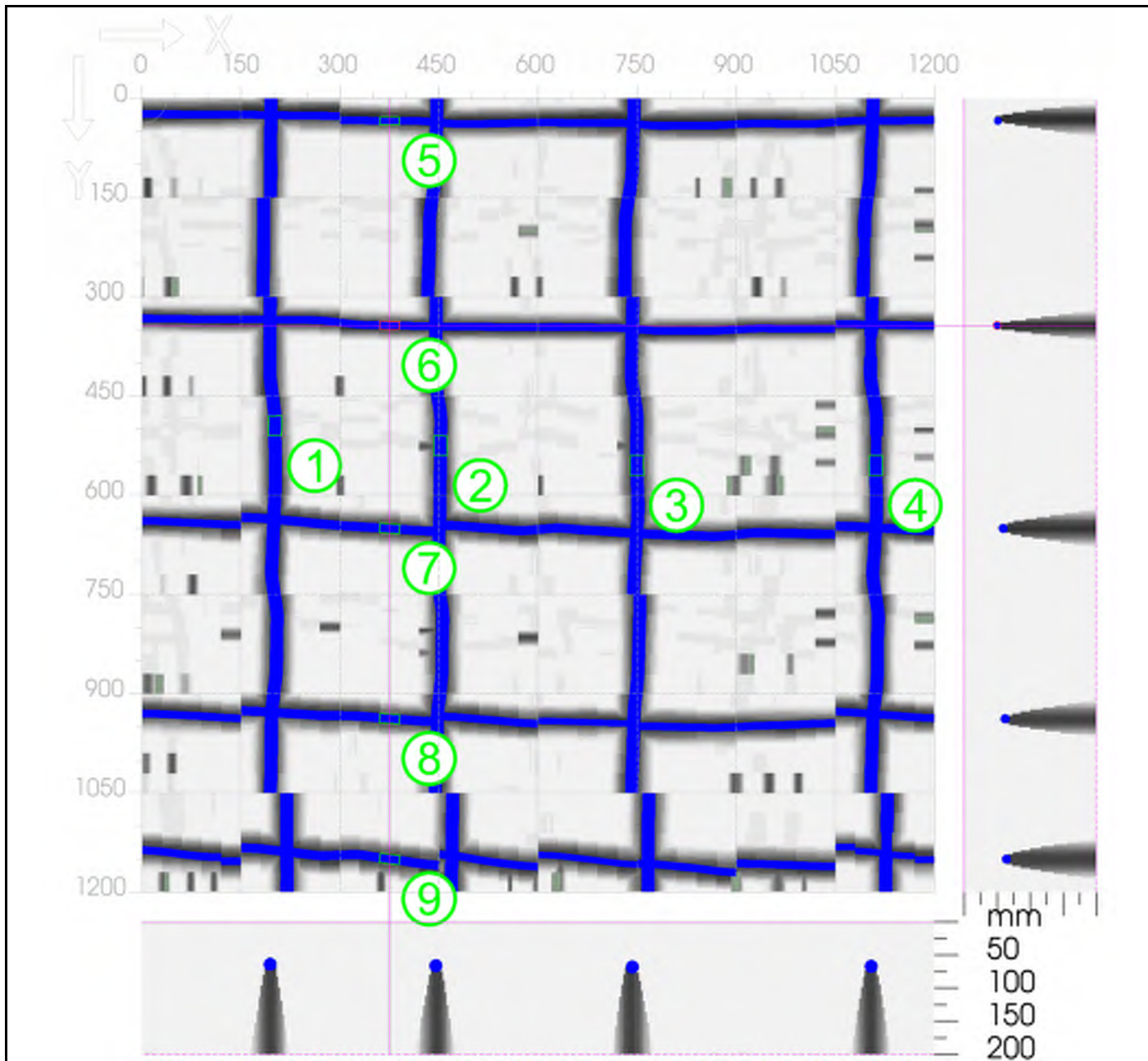
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	149 mm	45 mm	41 mm	16 mm	Vertical	High
2.	424 mm	45 mm	40 mm	20 mm	Vertical	High
3.	695 mm	45 mm	36 mm	20 mm	Vertical	High
4.	1017 mm	75 mm	33 mm	20 mm	Vertical	High
5.	75 mm	98 mm	28 mm	8 mm	Horizontal	High
6.	105 mm	405 mm	30 mm	14 mm	Horizontal	High
7.	75 mm	687 mm	26 mm	16 mm	Horizontal	High
8.	75 mm	1034 mm	26 mm	14 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: b2d.fscan
Serial number: 227190008
Date / Time: 2019-10-02 19:12:28
Comment: -



x 375 mm y 343 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 2	Object:	2BD
User:	B.D		
Comment:	-		

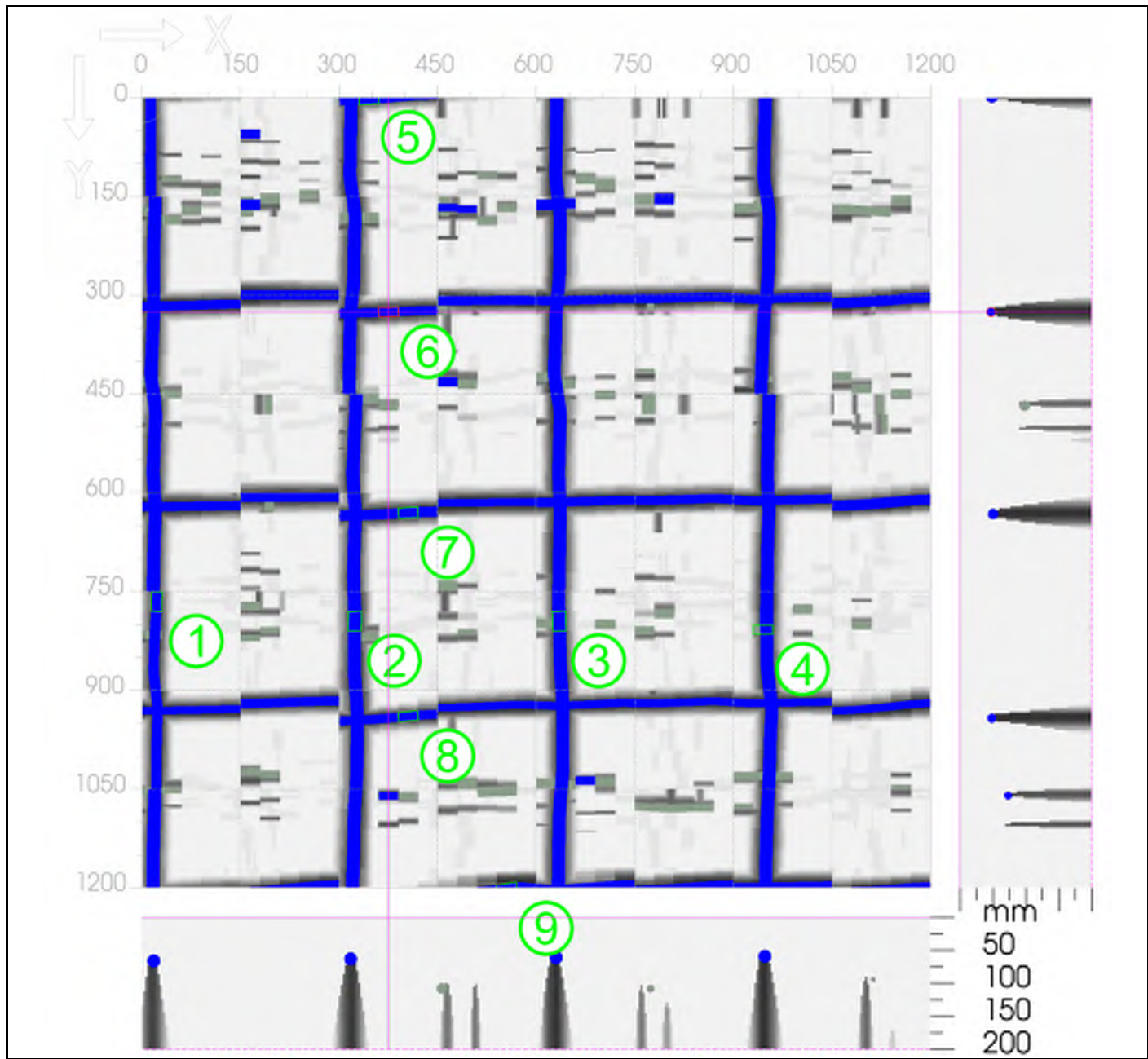
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	201 mm	495 mm	54 mm	20 mm	Vertical	High
2.	452 mm	525 mm	57 mm	20 mm	Vertical	High
3.	749 mm	555 mm	58 mm	20 mm	Vertical	High
4.	1111 mm	555 mm	57 mm	20 mm	Vertical	High
5.	375 mm	34 mm	45 mm	12 mm	Horizontal	High
6.	375 mm	343 mm	44 mm	12 mm	Horizontal	High
7.	375 mm	650 mm	52 mm	14 mm	Horizontal	High
8.	375 mm	938 mm	55 mm	14 mm	Horizontal	High
9.	375 mm	1150 mm	57 mm	14 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: b2e.fscan
Serial number: 227190008
Date / Time: 2019-10-02 19:17:46
Comment: -



x 375 mm y 325 mm z 0 mm Thickness: 200 mm
Overlay: - mm

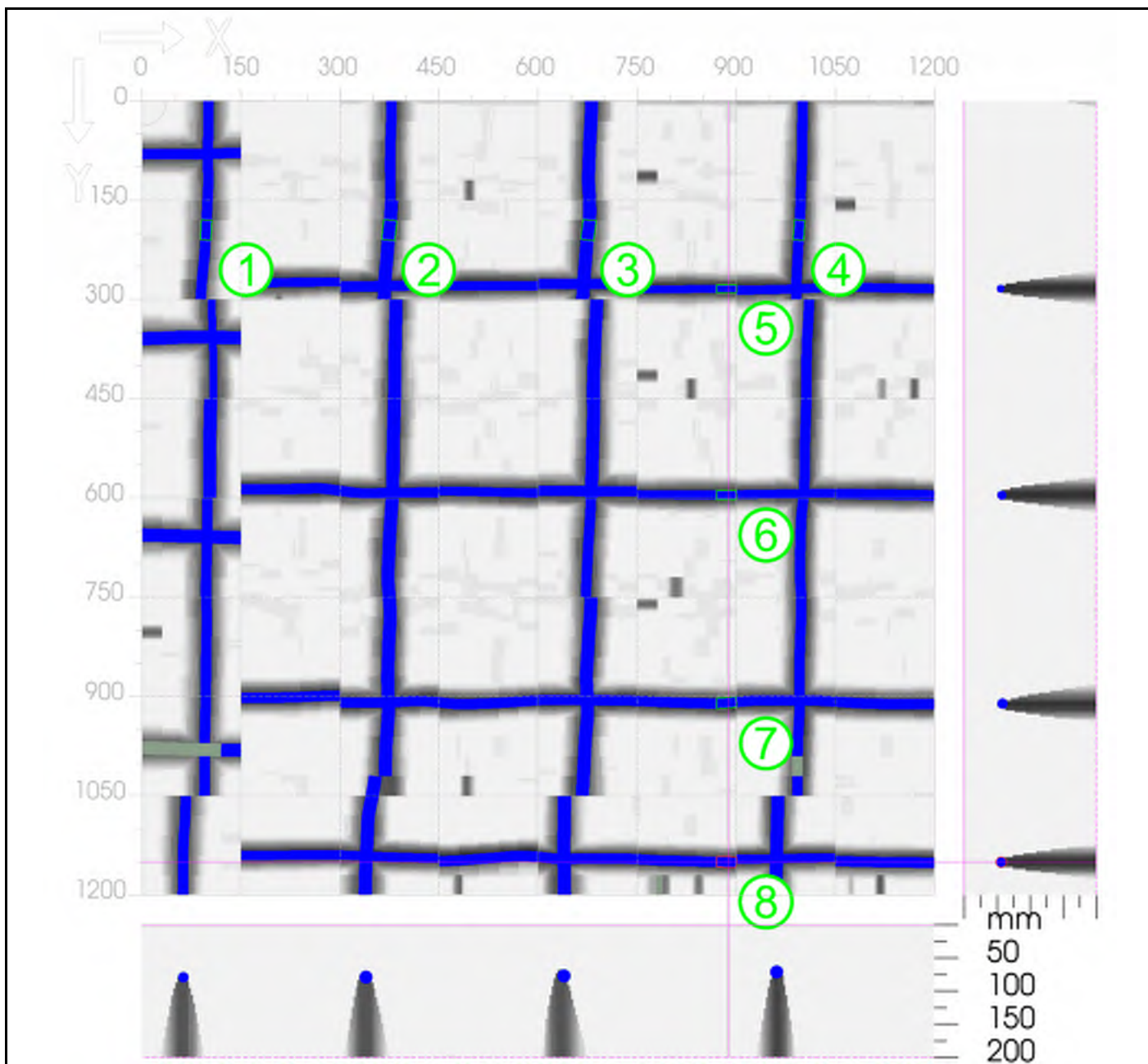
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 2	Object:	2BE
User:	B.D		
Comment:	-		
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	23 mm	765 mm	55 mm	16 mm	Vertical	High
2.	324 mm	795 mm	54 mm	20 mm	Vertical	High
3.	635 mm	795 mm	52 mm	20 mm	Vertical	High
4.	945 mm	808 mm	95 mm	14 mm	Horizontal	Low
5.	345 mm	0 mm	38 mm	20 mm	Horizontal	High
6.	375 mm	325 mm	40 mm	14 mm	Horizontal	High
7.	405 mm	630 mm	42 mm	16 mm	Horizontal	High
8.	405 mm	939 mm	42 mm	14 mm	Horizontal	High
9.	555 mm	1202 mm	43 mm	16 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: b2f.fscan
Serial number: 227190008
Date / Time: 2019-10-02 19:23:34
Comment: -



x 888 mm y 1150 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 2	Object:	2BF
User:	B.D		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	98 mm	195 mm	72 mm	16 mm	Vertical	High
2.	374 mm	195 mm	69 mm	20 mm	Vertical	High
3.	676 mm	195 mm	66 mm	20 mm	Vertical	High
4.	995 mm	195 mm	60 mm	16 mm	Vertical	High
5.	885 mm	283 mm	49 mm	12 mm	Horizontal	High
6.	885 mm	596 mm	50 mm	14 mm	Horizontal	High
7.	885 mm	911 mm	50 mm	16 mm	Horizontal	High
8.	885 mm	1150 mm	48 mm	16 mm	Horizontal	High

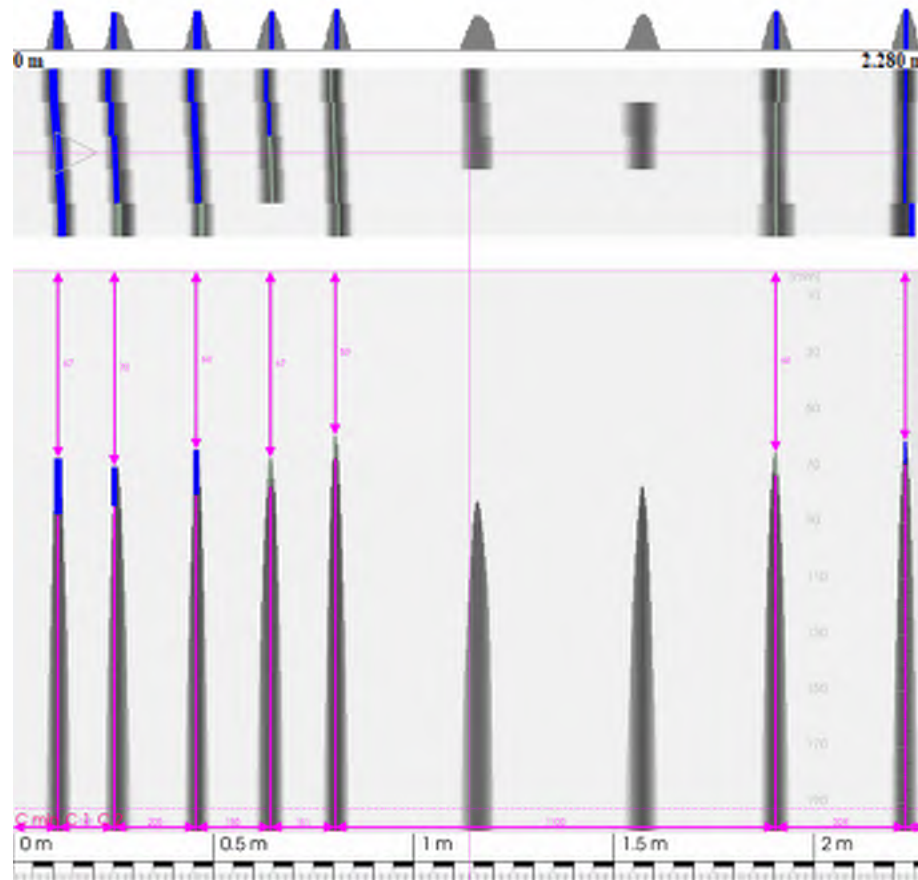
Hilti PROFIS Detection Report

Project information:

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 2	Object:	B2-5-
User:	B.D		
Comment:	-		

Scan information:

Scan File:	66b.fscan
Serial number:	227190008
Date / Time:	2019-09-27 23:16:21
Comment:	-



Segment:

Width:	2.280 m	Position:	-
Ø:	14 mm +/- 6 mm	Number of rebars:	7
Detection mode:	Auto		
Overlay:	-		

Crosshair / cross section:

x:	1.140 m	y:	75 mm
z:	0 mm	Thickness:	192 mm

Range:

	Cover / Cut-off:	Number of rebars:
Cmin:	200 mm	7
C1:	200 mm	7
C2:	200 mm	7
Cut-off:	< 0 mm, 200 mm >	7

Statistic: Cover

Minimum:	59 mm	Maximum:	70 mm
Mean:	64 mm	Standard deviation:	4 mm
Median:	65 mm		

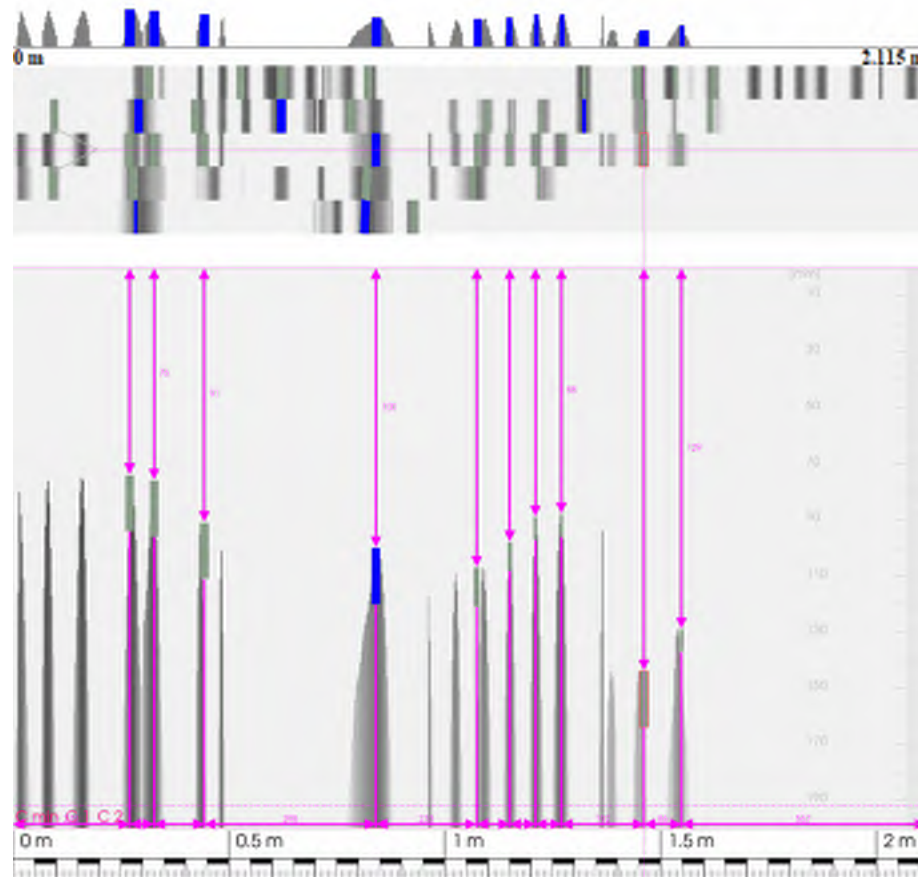
Hilti PROFIS Detection Report

Project information:

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 2	Object:	b2-5
User:	B.D		
Comment:	-		

Scan information:

Scan File:	66a.fscan
Serial number:	227190008
Date / Time:	2019-09-27 23:15:49
Comment:	-



Segment:

Width:	2.115 m	Position:	-
Ø:	14 mm +/- 6 mm	Number of rebars:	10
Detection mode:	Auto		
Overlay:	-		

Crosshair / cross section:

x:	1.462 m	y:	75 mm
z:	0 mm	Thickness:	192 mm

Range:

	Cover / Cut-off:	Number of rebars:
Cmin:	200 mm	10
C1:	200 mm	10
C2:	200 mm	10
Cut-off:	< 0 mm, 200 mm >	10

Statistic: Cover

Minimum:	74 mm	Maximum:	144 mm
Mean:	99 mm	Standard deviation:	22 mm
Median:	95 mm		

Scan File: 60.fscan
Serial number: 227190008
Date / Time: 2019-09-27 21:00:21
Comment: -



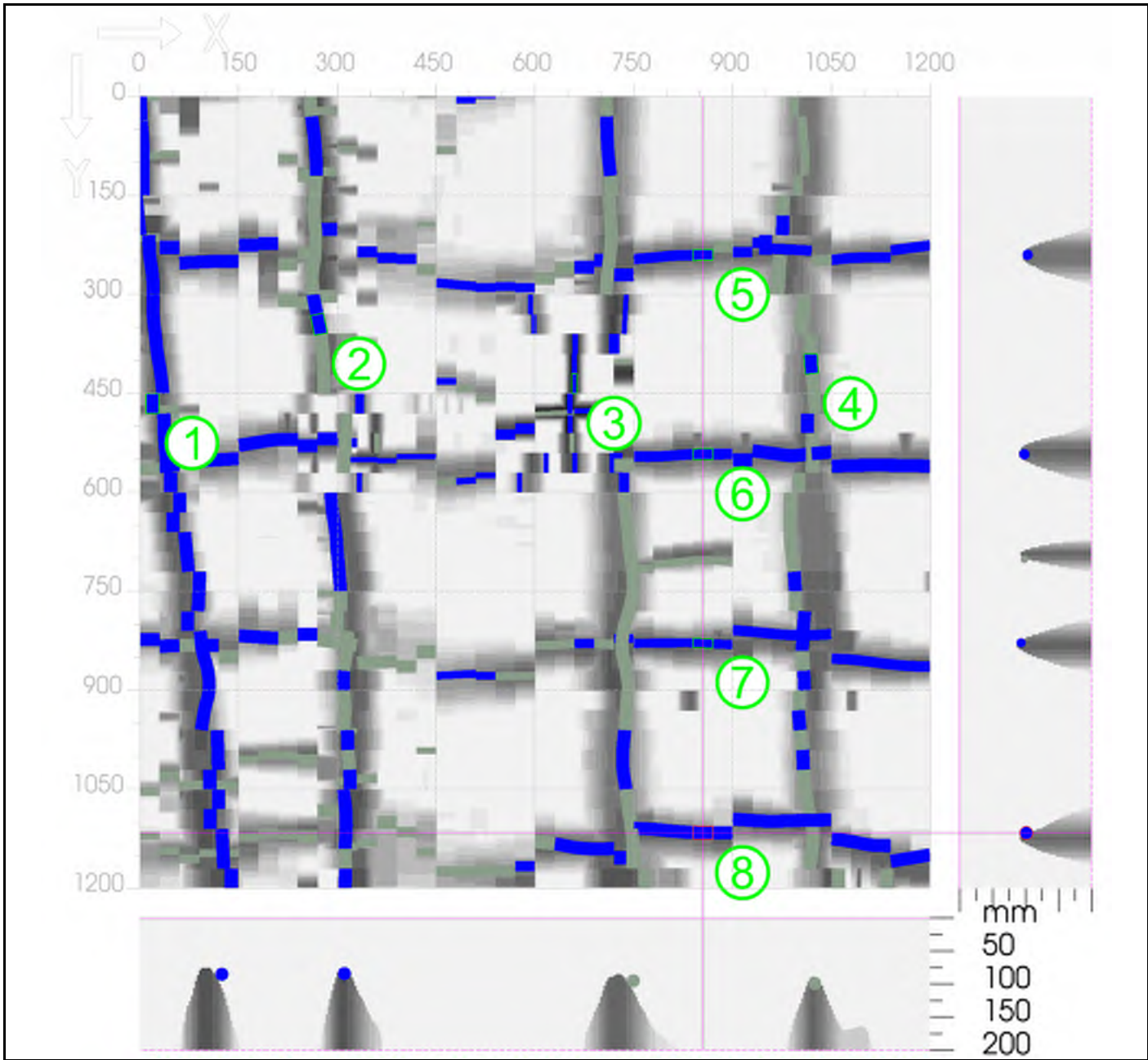
Ø Horizontal:	20 mm +/- 0 mm	Type:	Input
Ø Vertical:	25 mm +/- 0 mm	Type:	Input
Detection mode:	Rebar		

Page 1/2

1.	183 mm	465 mm	54 mm	25 mm	Vertical	High
2.	485 mm	465 mm	59 mm	25 mm	Vertical	High
3.	784 mm	435 mm	65 mm	25 mm	Vertical	High
4.	1083 mm	465 mm	61 mm	25 mm	Vertical	High
5.	675 mm	97 mm	39 mm	20 mm	Horizontal	High
6.	675 mm	412 mm	45 mm	20 mm	Horizontal	High
7.	675 mm	712 mm	49 mm	20 mm	Horizontal	High
8.	705 mm	1027 mm	55 mm	20 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 61.fscan
Serial number: 227190008
Date / Time: 2019-09-27 21:15:01
Comment: -



x 855 mm y 1116 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 2	Object:	B2-2
User:	B.D		
Comment:	-		

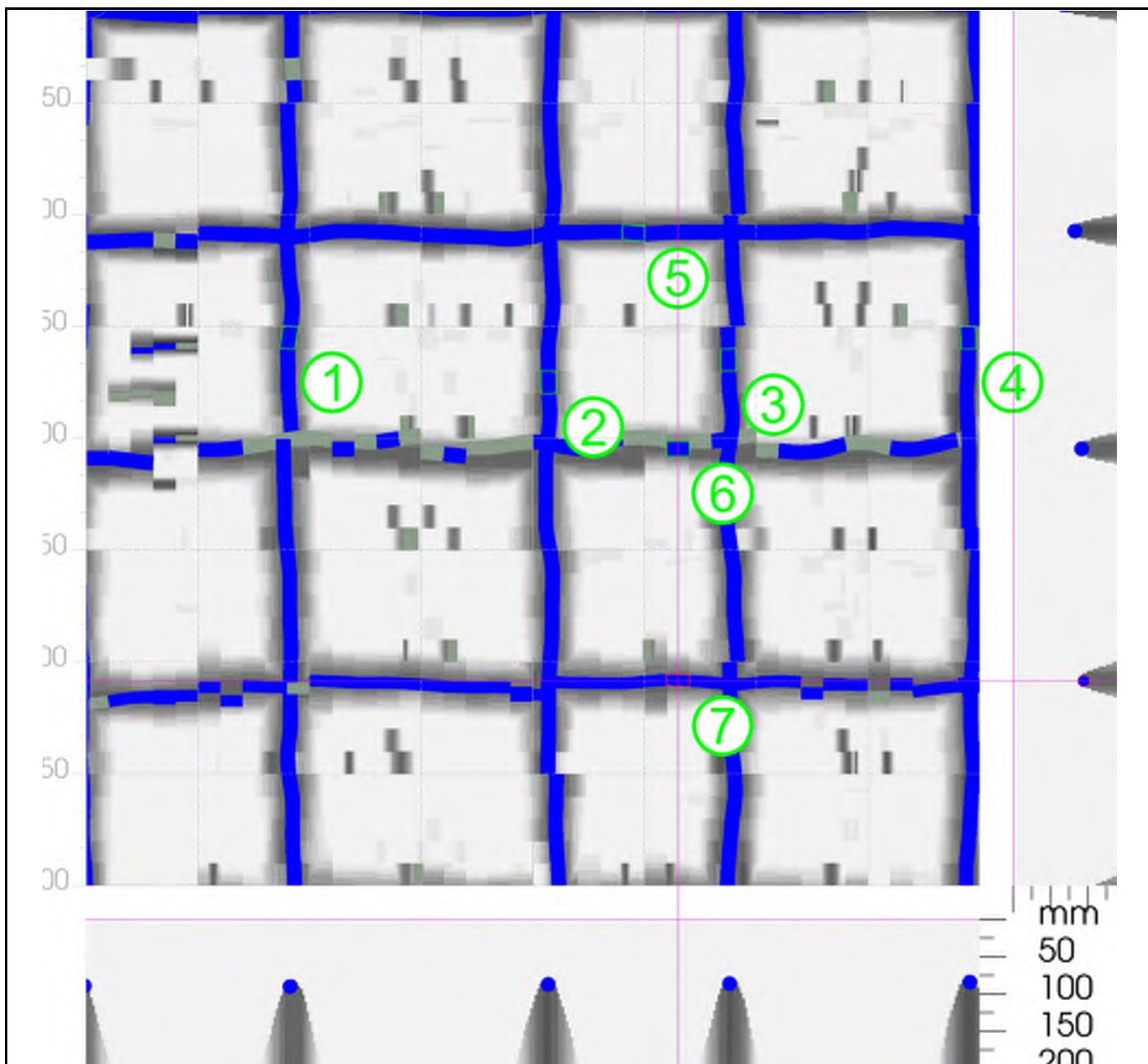
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	19 mm	465 mm	84 mm	20 mm	Vertical	High
2.	273 mm	345 mm	77 mm	20 mm	Vertical	High
3.	660 mm	435 mm	9 mm	8 mm	Vertical	High
4.	1018 mm	405 mm	104 mm	20 mm	Vertical	High
5.	855 mm	240 mm	95 mm	16 mm	Horizontal	High
6.	855 mm	542 mm	90 mm	16 mm	Horizontal	High
7.	855 mm	828 mm	86 mm	14 mm	Horizontal	High
8.	855 mm	1116 mm	91 mm	20 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 64.fscan
Serial number: 227190008
Date / Time: 2019-09-27 22:10:05
Comment: -



x 795 mm y 925 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 2	Object:	B2-3
User:	B.D		
Comment:	-		

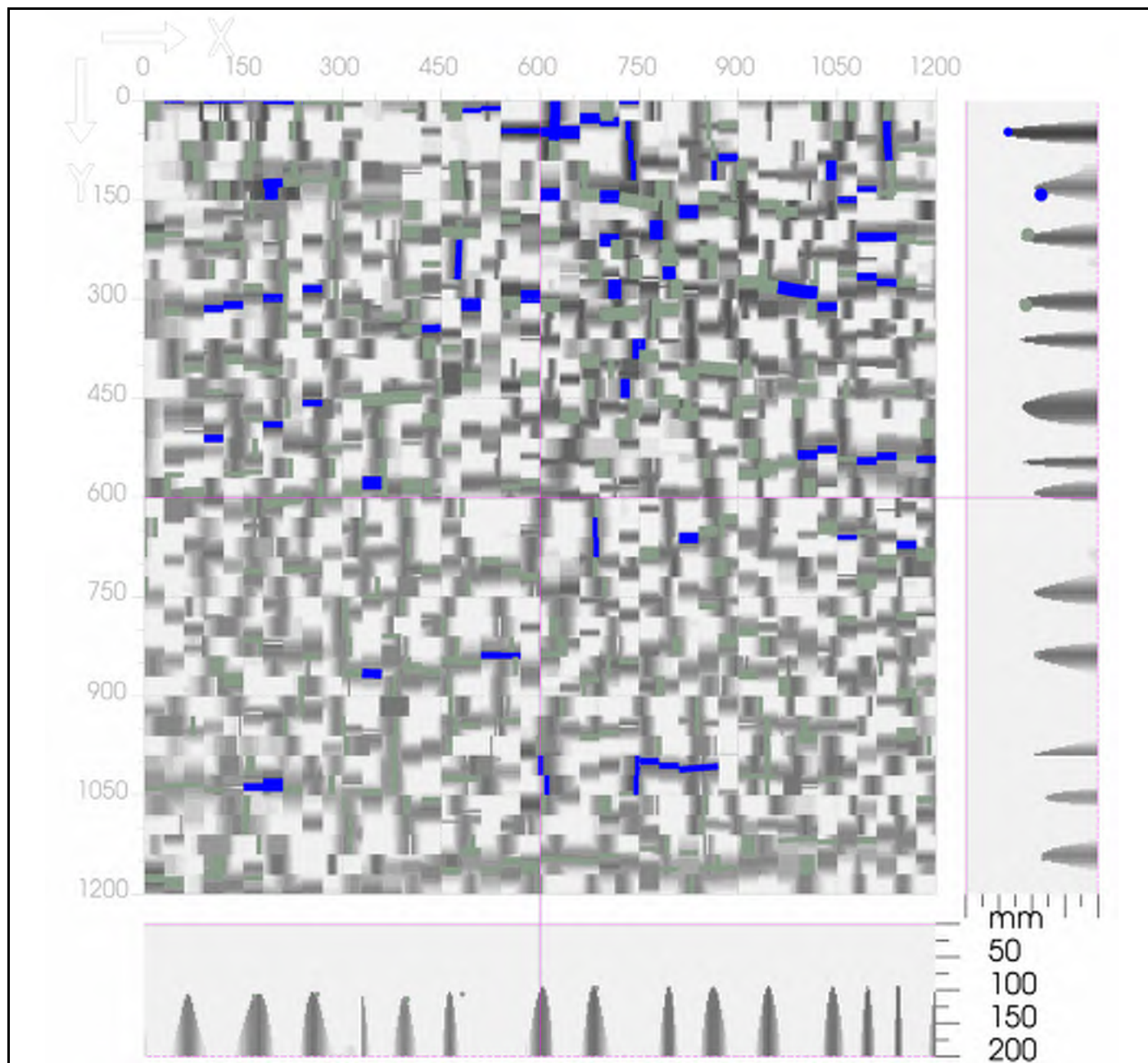
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	270 mm	465 mm	80 mm	20 mm	Vertical	High
2.	621 mm	525 mm	80 mm	20 mm	Vertical	High
3.	863 mm	495 mm	78 mm	20 mm	Vertical	High
4.	1184 mm	465 mm	75 mm	20 mm	Vertical	High
5.	735 mm	325 mm	72 mm	20 mm	Horizontal	High
6.	795 mm	614 mm	82 mm	20 mm	Horizontal	High
7.	795 mm	925 mm	87 mm	16 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 65.fscan
Serial number: 227190008
Date / Time: 2019-09-27 22:47:14
Comment: -

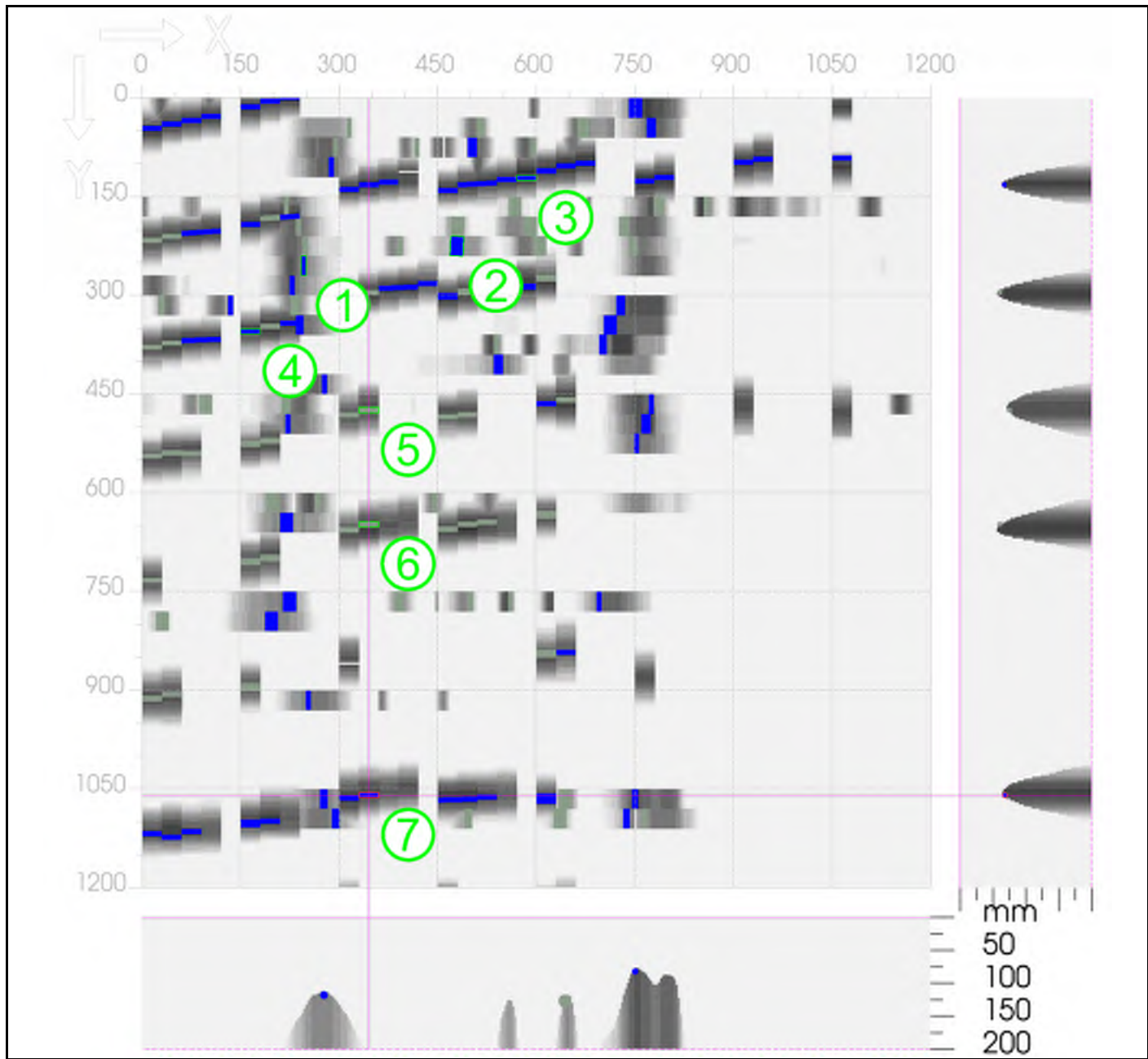


x 600 mm y 600 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 2	Object:	B2-4
User:	B.D		
Comment:	-		
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Hilti PROFIS Detection Report

Scan File: 66.fscan
Serial number: 227190008
Date / Time: 2019-09-27 23:19:10
Comment: -



x 345 mm y 1059 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 2	Object:	B2-5
User:	B.D		
Comment:	-		

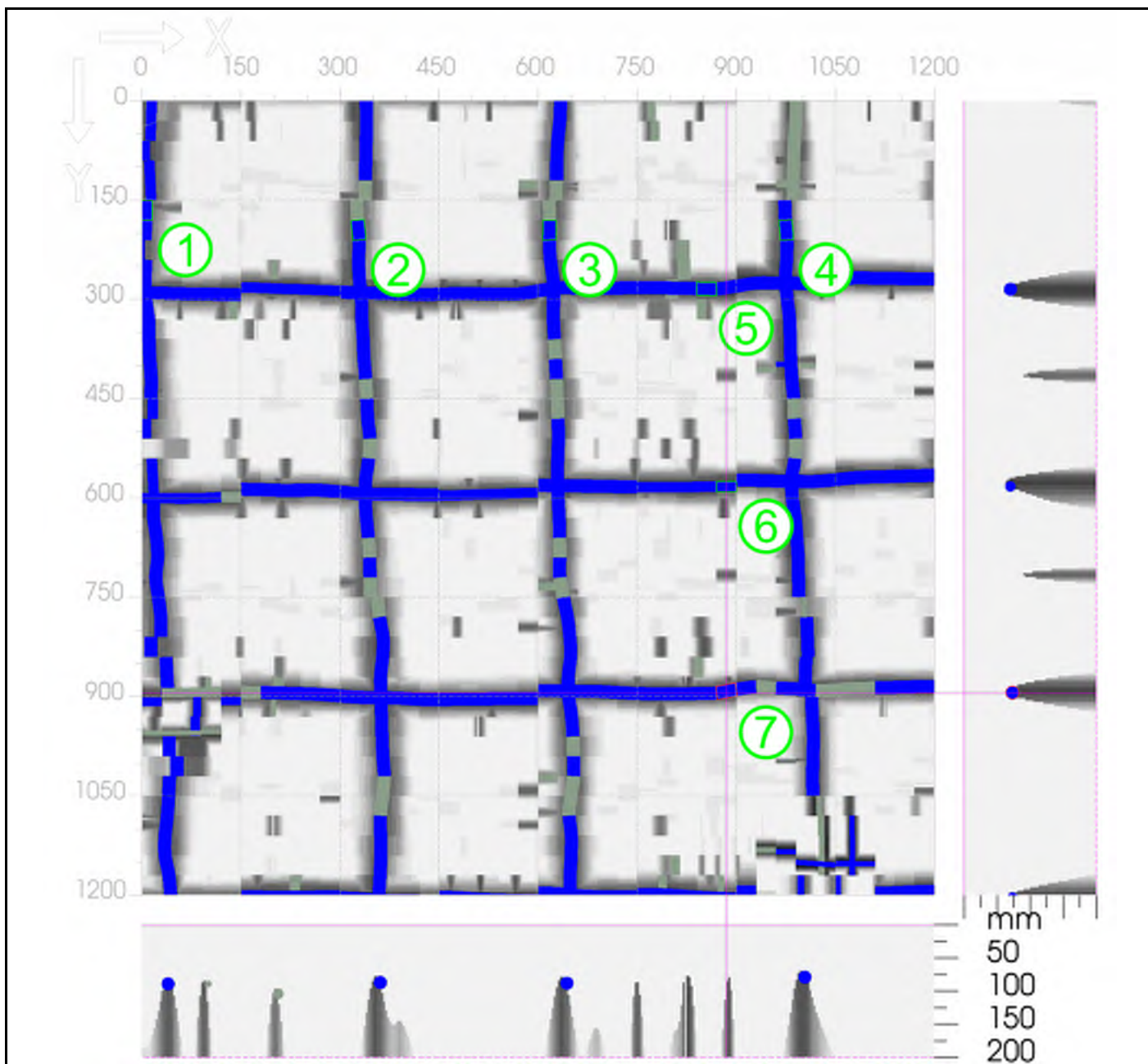
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	246 mm	255 mm	79 mm	8 mm	Vertical	High
2.	479 mm	225 mm	124 mm	20 mm	Vertical	High
3.	585 mm	122 mm	48 mm	8 mm	Horizontal	High
4.	165 mm	355 mm	63 mm	8 mm	Horizontal	High
5.	345 mm	474 mm	71 mm	8 mm	Horizontal	Low
6.	345 mm	647 mm	56 mm	8 mm	Horizontal	Low
7.	345 mm	1059 mm	64 mm	8 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 67.fscan
Serial number: 227190008
Date / Time: 2019-09-28 00:35:32
Comment: -



x 885 mm y 894 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 2	Object:	B2-6
User:	B.D		
Comment:	-		

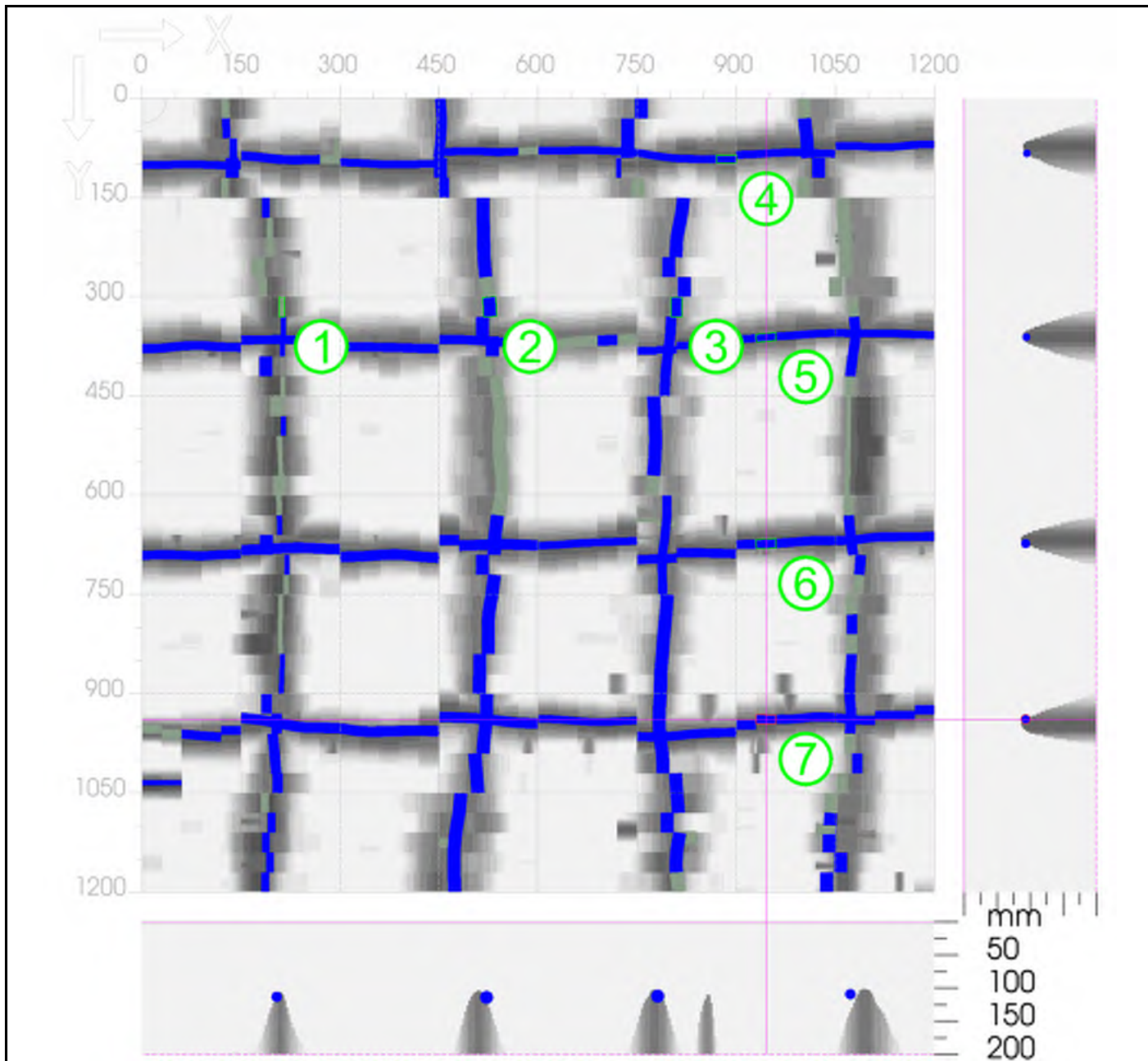
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	6 mm	165 mm	81 mm	20 mm	Vertical	High
2.	328 mm	195 mm	78 mm	20 mm	Vertical	High
3.	618 mm	195 mm	75 mm	20 mm	Vertical	High
4.	976 mm	195 mm	70 mm	20 mm	Vertical	High
5.	855 mm	284 mm	61 mm	20 mm	Horizontal	High
6.	885 mm	582 mm	62 mm	16 mm	Horizontal	High
7.	885 mm	894 mm	63 mm	20 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 68.fscan
Serial number: 227190008
Date / Time: 2019-09-28 00:42:01
Comment: -



x 945 mm y 938 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 2	Object:	B2-7
User:	B.D		
Comment:	-		

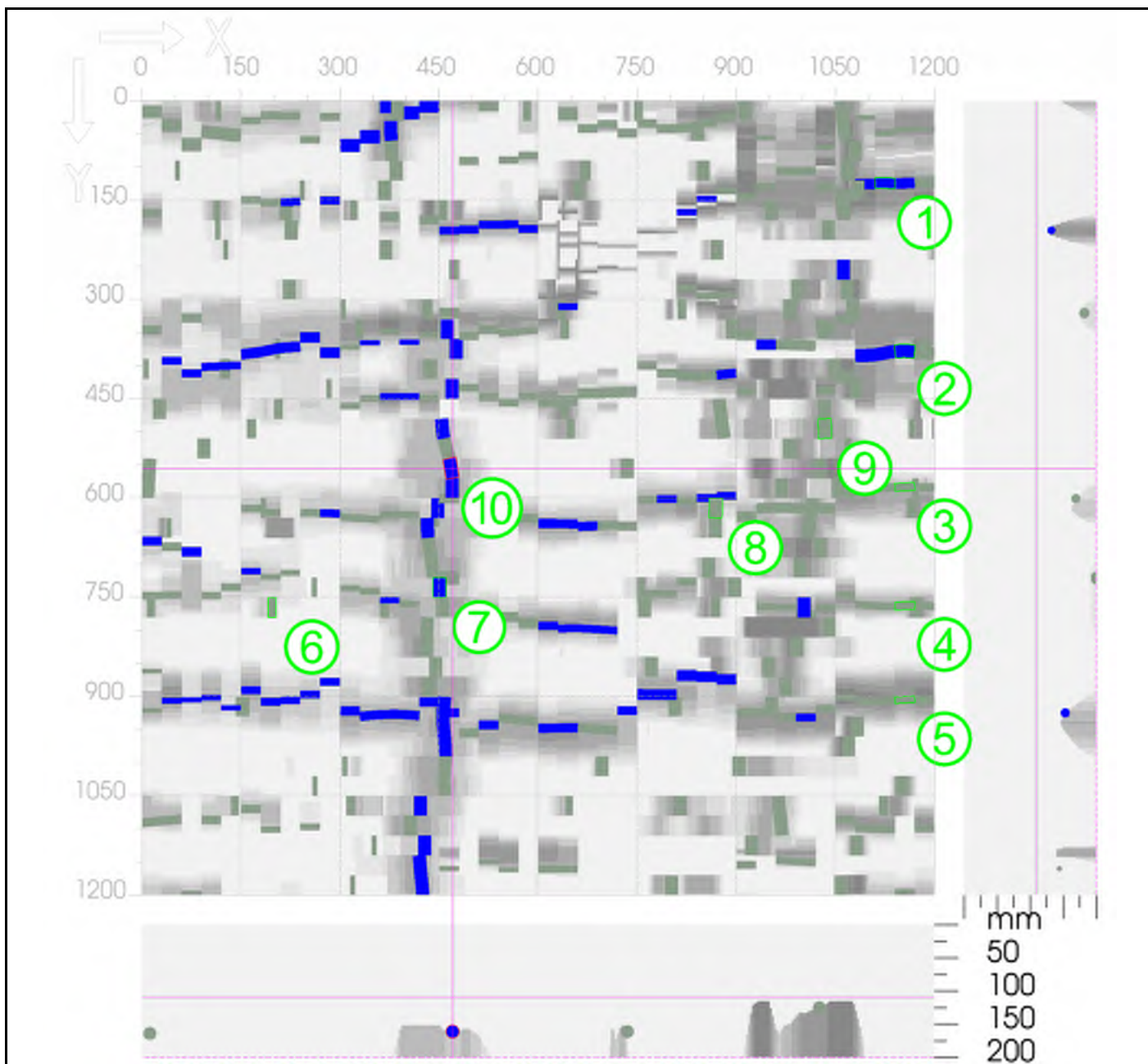
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	212 mm	315 mm	74 mm	8 mm	Vertical	Low
2.	527 mm	315 mm	106 mm	20 mm	Vertical	High
3.	809 mm	315 mm	105 mm	16 mm	Vertical	High
4.	885 mm	91 mm	88 mm	12 mm	Horizontal	High
5.	945 mm	361 mm	88 mm	12 mm	Horizontal	High
6.	945 mm	673 mm	86 mm	14 mm	Horizontal	High
7.	945 mm	938 mm	86 mm	14 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 84.fscan
Serial number: 227190008
Date / Time: 2019-10-01 00:27:15
Comment: -



x 470 mm y 555 mm z 109 mm Thickness: 99 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 2	Object:	B2-8
User:	B.D		
Comment:	-		

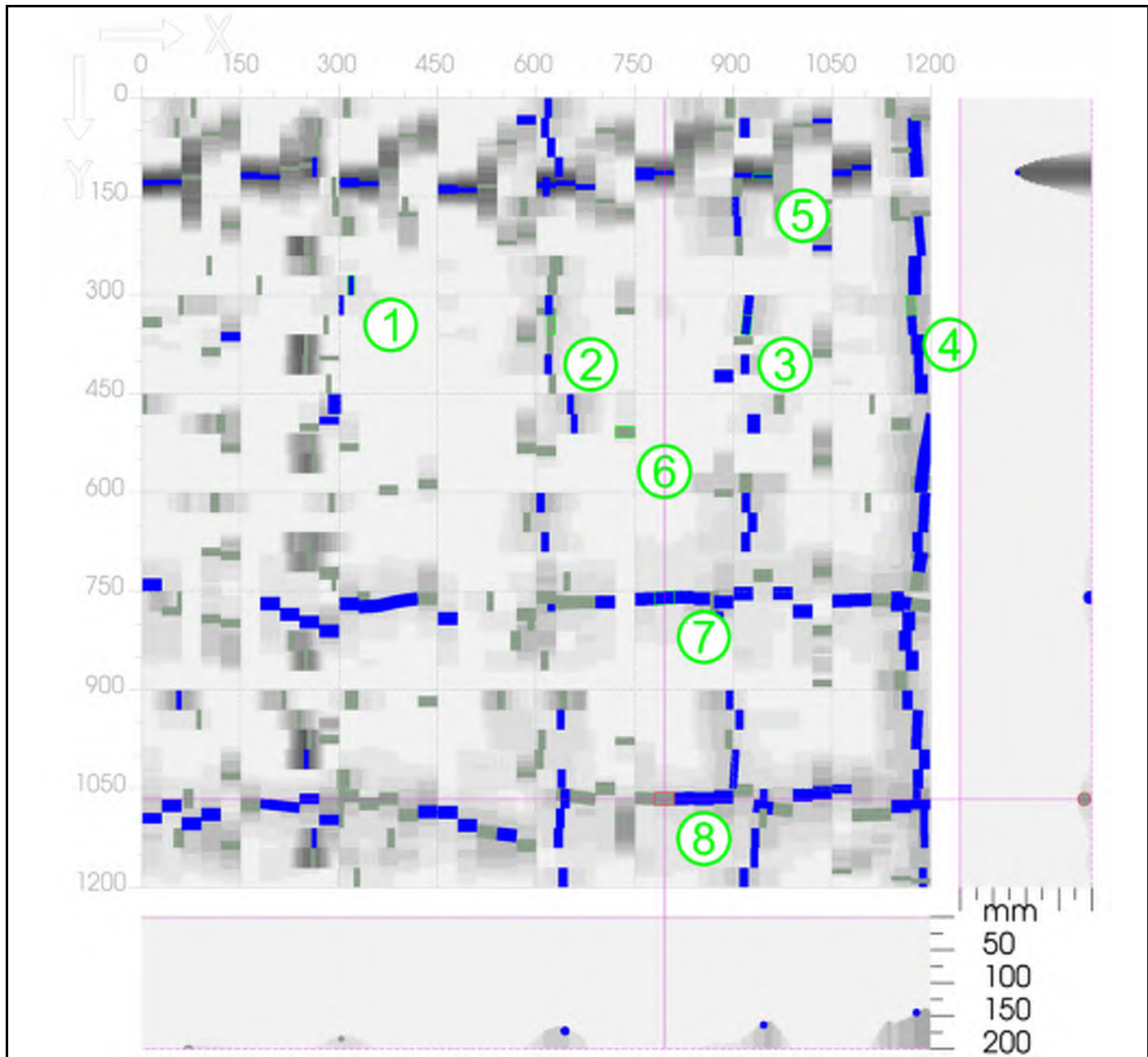
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	1125 mm	124 mm	123 mm	16 mm	Horizontal	High
2.	1155 mm	375 mm	130 mm	20 mm	Horizontal	High
3.	1155 mm	582 mm	141 mm	12 mm	Horizontal	Low
4.	1155 mm	761 mm	145 mm	12 mm	Horizontal	Low
5.	1155 mm	904 mm	122 mm	10 mm	Horizontal	Low
6.	197 mm	765 mm	163 mm	12 mm	Vertical	Low
7.	451 mm	735 mm	160 mm	20 mm	Vertical	High
8.	869 mm	615 mm	138 mm	20 mm	Vertical	Low
9.	1034 mm	495 mm	131 mm	20 mm	Vertical	Low
10.	470 mm	555 mm	151 mm	20 mm	Vertical	High

Hilti PROFIS Detection Report

Scan File: 92.fscan
Serial number: 227190008
Date / Time: 2019-10-01 22:06:08
Comment: -



x 795 mm y 1066 mm z 0 mm Thickness: 200 mm
Overlay: - mm

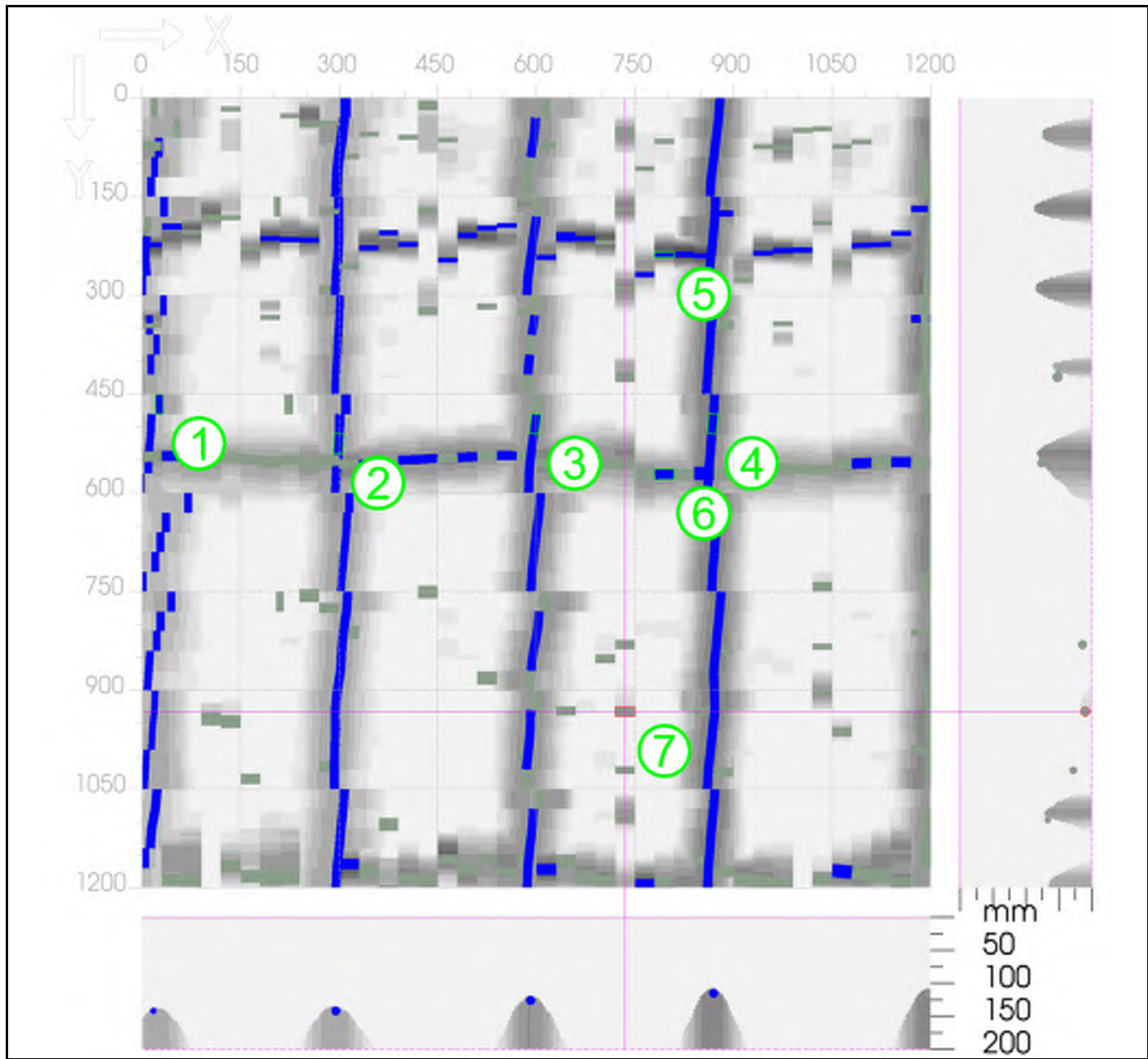
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 2	Object:	B2-9
User:	B.D		
Comment:	-		
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	318 mm	285 mm	182 mm	10 mm	Vertical	High
2.	623 mm	345 mm	173 mm	12 mm	Vertical	Low
3.	918 mm	345 mm	169 mm	14 mm	Vertical	High
4.	1169 mm	315 mm	149 mm	14 mm	Vertical	Low
5.	945 mm	119 mm	82 mm	8 mm	Horizontal	High
6.	735 mm	508 mm	187 mm	16 mm	Horizontal	Low
7.	795 mm	759 mm	187 mm	20 mm	Horizontal	High
8.	795 mm	1066 mm	179 mm	20 mm	Horizontal	Low

Hilti PROFIS Detection Report

Scan File: 93.fscan
Serial number: 227190008
Date / Time: 2019-10-01 22:09:42
Comment: -



x 735 mm y 932 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 2	Object:	B2-10
User:	B.D		
Comment:	-		

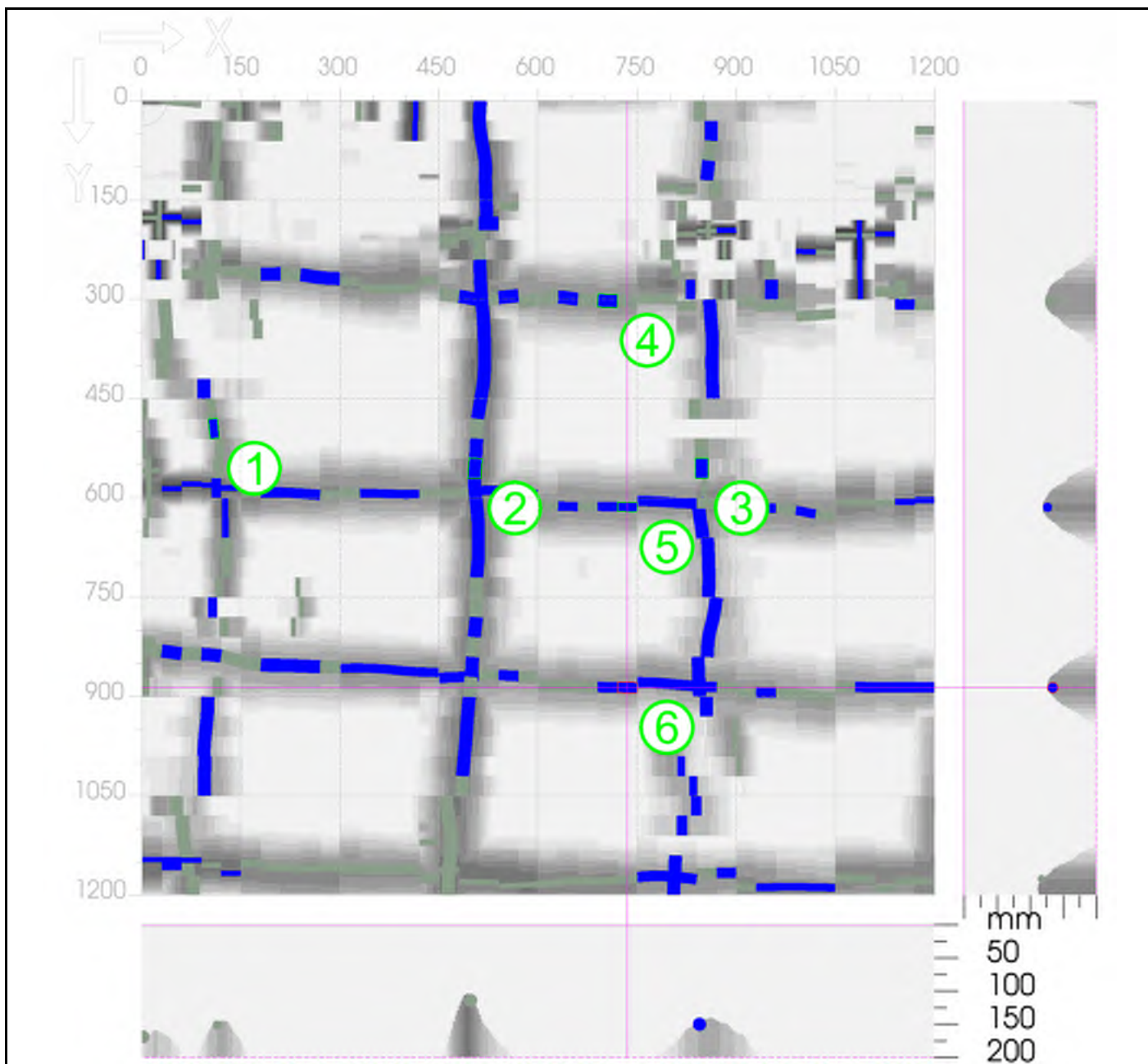
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	27 mm	465 mm	138 mm	12 mm	Vertical	High
2.	299 mm	525 mm	137 mm	14 mm	Vertical	High
3.	598 mm	495 mm	121 mm	14 mm	Vertical	High
4.	868 mm	495 mm	108 mm	14 mm	Vertical	High
5.	795 mm	238 mm	88 mm	8 mm	Horizontal	High
6.	795 mm	571 mm	126 mm	16 mm	Horizontal	High
7.	735 mm	932 mm	183 mm	14 mm	Horizontal	Low

Hilti PROFIS Detection Report

Scan File: 94.fscan
Serial number: 227190008
Date / Time: 2019-10-01 22:20:20
Comment: -



x 735 mm y 886 mm z 0 mm Thickness: 200 mm
Overlay: - mm

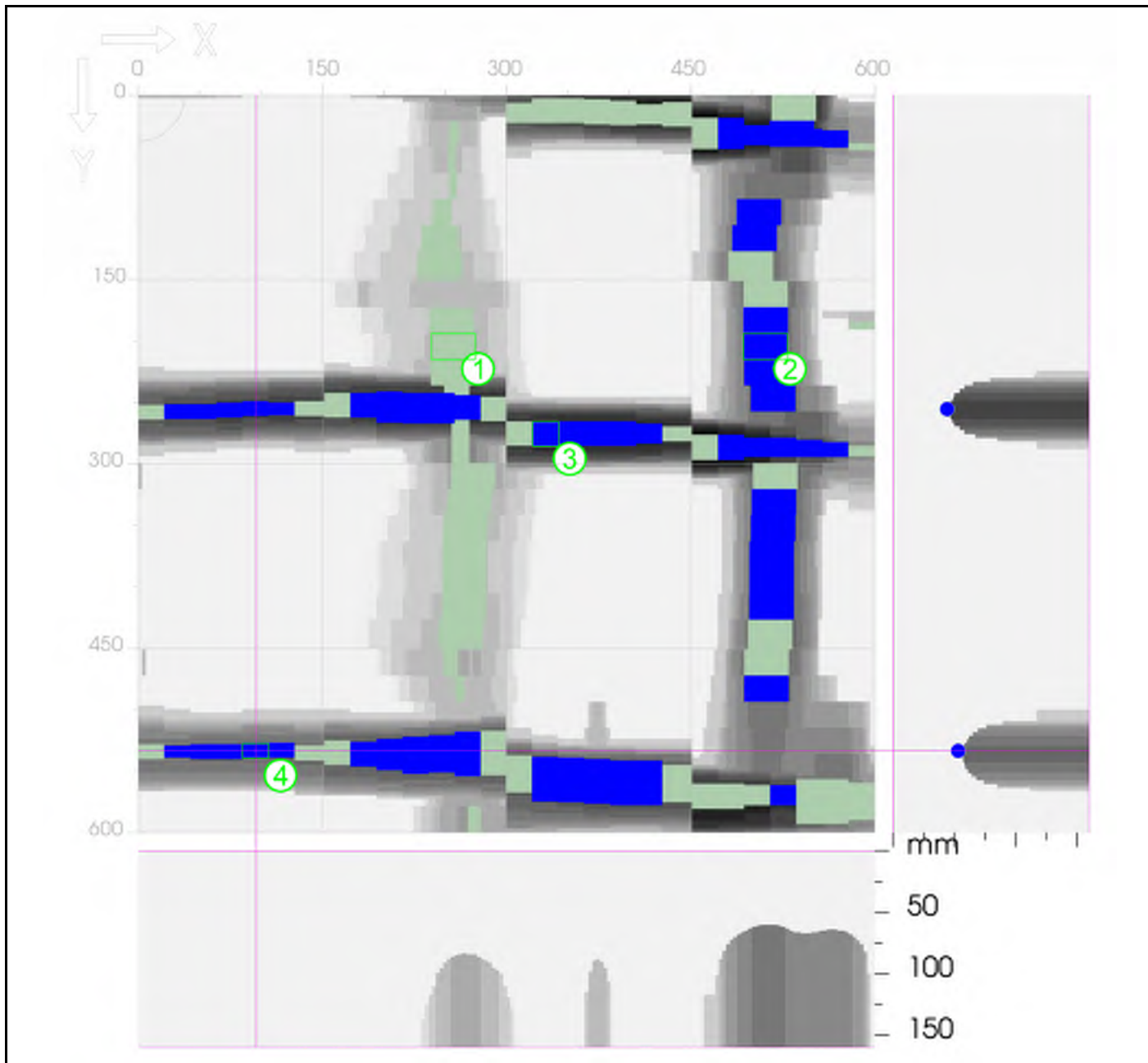
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 2	Object:	B2-11
User:	B.D		
Comment:	-		
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	110 mm	495 mm	127 mm	14 mm	Vertical	High
2.	505 mm	555 mm	104 mm	20 mm	Vertical	High
3.	848 mm	555 mm	148 mm	20 mm	Vertical	High
4.	705 mm	302 mm	123 mm	20 mm	Horizontal	High
5.	735 mm	614 mm	119 mm	14 mm	Horizontal	High
6.	735 mm	886 mm	126 mm	16 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: FS_11418003_A_000602.XFF
Serial number: 11418003
Date / Time: 2000-08-18 10:15:09
Comment: -



x 96 mm y 534 mm z 0 mm Thickness: 160 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1 Lower	Object:	B1L-1
User:	B.D		
Comment:	-		

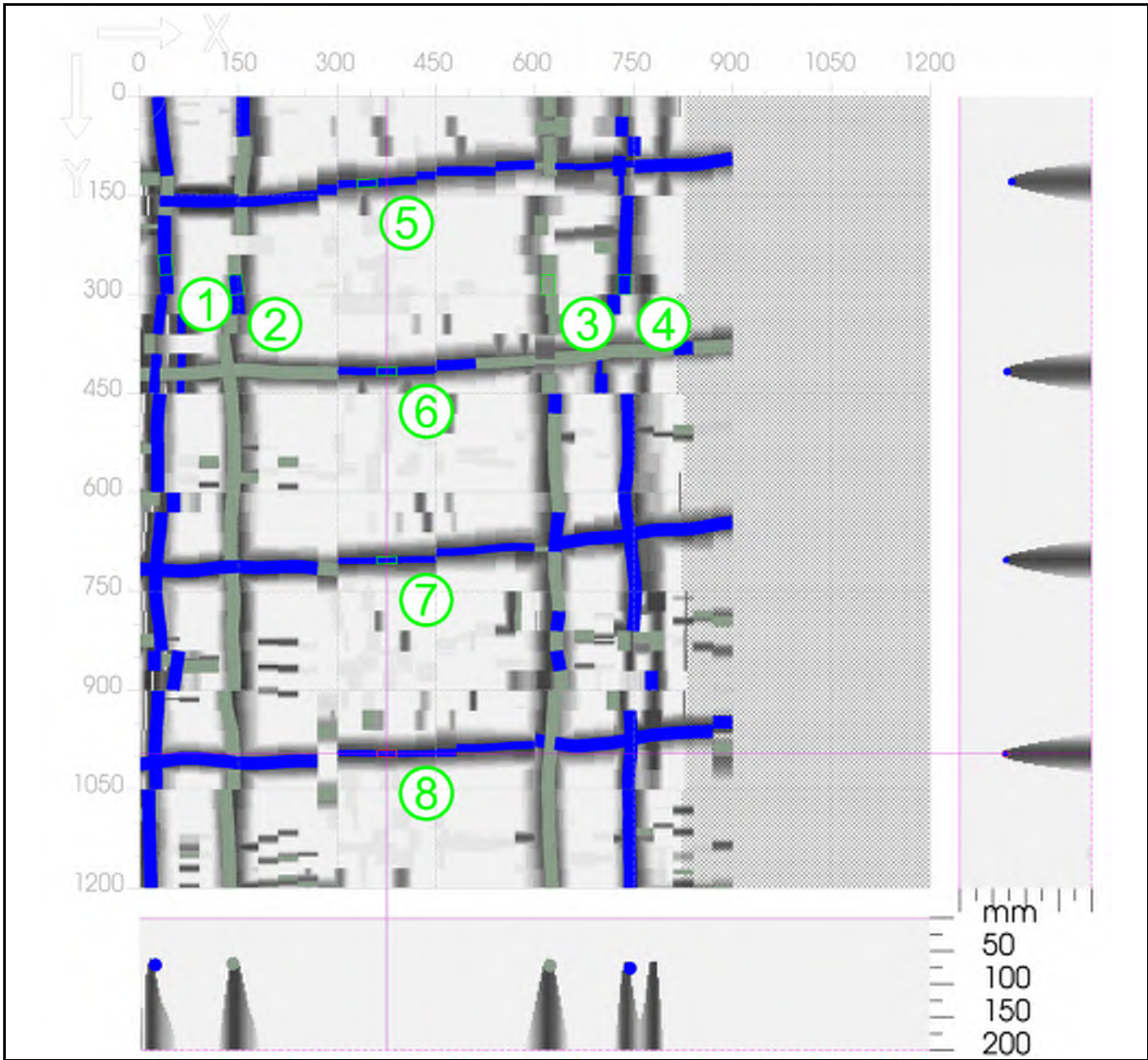
Ø Horizontal:	-	Type:	Auto
Ø Vertical:	-	Type:	Auto

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Status:
1.	257 mm	203 mm	94 mm	36mm	Vertical	Verified

2.	511 mm	203 mm	57 mm	36mm	Vertical	Verified
3.	331 mm	276 mm	35 mm	20mm	Horizontal	Verified
4.	96 mm	534 mm	47 mm	12mm	Horizontal	Verified

Hilti PROFIS Detection Report

Scan File: 37.fscan
Serial number: 227190008
Date / Time: 2019-09-25 22:06:10
Comment: -



x 375 mm y 996 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1 Lower	Object:	B1L-4
User:	B.D		
Comment:	-		

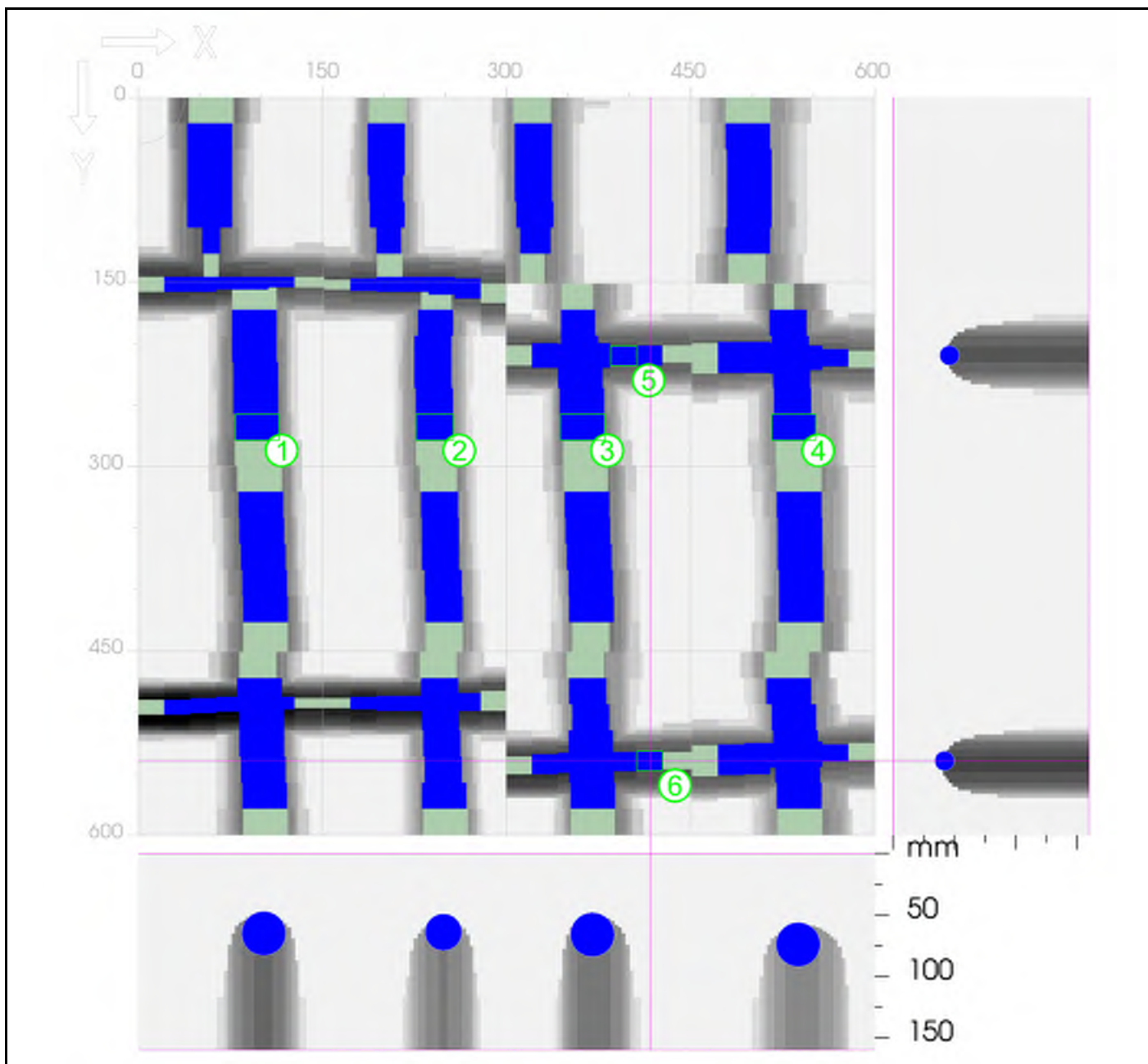
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	39 mm	255 mm	62 mm	20 mm	Vertical	High
2.	145 mm	285 mm	64 mm	20 mm	Vertical	High
3.	620 mm	285 mm	68 mm	20 mm	Vertical	Low
4.	735 mm	285 mm	63 mm	20 mm	Vertical	High
5.	345 mm	132 mm	72 mm	12 mm	Horizontal	High
6.	375 mm	417 mm	66 mm	12 mm	Horizontal	High
7.	375 mm	703 mm	65 mm	10 mm	Horizontal	High
8.	375 mm	996 mm	64 mm	10 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: FS_11418003_A_000610.XFF
Serial number: 11418003
Date / Time: 2000-08-18 13:02:45
Comment: -



x 417 mm y 540 mm z 0 mm Thickness: 160 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1 Lower	Object:	B1L-2
User:	B.D		
Comment:	-		

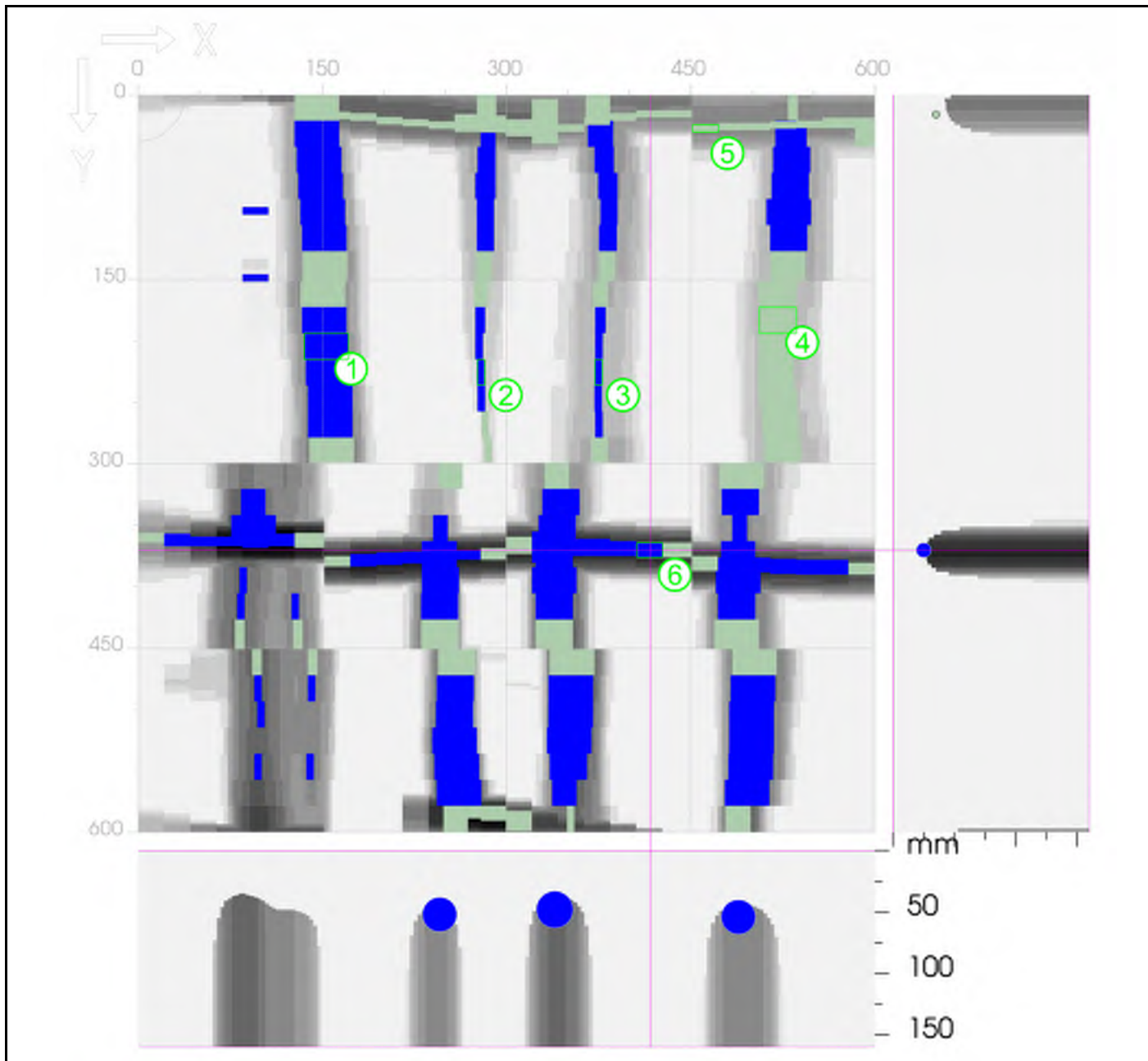
Ø Horizontal:	-	Type:	Auto
Ø Vertical:	-	Type:	Auto

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Status:
1.	97 mm	267 mm	44 mm	36mm	Vertical	Verified

2.	241 mm	267 mm	50 mm	30mm	Vertical	Verified
3.	362 mm	267 mm	48 mm	36mm	Vertical	Verified
4.	534 mm	267 mm	55 mm	36mm	Vertical	Verified
5.	396 mm	210 mm	37 mm	16mm	Horizontal	Verified
6.	417 mm	540 mm	34 mm	16mm	Horizontal	Verified

Hilti PROFIS Detection Report

Scan File: FS_11418003_A_000606.XFF
Serial number: 11418003
Date / Time: 2000-08-18 11:51:53
Comment: -



x 417 mm y 370 mm z 0 mm Thickness: 160 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1 Lower	Object:	B1L-2
User:	B.D		
Comment:	-		

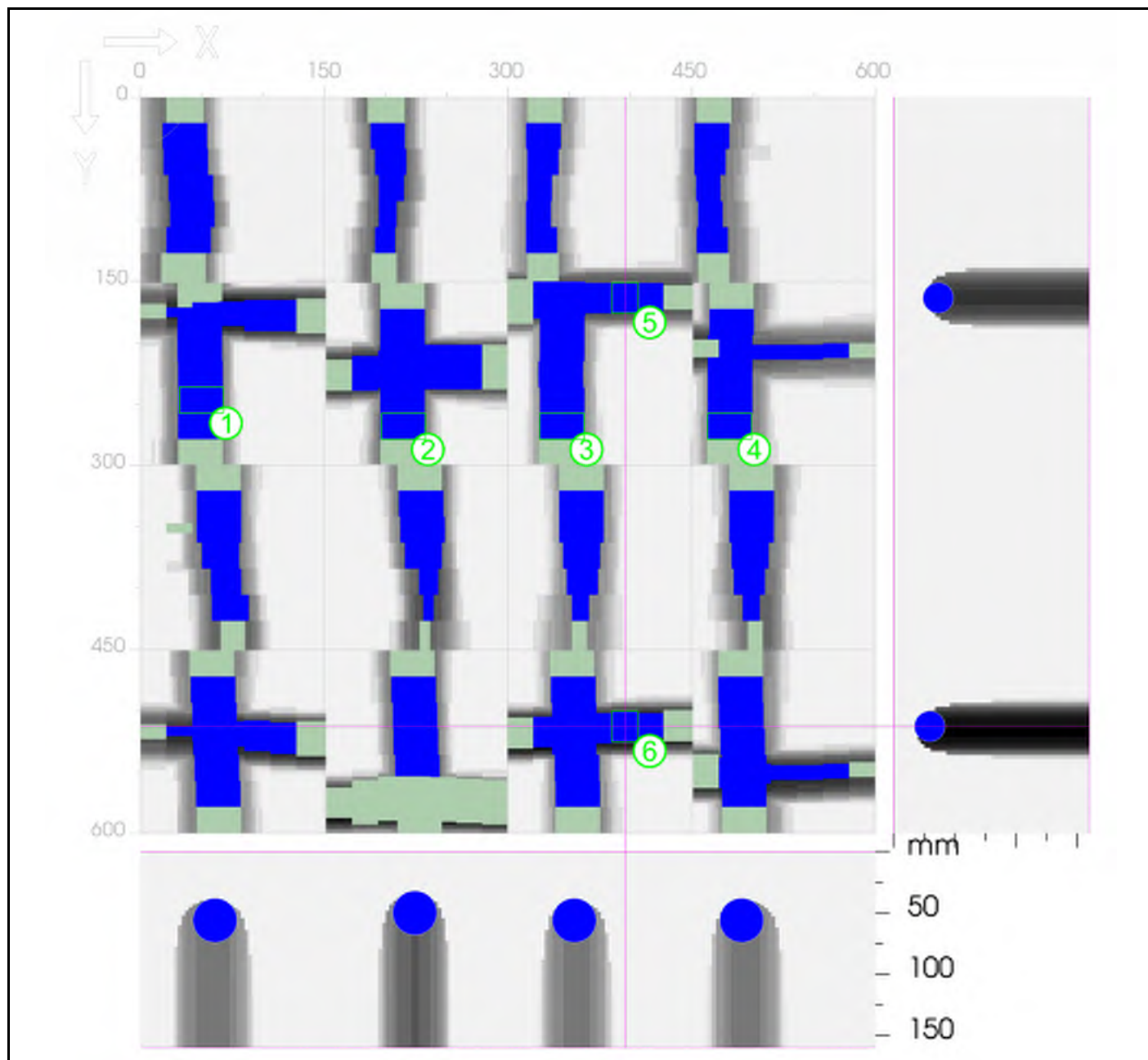
Ø Horizontal:	-	Type:	Auto
Ø Vertical:	-	Type:	Auto

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Status:
1.	153 mm	203 mm	41 mm	36mm	Vertical	Verified

2.	279 mm	224 mm	57 mm	6mm	Vertical	Verified
3.	375 mm	224 mm	48 mm	6mm	Vertical	Verified
4.	521 mm	181 mm	62 mm	30mm	Vertical	Verified
5.	460 mm	27 mm	29 mm	6mm	Horizontal	Unverified
6.	417 mm	370 mm	19 mm	12mm	Horizontal	Verified

Hilti PROFIS Detection Report

Scan File: FS_11418003_A_000609.XFF
Serial number: 11418003
Date / Time: 2000-08-18 12:59:25
Comment: -



x 396 mm y 513 mm z 0 mm Thickness: 160 mm
Overlay: - mm

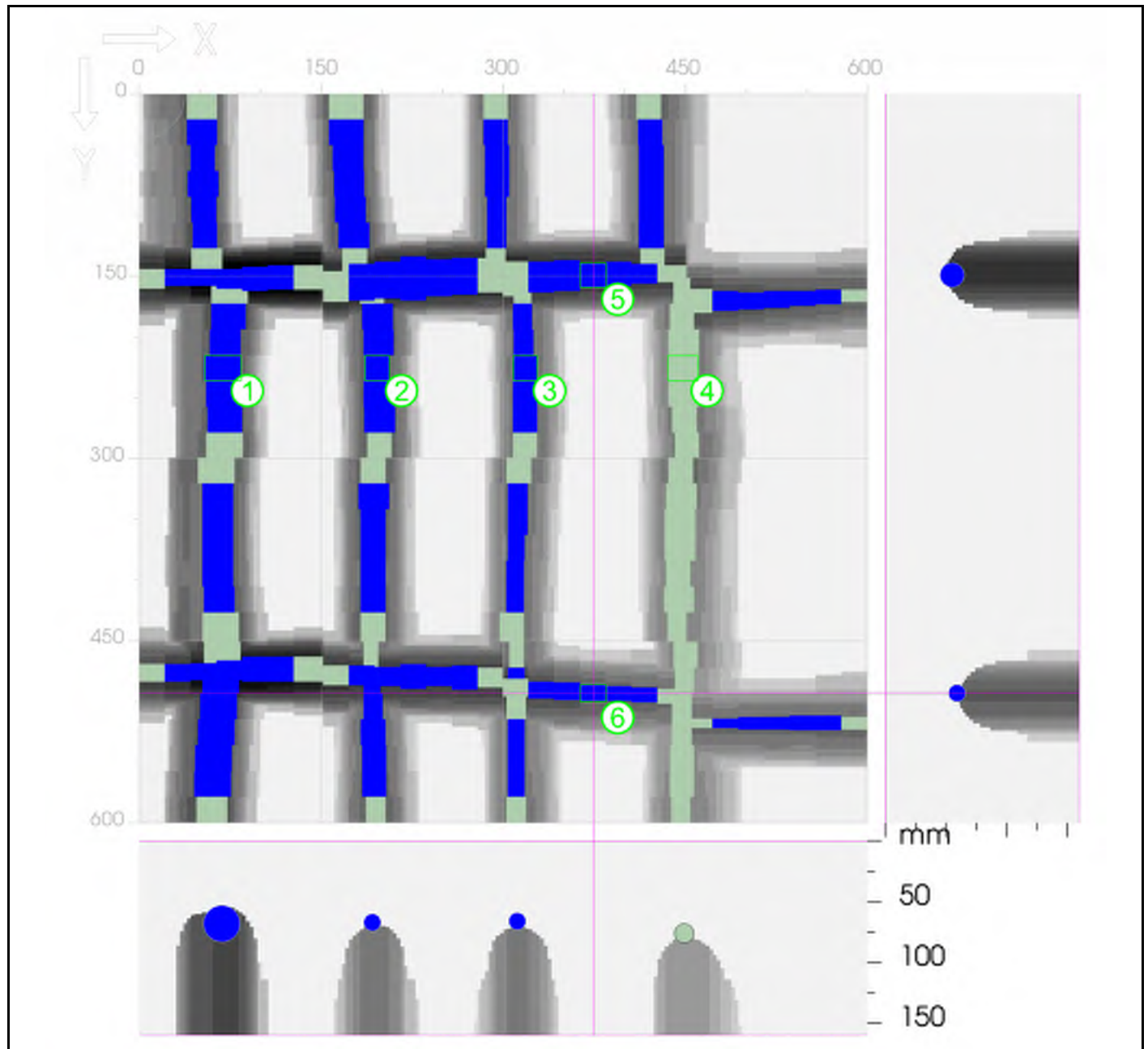
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1 Lower	Object:	B1L-2
User:	B.D		
Comment:	-		

Ø Horizontal:	-	Type:	Auto
Ø Vertical:	-	Type:	Auto

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Status:
1.	50 mm	246 mm	34 mm	36mm	Vertical	Verified

2.	215 mm	267 mm	32 mm	36mm	Vertical	Verified
3.	344 mm	267 mm	39 mm	36mm	Vertical	Verified
4.	481 mm	267 mm	37 mm	36mm	Vertical	Verified
5.	396 mm	164 mm	24 mm	25mm	Horizontal	Verified
6.	396 mm	513 mm	17 mm	25mm	Horizontal	Verified

Scan File: FS_11418003_A_000611.XFF
Serial number: 11418003
Date / Time: 2000-08-18 13:04:32
Comment: -



x: 374 mm y: 493 mm z: 0 mm Thickness: 160 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1 Lower	Object:	B1L-3
User:	B.D		
Comment:	-		

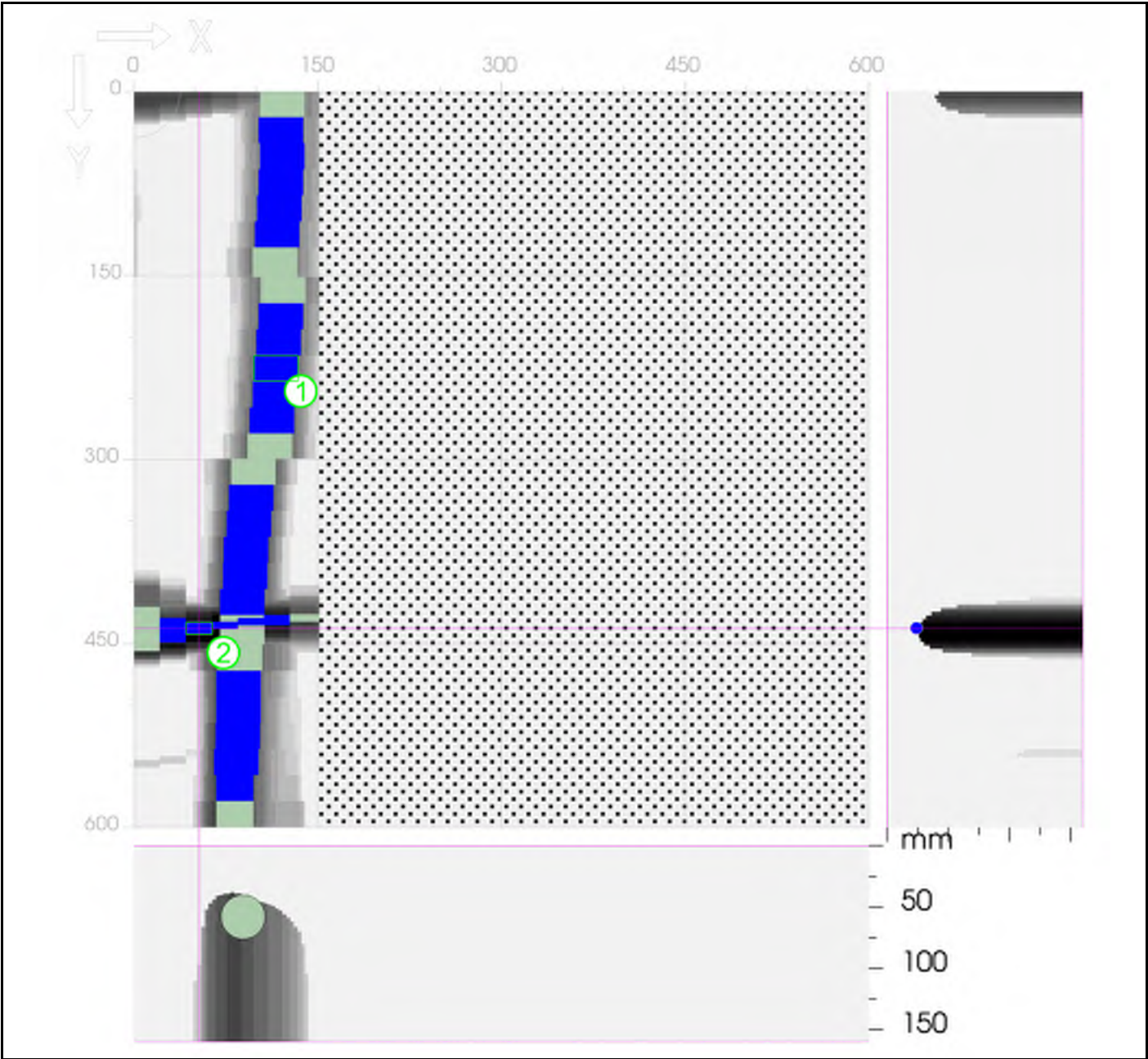
Ø Horizontal:	-	Type:	Auto
Ø Vertical:	-	Type:	Auto

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Status:
1.	69 mm	224 mm	57 mm	30mm	Vertical	Verified

2.	196 mm	224 mm	54 mm	20mm	Vertical	Verified
3.	318 mm	224 mm	59 mm	20mm	Vertical	Verified
4.	448 mm	224 mm	62 mm	25mm	Vertical	Verified
5.	374 mm	149 mm	45 mm	20mm	Horizontal	Verified
6.	374 mm	493 mm	52 mm	14mm	Horizontal	Verified

Hilti PROFIS Detection Report

Scan File: FS_11418003_A_000608.XFF
Serial number: 11418003
Date / Time: 2000-08-18 11:53:44
Comment: -



x 53 mm y 438 mm z 0 mm Thickness: 160 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1 Lower	Object:	B1L-3
User:	B.D		
Comment:	-		

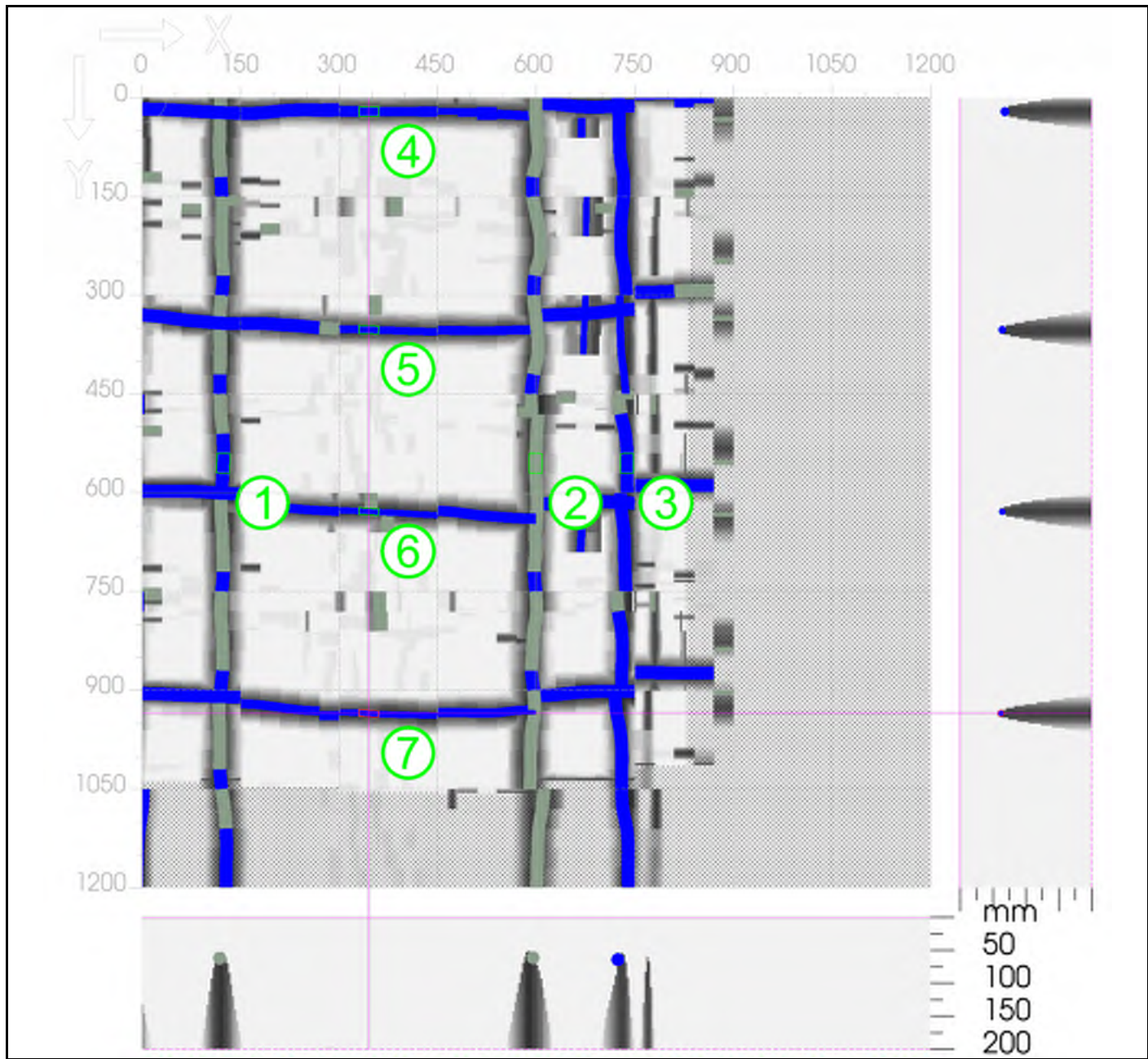
Ø Horizontal:	-	Type:	Auto
Ø Vertical:	-	Type:	Auto

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Status:
1.	116 mm	224 mm	43 mm	36mm	Vertical	Verified

2.	53 mm	438 mm	19 mm	10mm	Horizontal	Verified
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Hilti PROFIS Detection Report

Scan File: 38.fscan
Serial number: 227190008
Date / Time: 2019-09-25 22:09:40
Comment: -



x 345 mm y 935 mm z 0 mm Thickness: 200 mm
Overlay: - mm

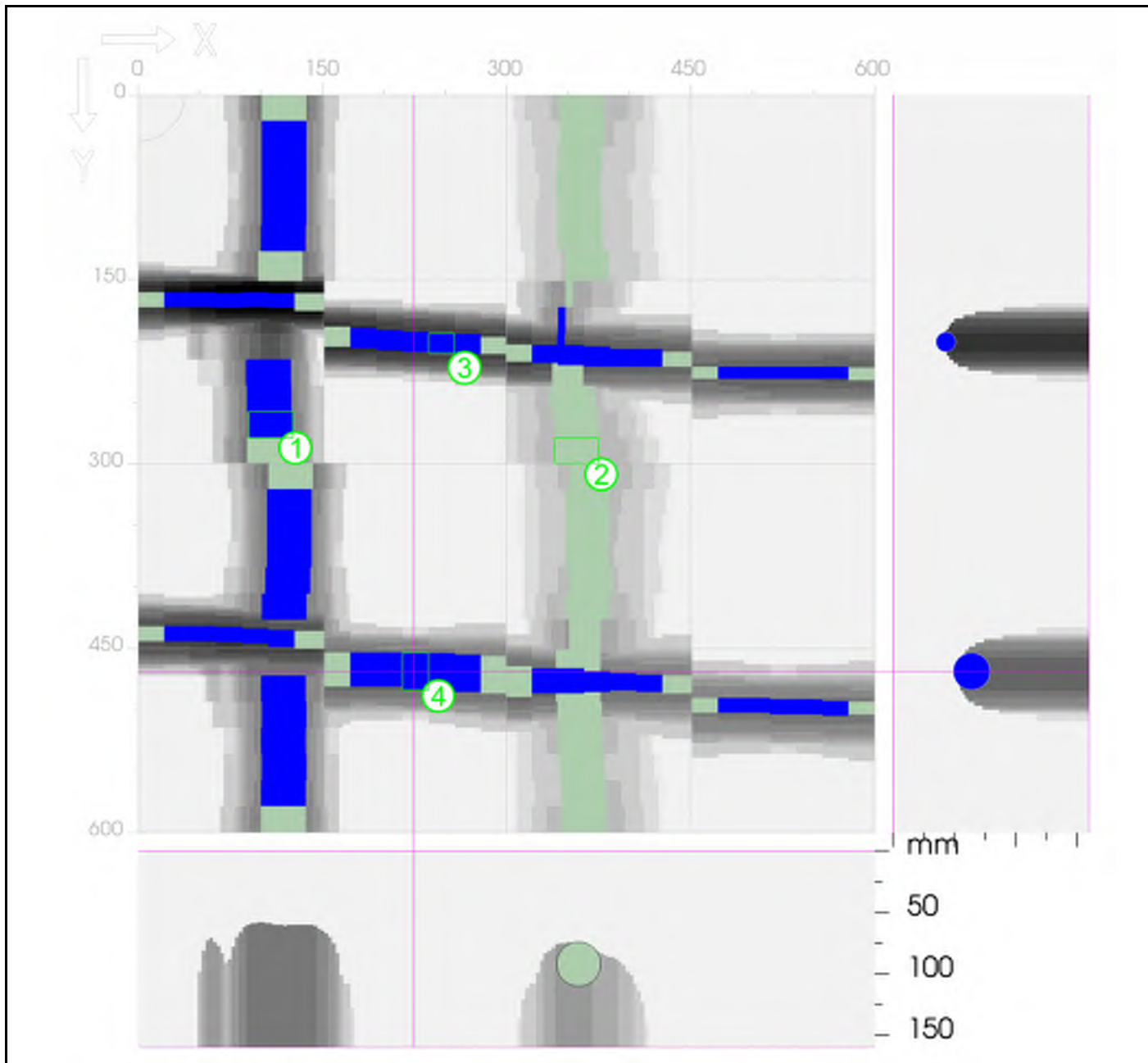
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1 Lower	Object:	B1L-4
User:	B.D		
Comment:	-		
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	123 mm	555 mm	54 mm	20 mm	Vertical	High
2.	600 mm	555 mm	53 mm	20 mm	Vertical	Low
3.	737 mm	555 mm	58 mm	20 mm	Vertical	High
4.	345 mm	21 mm	61 mm	14 mm	Horizontal	High
5.	345 mm	352 mm	58 mm	12 mm	Horizontal	High
6.	345 mm	629 mm	59 mm	10 mm	Horizontal	High
7.	345 mm	935 mm	57 mm	10 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: FS_11418003_A_000601.XFF
Serial number: 11418003
Date / Time: 2000-08-18 10:13:59
Comment: -



x 224 mm y 469 mm z 0 mm Thickness: 160 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1 Lower	Object:	BL1-1
User:	B.D		
Comment:	-		

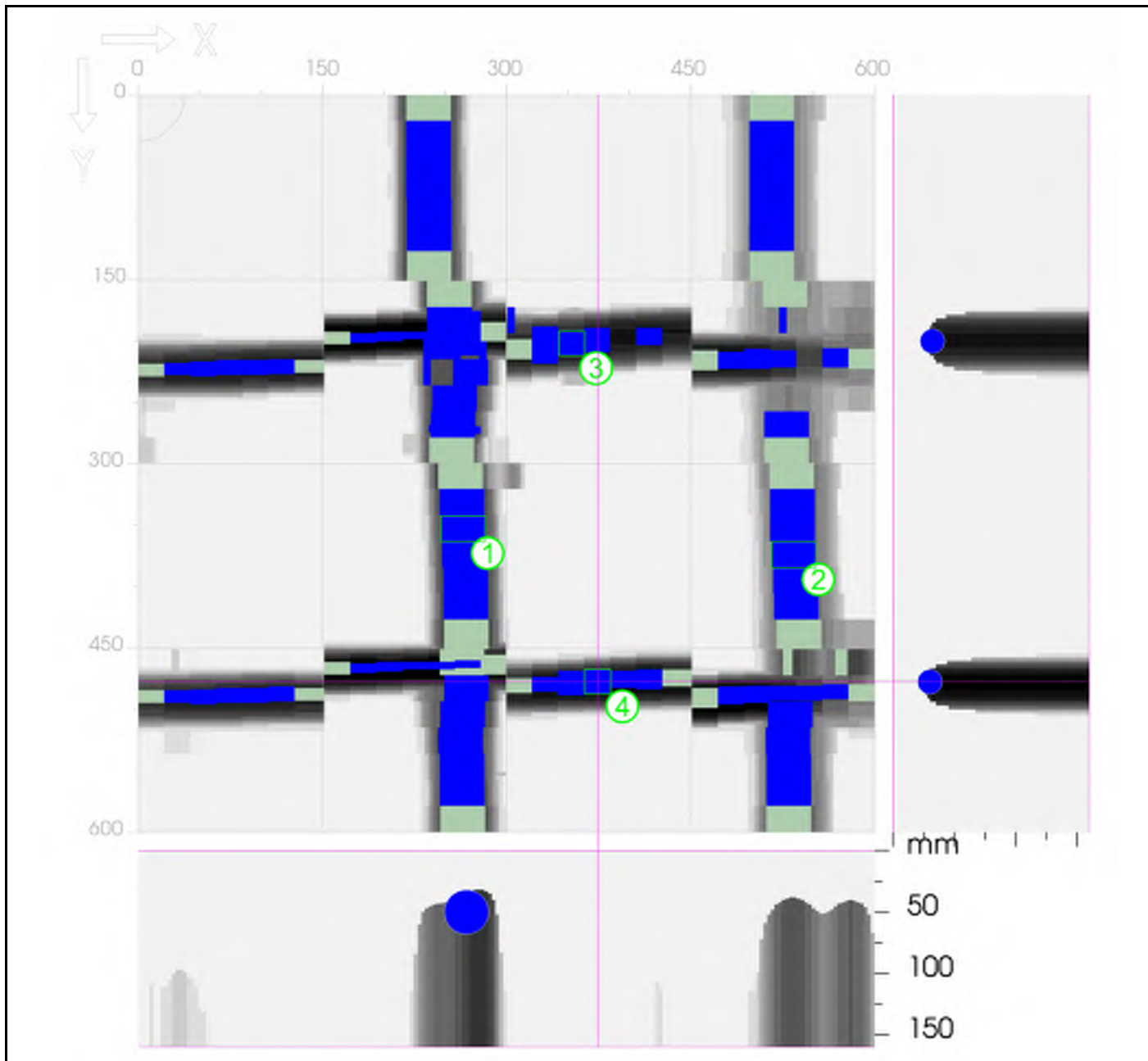
Ø Horizontal:	-	Type:	Auto
Ø Vertical:	-	Type:	Auto

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Status:
1.	108 mm	267 mm	56 mm	36mm	Vertical	Verified

2.	357 mm	289 mm	91 mm	36mm	Vertical	Unverified
3.	246 mm	202 mm	36 mm	16mm	Horizontal	Verified
4.	224 mm	469 mm	49 mm	30mm	Horizontal	Verified

Hilti PROFIS Detection Report

Scan File: FS_11418003_A_000600.XFF
Serial number: 11418003
Date / Time: 2000-08-18 10:07:57
Comment: -



x 374 mm y 478 mm z 0 mm Thickness: 160 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1 Lower	Object:	B1L-1
User:	B.D		
Comment:	-		

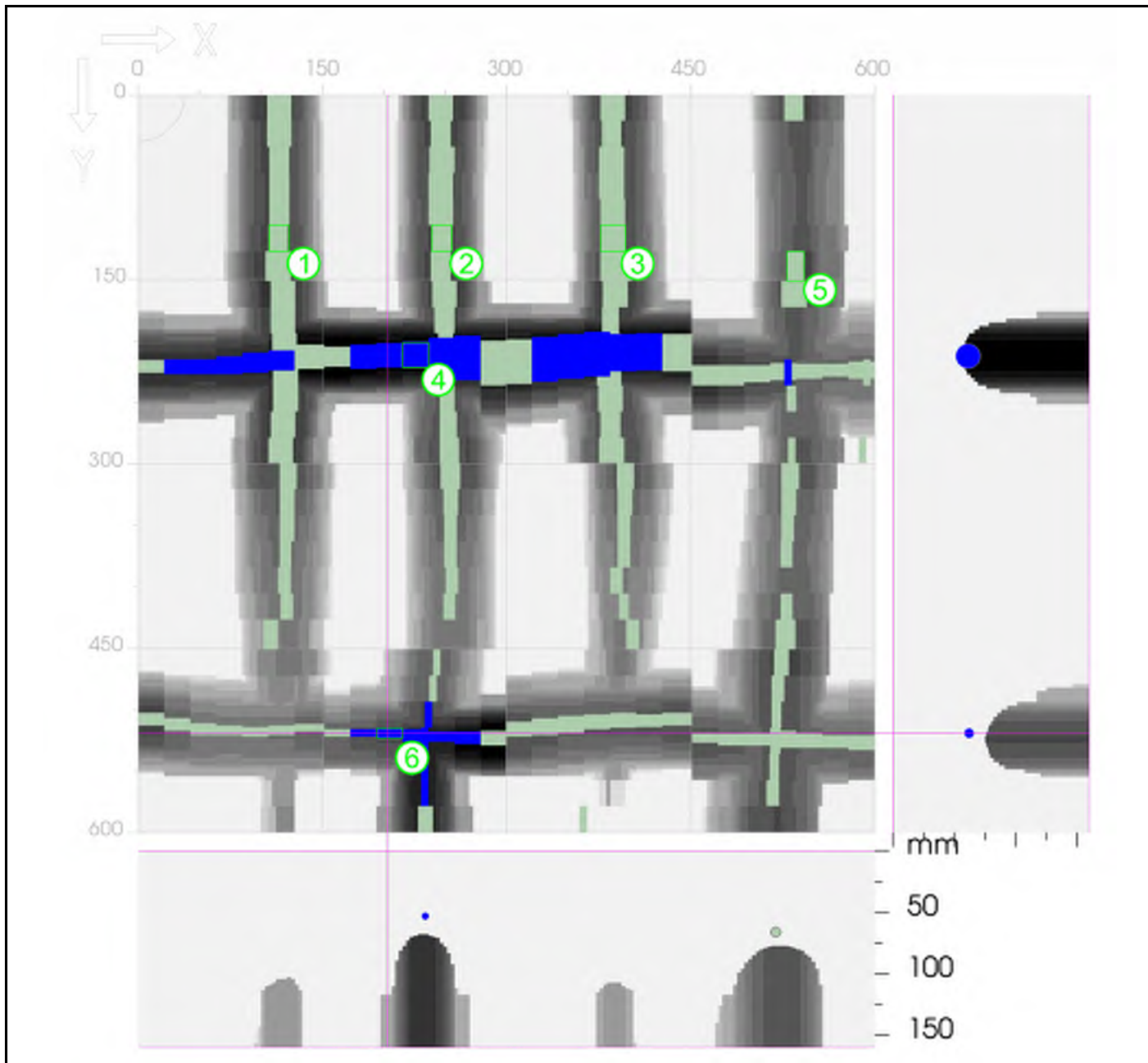
Ø Horizontal:	-	Type:	Auto
Ø Vertical:	-	Type:	Auto

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Status:
1.	264 mm	353 mm	28 mm	36mm	Vertical	Verified

2.	534 mm	374 mm	42 mm	36mm	Vertical	Verified
3.	353 mm	202 mm	23 mm	20mm	Horizontal	Verified
4.	374 mm	478 mm	20 mm	20mm	Horizontal	Verified

Hilti PROFIS Detection Report

Scan File: FS_11418003_A_000605.XFF
Serial number: 11418003
Date / Time: 2000-08-18 11:27:39
Comment: -



x 203 mm y 519 mm z 0 mm Thickness: 160 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1 Lower	Object:	B1L-2
User:	B.D		
Comment:	-		

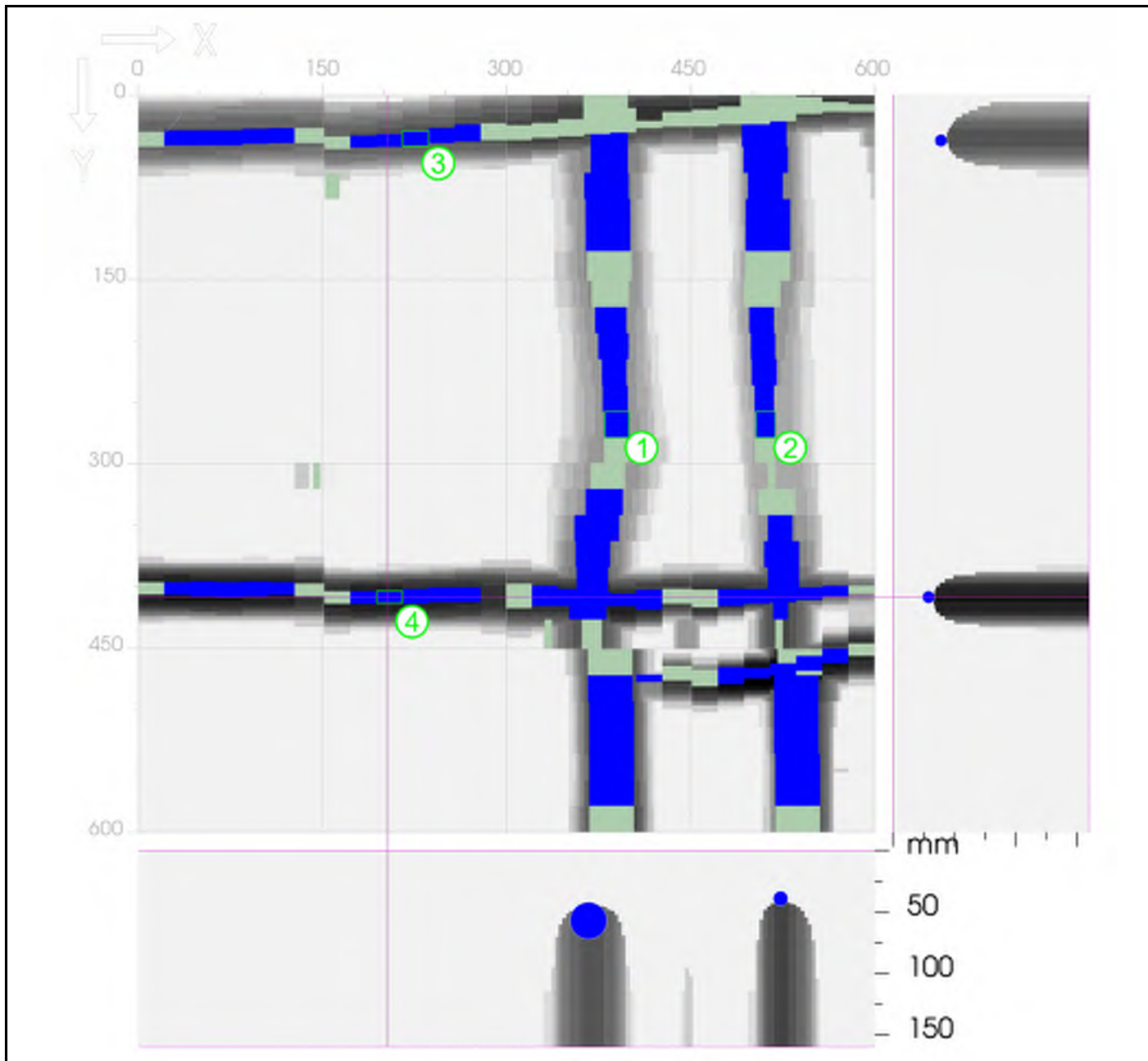
Ø Horizontal:	-	Type:	Auto
Ø Vertical:	-	Type:	Auto

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Status:
1.	115 mm	117 mm	64 mm	16mm	Vertical	Verified

2.	247 mm	117 mm	63 mm	16mm	Vertical	Verified
3.	387 mm	117 mm	67 mm	20mm	Vertical	Verified
4.	224 mm	212 mm	51 mm	20mm	Horizontal	Verified
5.	535 mm	139 mm	67 mm	14mm	Vertical	Unverified
6.	203 mm	519 mm	58 mm	8mm	Horizontal	Verified

Hilti PROFIS Detection Report

Scan File: FS_11418003_A_000607.XFF
Serial number: 11418003
Date / Time: 2000-08-18 11:52:57
Comment: -



x 203 mm y. 409 mm z 0 mm Thickness: 160 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1 Lower	Object:	B1L-3
User:	B.D		
Comment:	-		

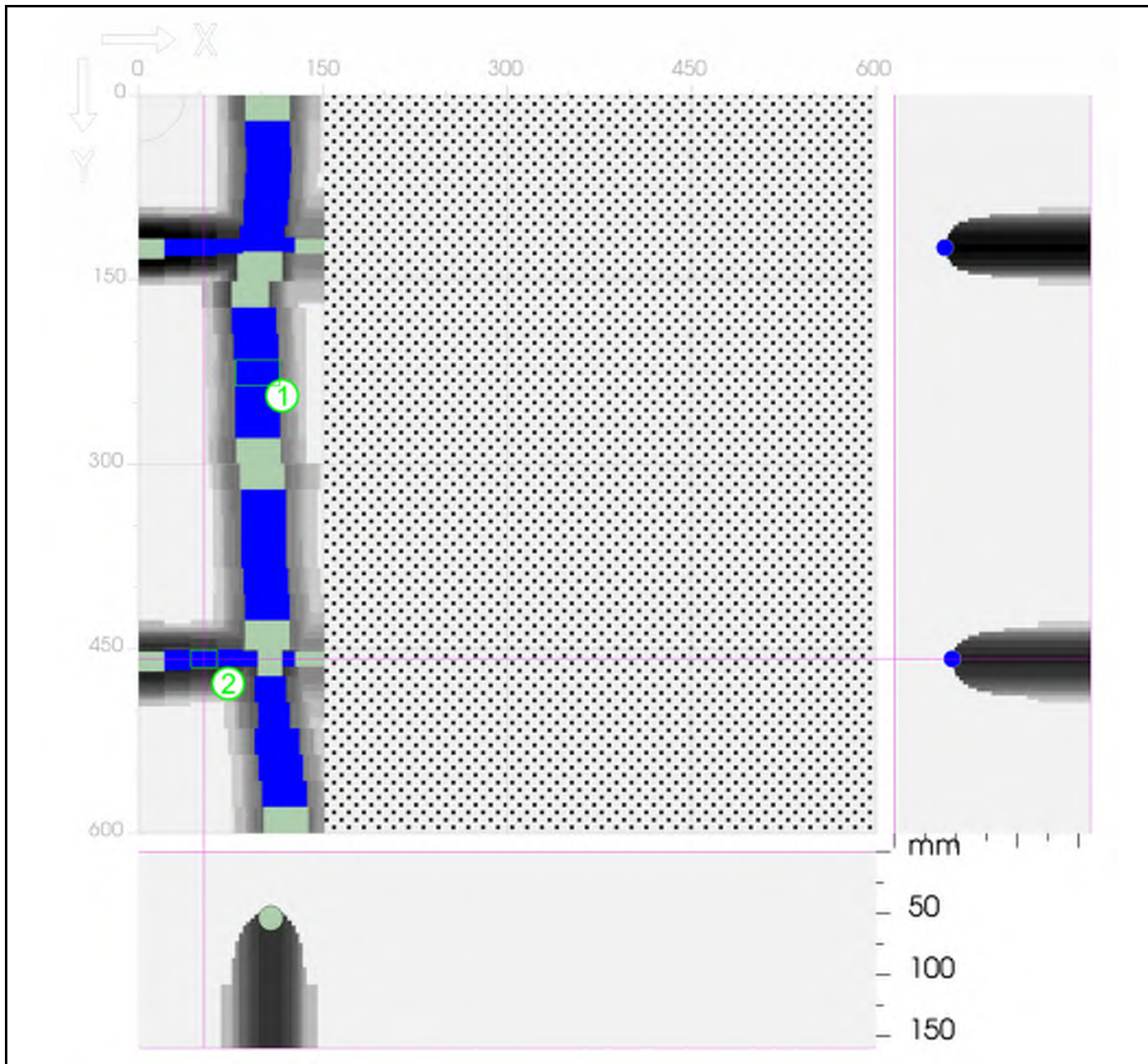
Ø Horizontal:	-	Type:	Auto
Ø Vertical:	-	Type:	Auto

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Status:
1.	390 mm	267 mm	56 mm	20mm	Vertical	Verified

2.	511 mm	267 mm	60 mm	16mm	Vertical	Verified
3.	224 mm	36 mm	35 mm	12mm	Horizontal	Verified
4.	203 mm	409 mm	24 mm	10mm	Horizontal	Verified

Hilti PROFIS Detection Report

Scan File: FS_11418003_A_000613.XFF
Serial number: 11418003
Date / Time: 2000-08-18 13:06:11
Comment: -



x 53 mm y 458 mm z 0 mm Thickness: 160 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1 Lower	Object:	B1L-3
User:	B.D		
Comment:	-		

Ø Horizontal:	-	Type:	Auto
Ø Vertical:	-	Type:	Auto

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Status:
1.	97 mm	224 mm	57 mm	36mm	Vertical	Verified

2.	53 mm	458 mm	40 mm	14mm	Horizontal	Verified
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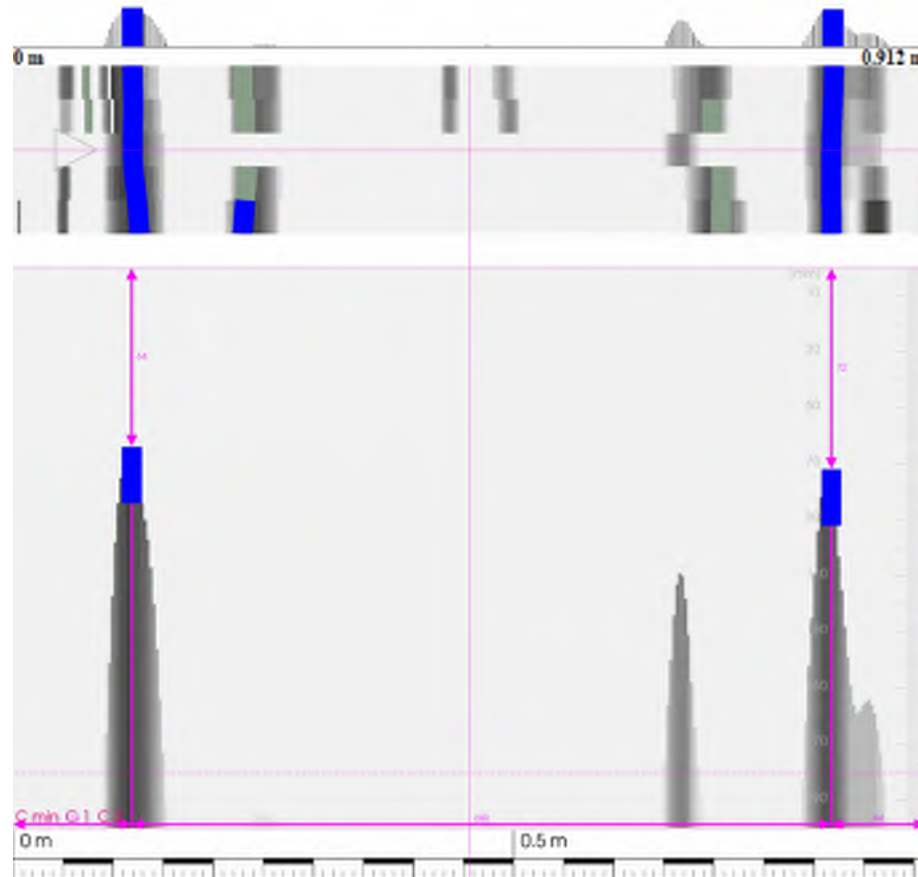
Hilti PROFIS Detection Report

Project information:

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1 Lower	Object:	B1L-4-
User:	B.D		
Comment:	-		

Scan information:

Scan File:	36.fscan
Serial number:	227190008
Date / Time:	2019-09-25 22:01:01
Comment:	-



Segment:

Width:	0.912 m	Position:	-
Ø:	14 mm +/- 6 mm	Number of rebars:	2
Detection mode:	Auto		
Overlay:	-		

Crosshair / cross section:

x:	0.456 m	y:	75 mm
z:	0 mm	Thickness:	180 mm

Range:

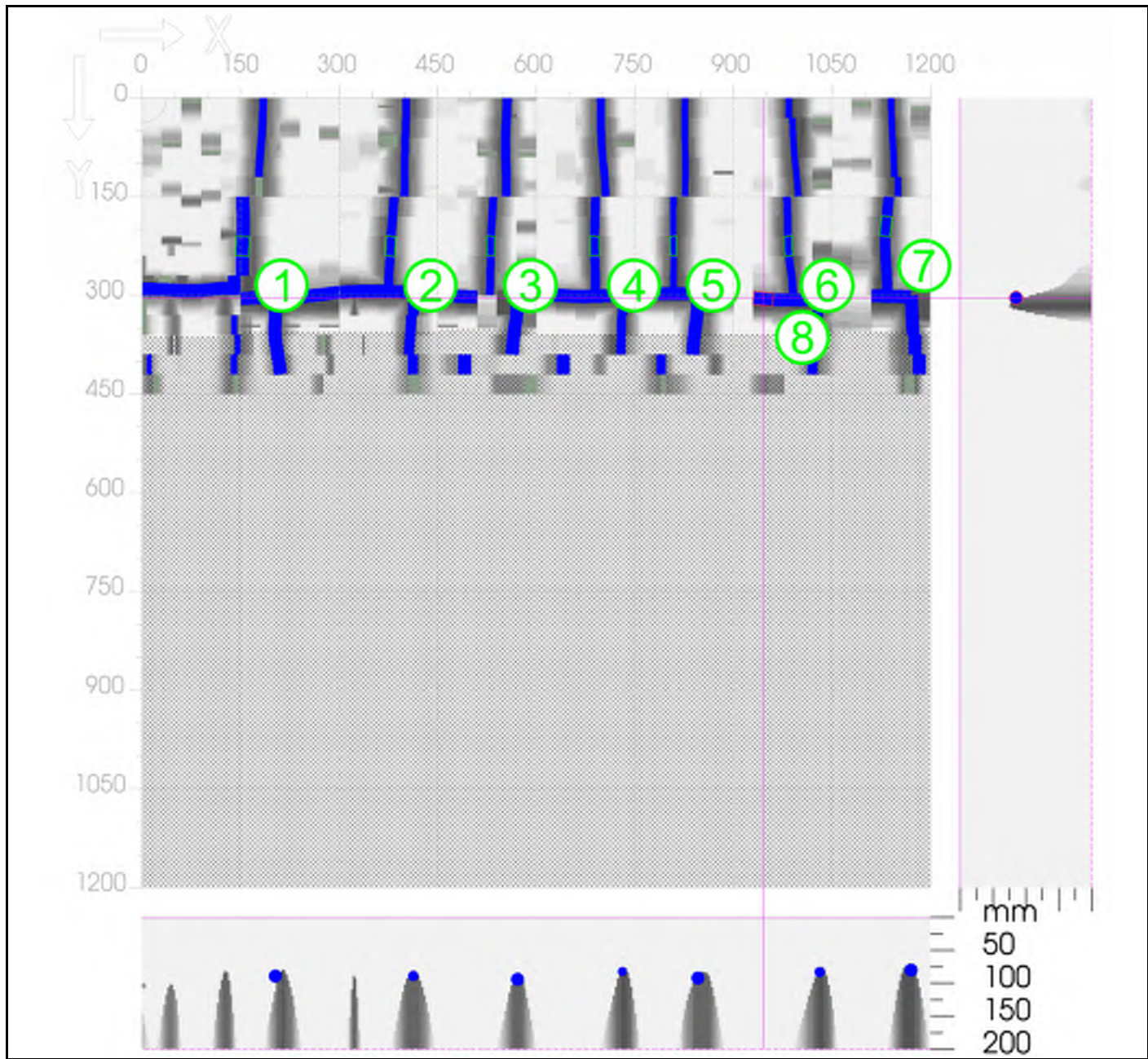
	Cover / Cut-off:	Number of rebars:
Cmin:	200 mm	2
C1:	200 mm	2
C2:	200 mm	2
Cut-off:	< 0 mm, 200 mm >	2

Statistic: Cover

Minimum:	64 mm	Maximum:	72 mm
Mean:	68 mm	Standard deviation:	6 mm
Median:	68 mm		

Hilti PROFIS Detection Report

Scan File: 42.fscan
Serial number: 227190008
Date / Time: 2019-09-25 23:38:43
Comment: -



x 945 mm y 304 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1 Lower	Object:	B1L-5
User:	B.D		
Comment:	-		
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	152 mm	225 mm	84 mm	20 mm	Vertical	High
2.	379 mm	225 mm	82 mm	14 mm	Vertical	High
3.	531 mm	225 mm	80 mm	12 mm	Vertical	High
4.	689 mm	225 mm	79 mm	14 mm	Vertical	High
5.	809 mm	225 mm	72 mm	10 mm	Vertical	High
6.	983 mm	225 mm	74 mm	12 mm	Vertical	High
7.	1130 mm	195 mm	76 mm	16 mm	Vertical	High
8.	945 mm	304 mm	75 mm	20 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 50.fscan
Serial number: 227190008
Date / Time: 2019-09-26 22:25:30
Comment: -



x 525 mm y 1036 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1 Lower	Object:	B1L-11
User:	B.D		
Comment:	-		

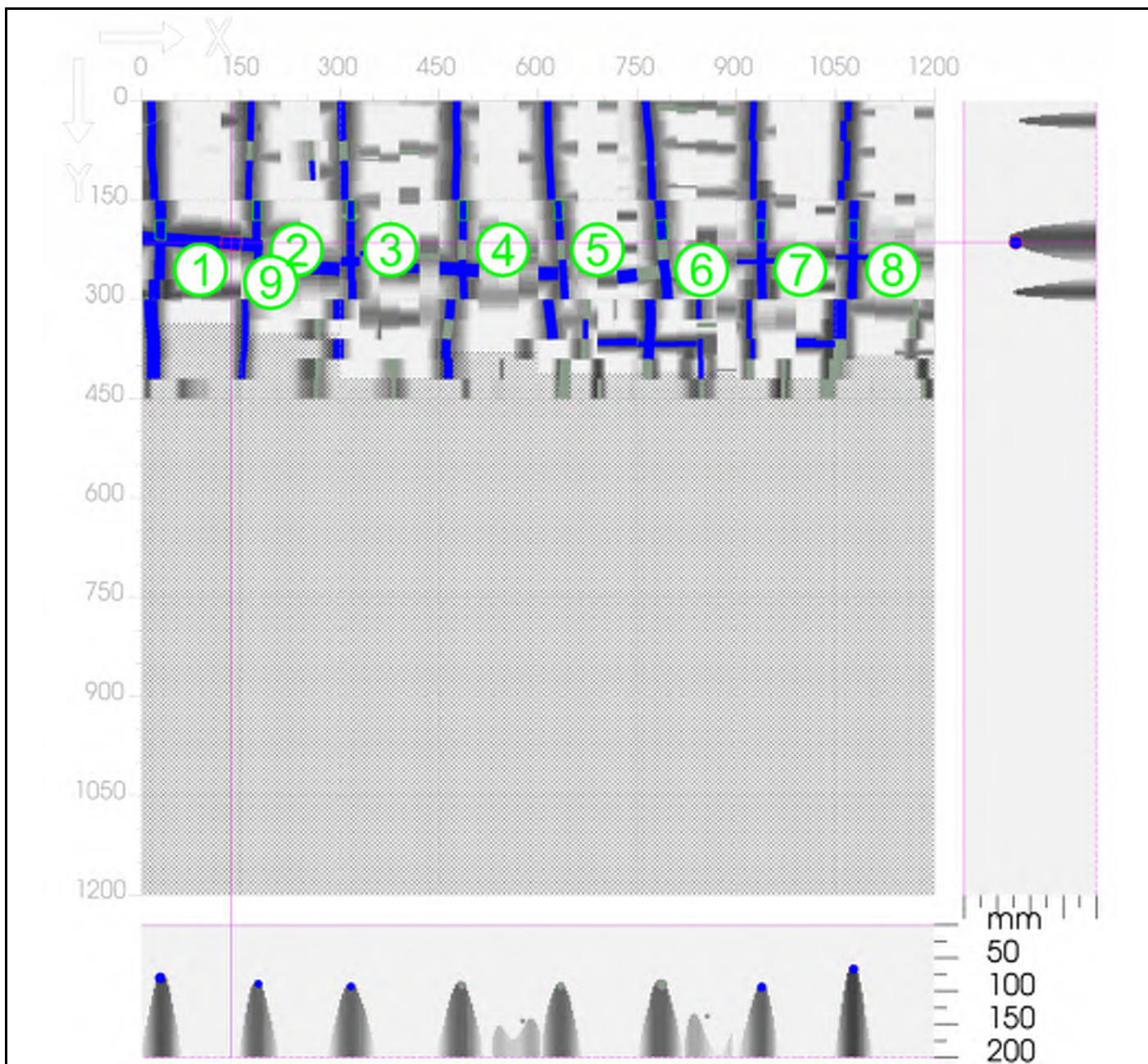
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	47 mm	375 mm	40 mm	20 mm	Vertical	High
2.	192 mm	375 mm	46 mm	20 mm	Vertical	High
3.	646 mm	345 mm	47 mm	20 mm	Vertical	High
4.	787 mm	345 mm	35 mm	8 mm	Vertical	Low
5.	525 mm	105 mm	25 mm	10 mm	Horizontal	High
6.	555 mm	421 mm	39 mm	10 mm	Horizontal	High
7.	525 mm	728 mm	37 mm	12 mm	Horizontal	High
8.	525 mm	1036 mm	39 mm	10 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 53.fscan
Serial number: 227190008
Date / Time: 2019-09-26 22:46:24
Comment: -



x 135 mm y 214 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1 Lower	Object:	B1L-12
User:	B.D		
Comment:	-		

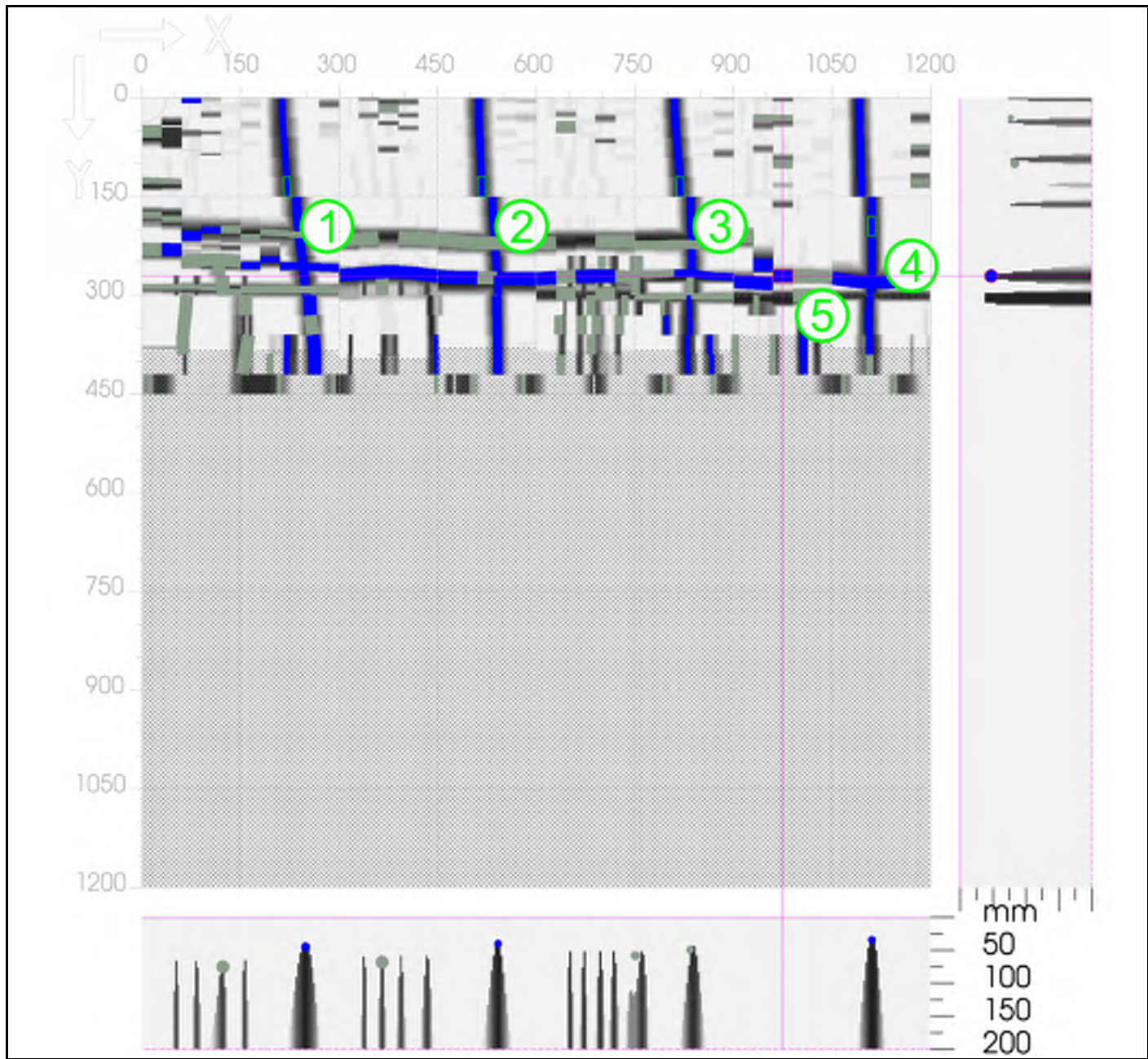
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	29 mm	195 mm	68 mm	16 mm	Vertical	High
2.	174 mm	165 mm	75 mm	12 mm	Vertical	High
3.	317 mm	165 mm	78 mm	12 mm	Vertical	High
4.	486 mm	165 mm	78 mm	12 mm	Vertical	High
5.	630 mm	165 mm	75 mm	12 mm	Vertical	High
6.	787 mm	195 mm	77 mm	16 mm	Vertical	High
7.	937 mm	195 mm	79 mm	14 mm	Vertical	High
8.	1077 mm	195 mm	60 mm	14 mm	Vertical	High
9.	135 mm	214 mm	68 mm	20 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 59.fscan
Serial number: 227190008
Date / Time: 2019-09-26 23:28:10
Comment: -



x 975 mm y 271 mm z 0 mm Thickness: 200 mm
Overlay: - mm

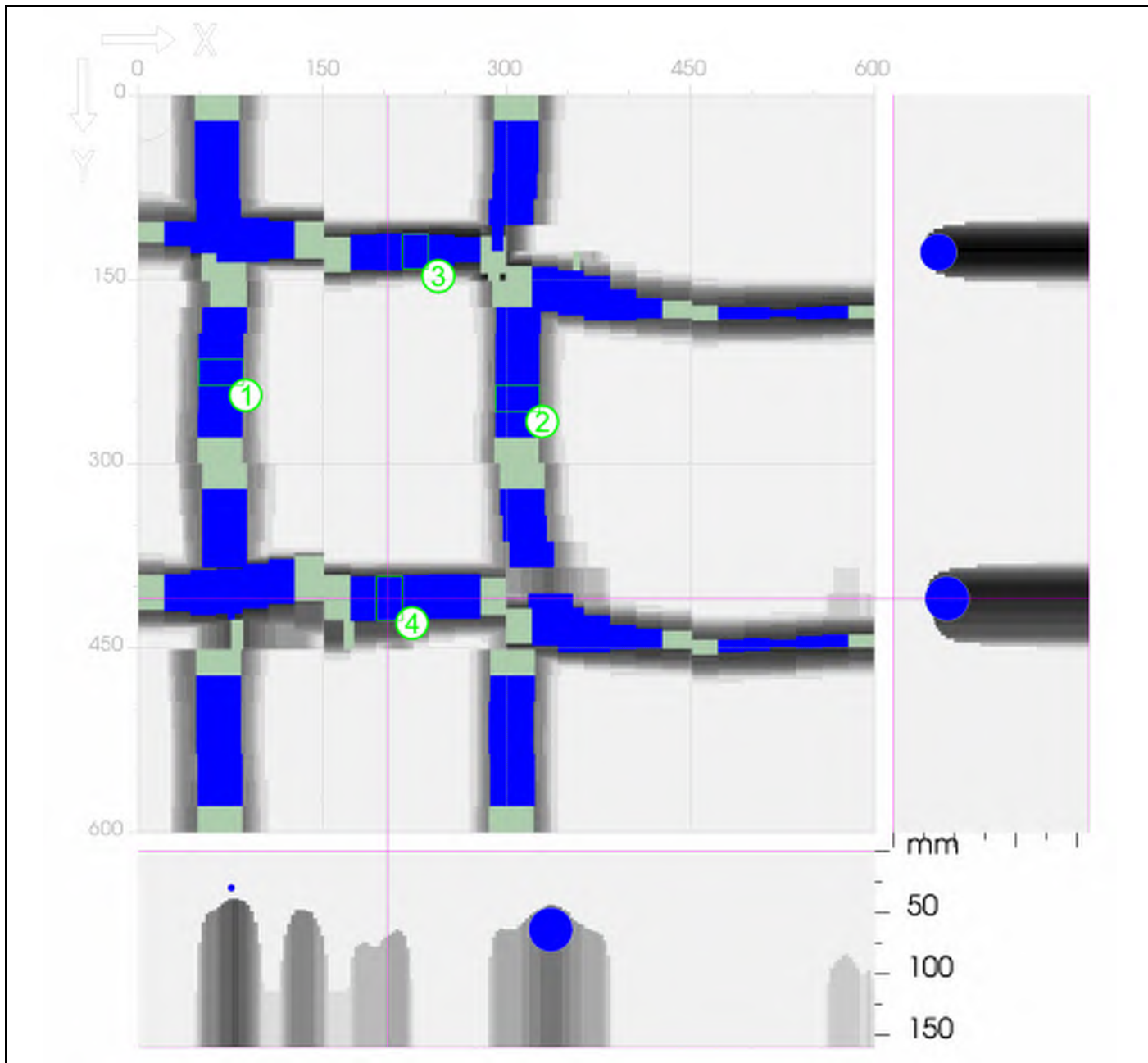
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1 Lower	Object:	B1L-14
User:	B.D		
Comment:	-		
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	222 mm	135 mm	41 mm	10 mm	Vertical	High
2.	518 mm	135 mm	40 mm	12 mm	Vertical	High
3.	820 mm	135 mm	34 mm	12 mm	Vertical	High
4.	1111 mm	195 mm	28 mm	12 mm	Vertical	High
5.	975 mm	271 mm	37 mm	20 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: FS_11418003_A_000599.XFF
Serial number: 11418003
Date / Time: 2000-08-18 10:06:52
Comment: -



x 203 mm y 410 mm z 0 mm Thickness: 160 mm
Overlay: - mm

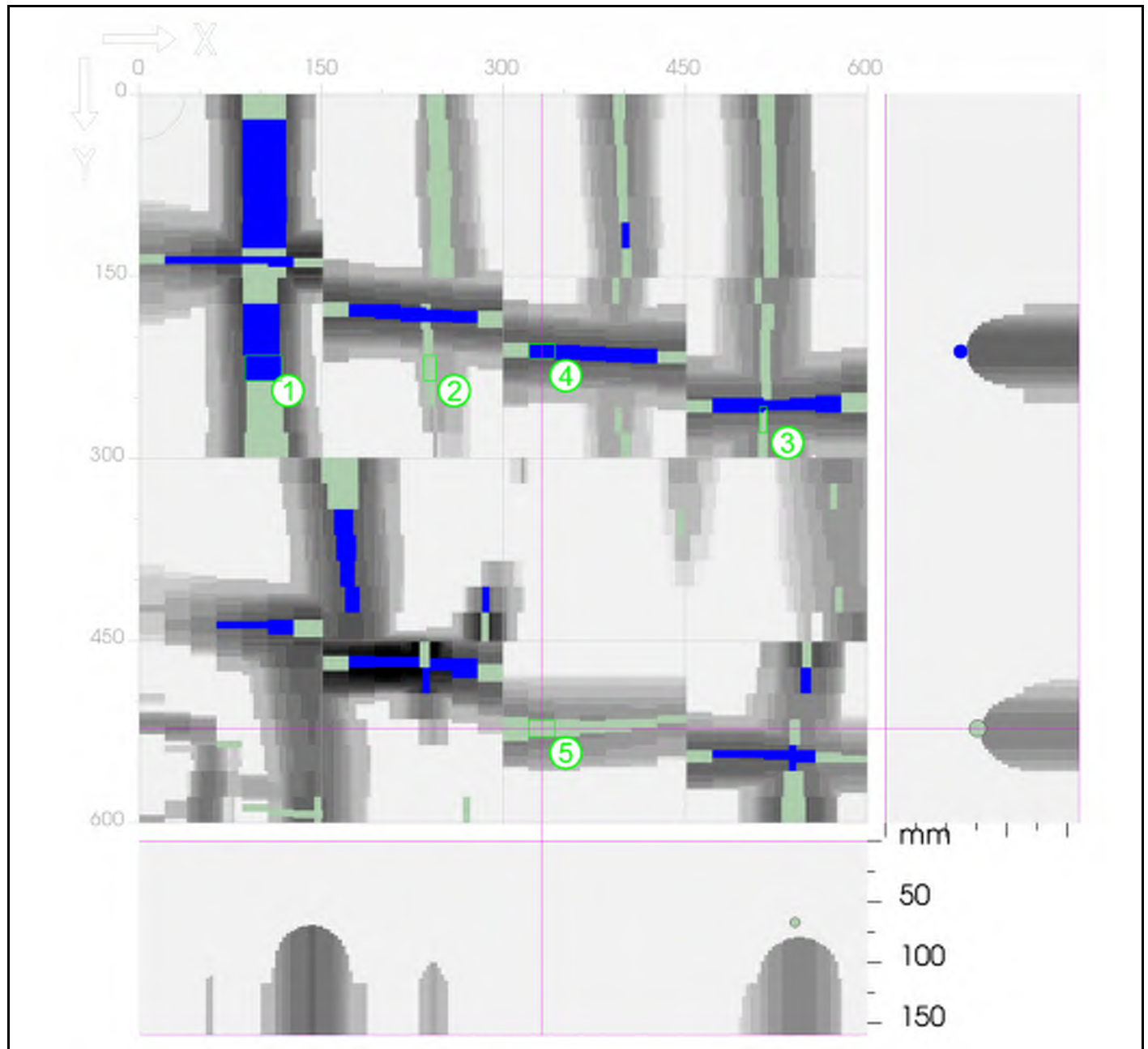
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1 Lower	Object:	B1L-1
User:	B.D		
Comment:	-		

Ø Horizontal:	-	Type:	Auto
Ø Vertical:	-	Type:	Auto

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Status:
1.	67 mm	224 mm	41 mm	36mm	Vertical	Verified

2.	309 mm	246 mm	37 mm	36mm	Vertical	Verified
3.	224 mm	127 mm	20 mm	28mm	Horizontal	Verified
4.	203 mm	410 mm	26 mm	36mm	Horizontal	Verified

Scan File: FS_11418003_A_000604.XFF
Serial number: 11418003
Date / Time: 2000-08-18 11:26:03
Comment: -



x: 331 mm y: 522 mm z: 0 mm Thickness: 160 mm
Overlay: - mm

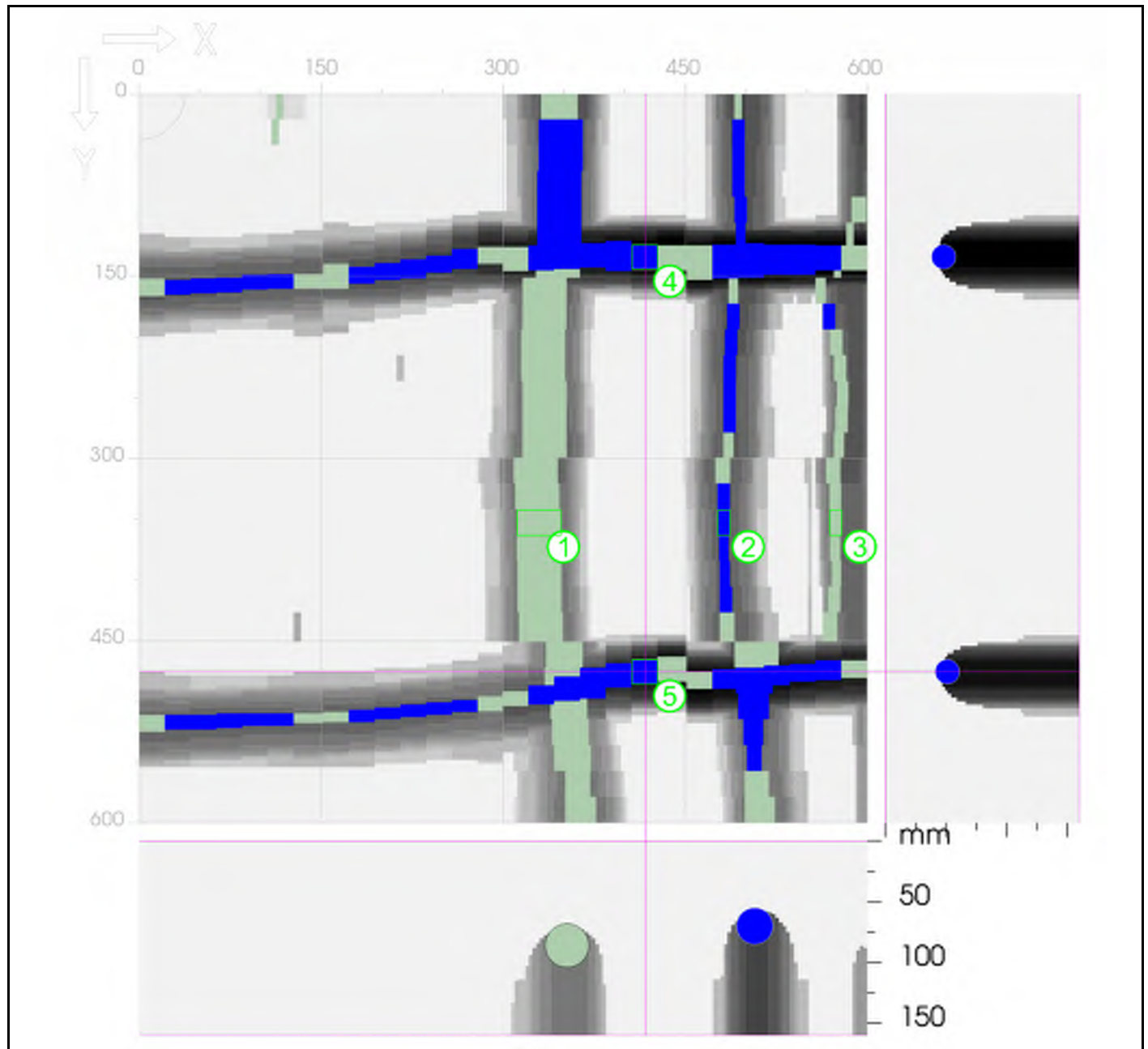
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1 Lower	Object:	B1L-2
User:	B.D		
Comment:	-		

Ø Horizontal:	-	Type:	Auto
Ø Vertical:	-	Type:	Auto

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Status:
1.	102 mm	224 mm	59 mm	30mm	Vertical	Verified

2.	239 mm	224 mm	74 mm	10mm	Vertical	Verified
3.	514 mm	267 mm	60 mm	6mm	Vertical	Verified
4.	331 mm	212 mm	56 mm	12mm	Horizontal	Verified
5.	331 mm	522 mm	69 mm	14mm	Horizontal	Verified

Scan File: FS_11418003_A_000612.XFF
Serial number: 11418003
Date / Time: 2000-08-18 13:05:34
Comment: -



x: 417 mm y: 476 mm z: 0 mm Thickness: 160 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1 Lower	Object:	B1L-3
User:	B.D		
Comment:	-		

Ø Horizontal:	-	Type:	Auto
Ø Vertical:	-	Type:	Auto

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Status:
1.	329 mm	353 mm	63 mm	36mm	Vertical	Verified

2.	482 mm	353 mm	50 mm	10mm	Vertical	Verified
3.	574 mm	353 mm	55 mm	10mm	Vertical	Unverified
4.	417 mm	134 mm	38 mm	20mm	Horizontal	Verified
5.	417 mm	476 mm	41 mm	20mm	Horizontal	Verified

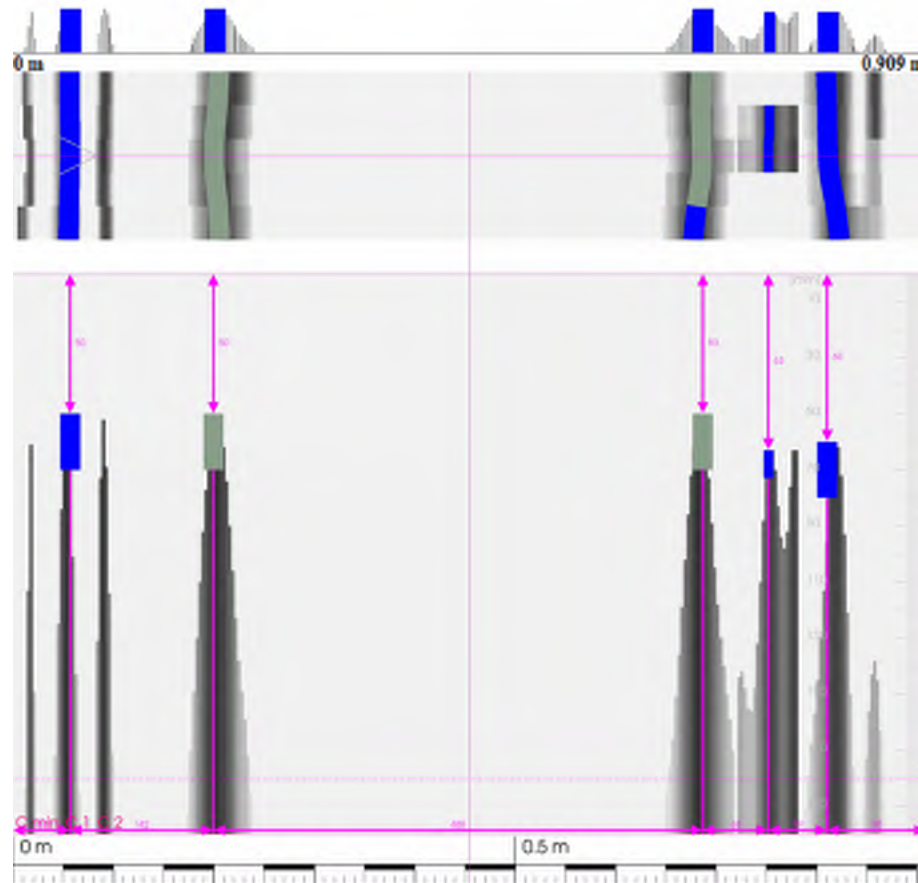
Hilti PROFIS Detection Report

Project information:

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1 Lower	Object:	B1L-4
User:	B.D		
Comment:	-		

Scan information:

Scan File:	35.fscan
Serial number:	227190008
Date / Time:	2019-09-25 22:00:35
Comment:	-



Segment:

Width:	0.909 m	Position:	-
Ø:	14 mm +/- 6 mm	Number of rebars:	5
Detection mode:	Auto		
Overlay:	-		

Crosshair / cross section:

x:	0.455 m	y:	75 mm
z:	0 mm	Thickness:	180 mm

Range:

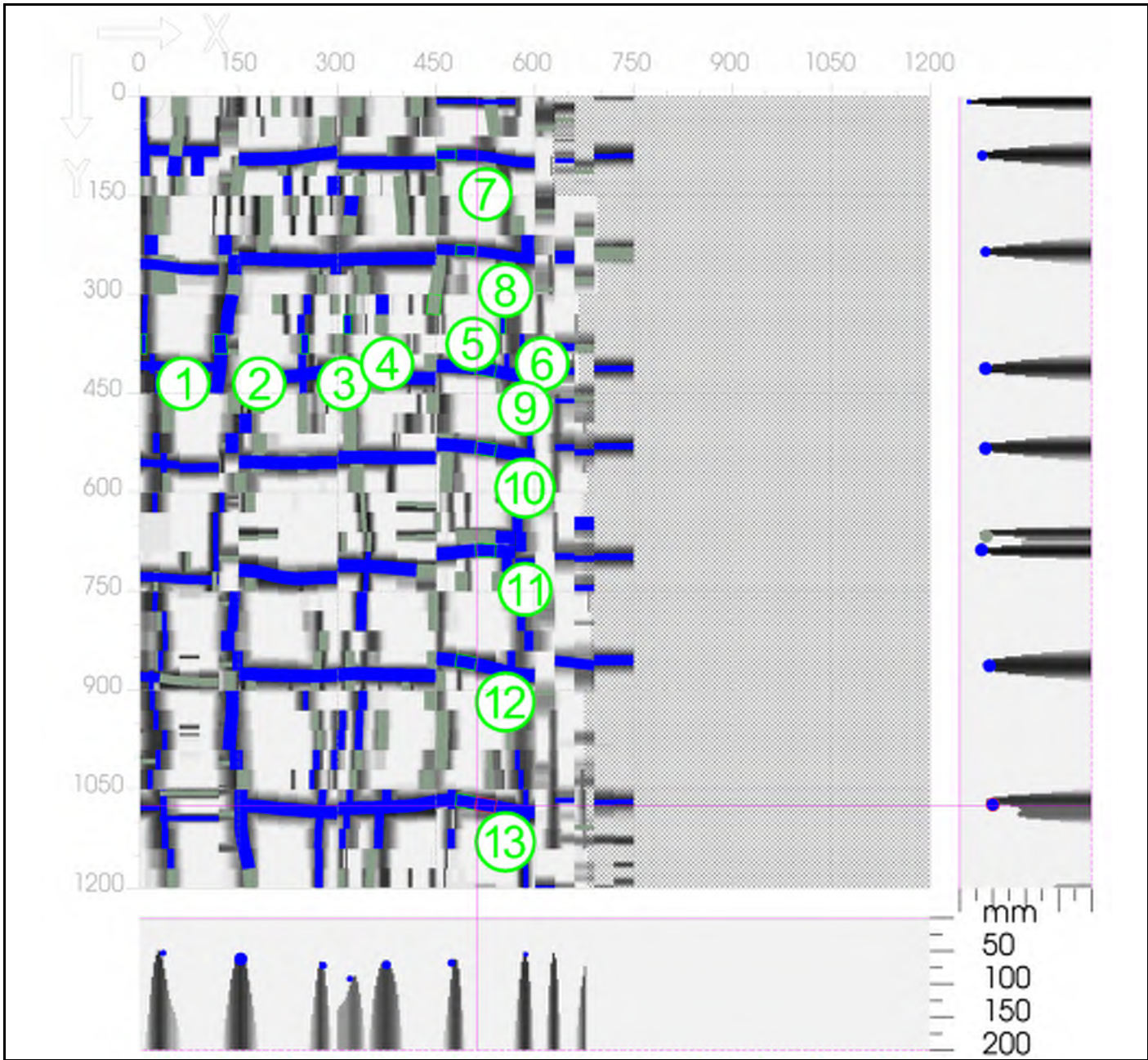
	Cover / Cut-off:	Number of rebars:
Cmin:	200 mm	5
C1:	200 mm	5
C2:	200 mm	5
Cut-off:	< 0 mm, 200 mm >	5

Statistic: Cover

Minimum:	50 mm	Maximum:	63 mm
Mean:	54 mm	Standard deviation:	6 mm
Median:	50 mm		

Hilti PROFIS Detection Report

Scan File: 41.fscan
Serial number: 227190008
Date / Time: 2019-09-25 23:36:00
Comment: -



x 511 mm y 1075 mm z 0 mm Thickness: 200 mm
Overlay: - mm

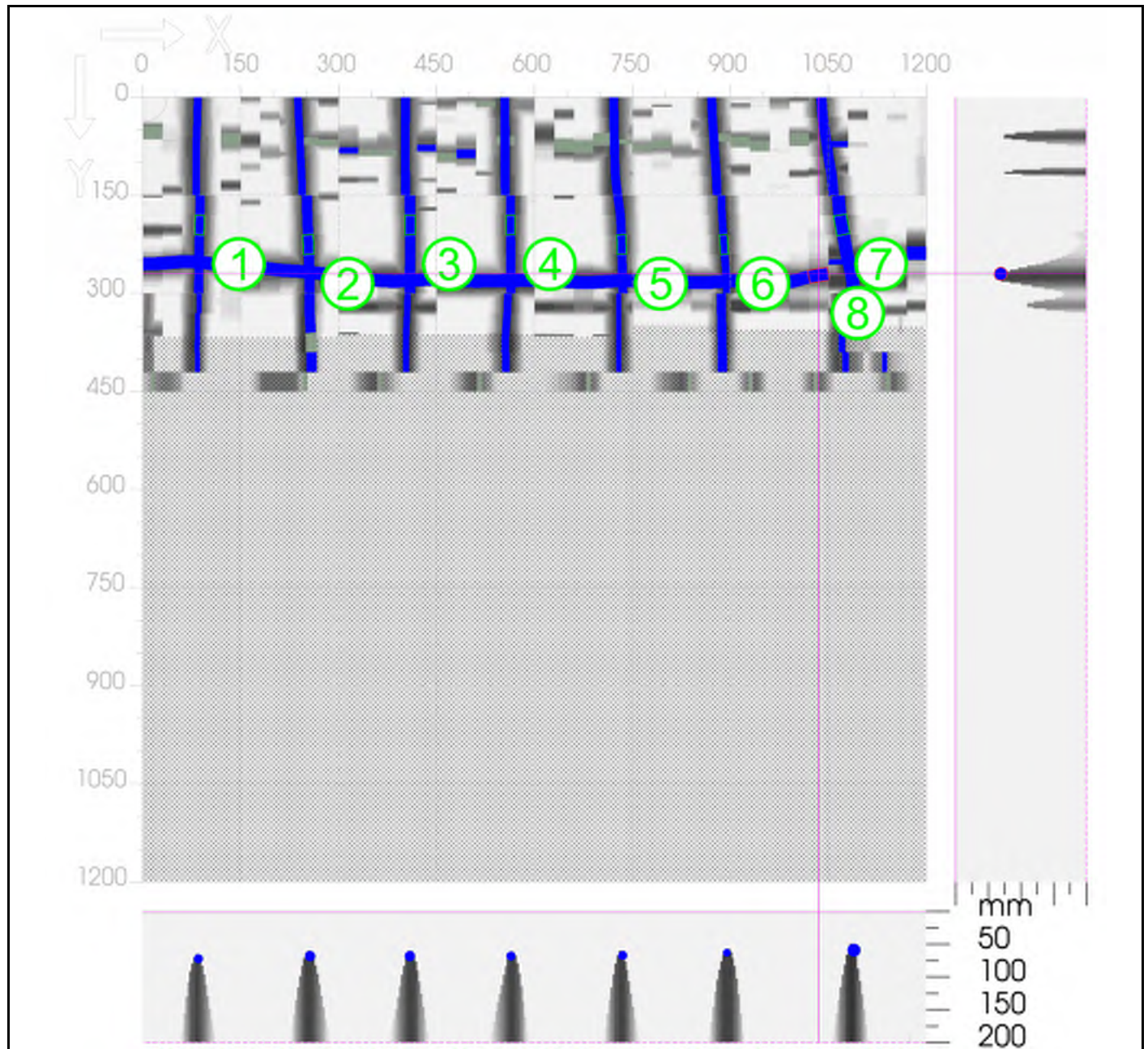
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1 Lower	Object:	B1L-5 Soffit
User:	B.D		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	6 mm	375 mm	39 mm	8 mm	Vertical	High
2.	121 mm	375 mm	42 mm	20 mm	Vertical	High
3.	250 mm	375 mm	98 mm	12 mm	Vertical	High
4.	315 mm	345 mm	53 mm	12 mm	Vertical	High
5.	445 mm	315 mm	60 mm	20 mm	Vertical	Low
6.	551 mm	345 mm	67 mm	8 mm	Vertical	High
7.	465 mm	88 mm	31 mm	16 mm	Horizontal	High
8.	495 mm	234 mm	32 mm	16 mm	Horizontal	High
9.	525 mm	412 mm	29 mm	20 mm	Horizontal	High
10.	525 mm	533 mm	29 mm	20 mm	Horizontal	High
11.	525 mm	687 mm	23 mm	20 mm	Horizontal	High
12.	495 mm	858 mm	36 mm	20 mm	Horizontal	High
13.	495 mm	1069 mm	43 mm	20 mm	Horizontal	High

```
Scan File:          40.fscan
Serial number:      227190008
Date / Time:        2019-09-25 23:29:24
Comment:            -
```



x: 1035 mm y: 270 mm z: 0 mm Thickness: 200 mm
Overlay: - mm

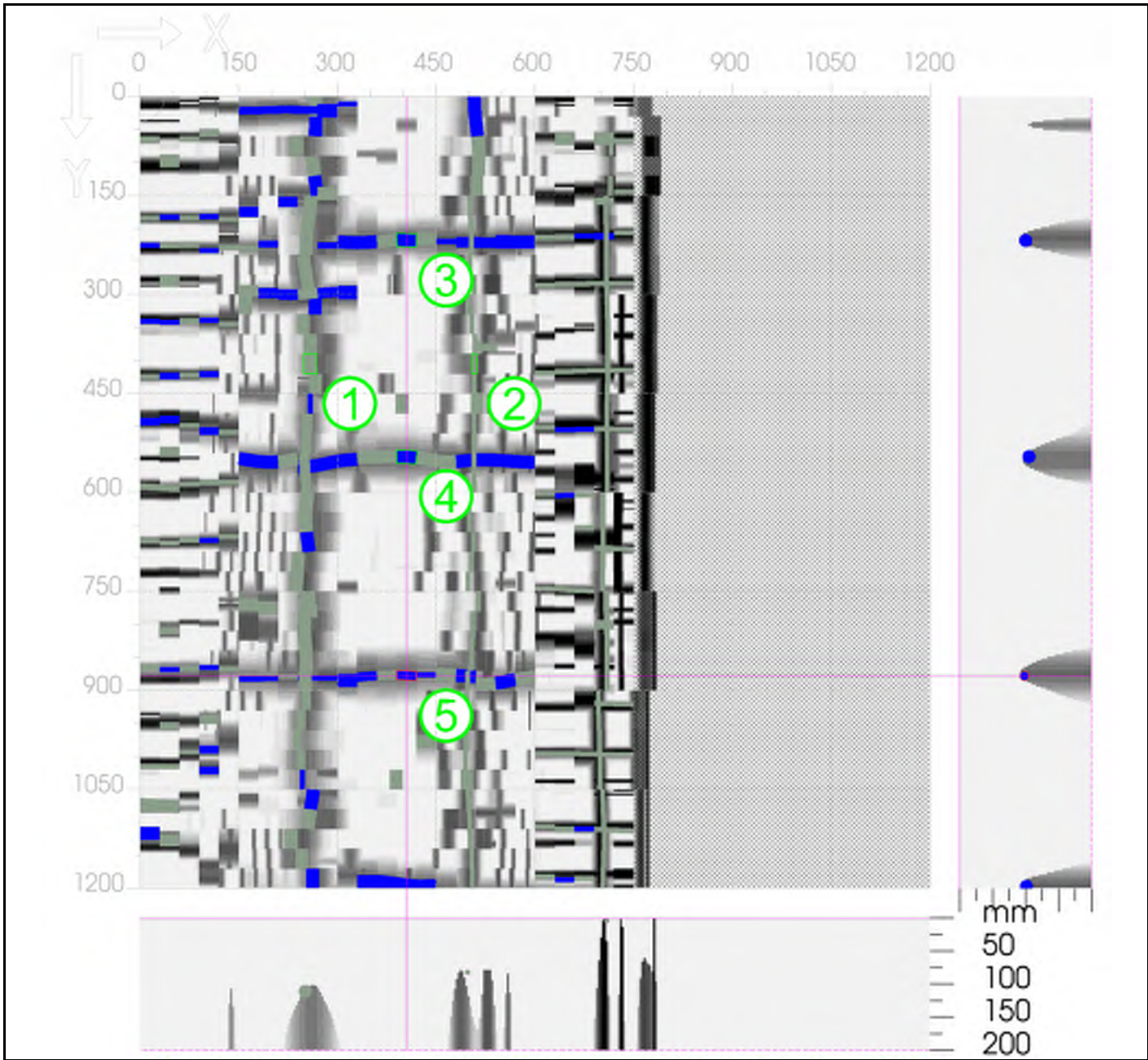
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1 Lower	Object:	B1L-5
User:	B.D		
Comment:	-		
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements: **x:** **y:** **Cover:** **Ø:** **Orientation:** **Quality:**

1.	87 mm	195 mm	66 mm	14 mm	Vertical	High
2.	254 mm	225 mm	61 mm	16 mm	Vertical	High
3.	409 mm	195 mm	60 mm	16 mm	Vertical	High
4.	563 mm	195 mm	61 mm	14 mm	Vertical	High
5.	733 mm	225 mm	59 mm	14 mm	Vertical	High
6.	890 mm	225 mm	56 mm	12 mm	Vertical	High
7.	1071 mm	195 mm	57 mm	20 mm	Vertical	High
8.	1035 mm	270 mm	59 mm	20 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 43.fscan
Serial number: 227190008
Date / Time: 2019-09-25 23:52:14
Comment: -



x 405 mm y 878 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1 Lower	Object:	-B1L-6
User:	B.D		
Comment:	-		

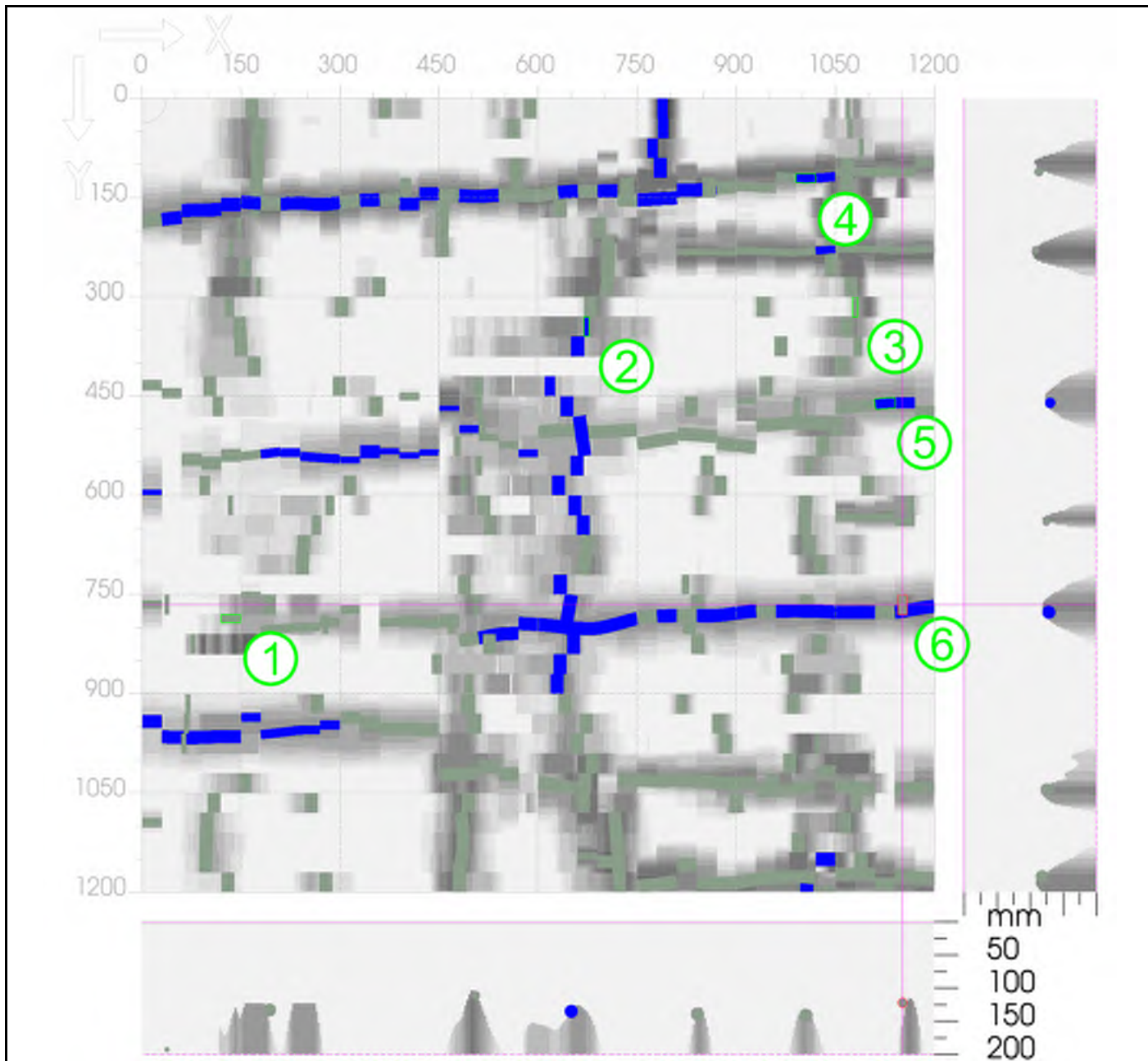
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	259 mm	405 mm	90 mm	20 mm	Vertical	Low
2.	508 mm	405 mm	68 mm	8 mm	Vertical	Low
3.	405 mm	218 mm	90 mm	20 mm	Horizontal	High
4.	405 mm	546 mm	95 mm	20 mm	Horizontal	High
5.	405 mm	878 mm	91 mm	14 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 44.fscan
Serial number: 227190008
Date / Time: 2019-09-26 19:08:44
Comment: -



x 1152 mm y 765 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1 Lower	Object:	B1L-8
User:	B.D		
Comment:	-		

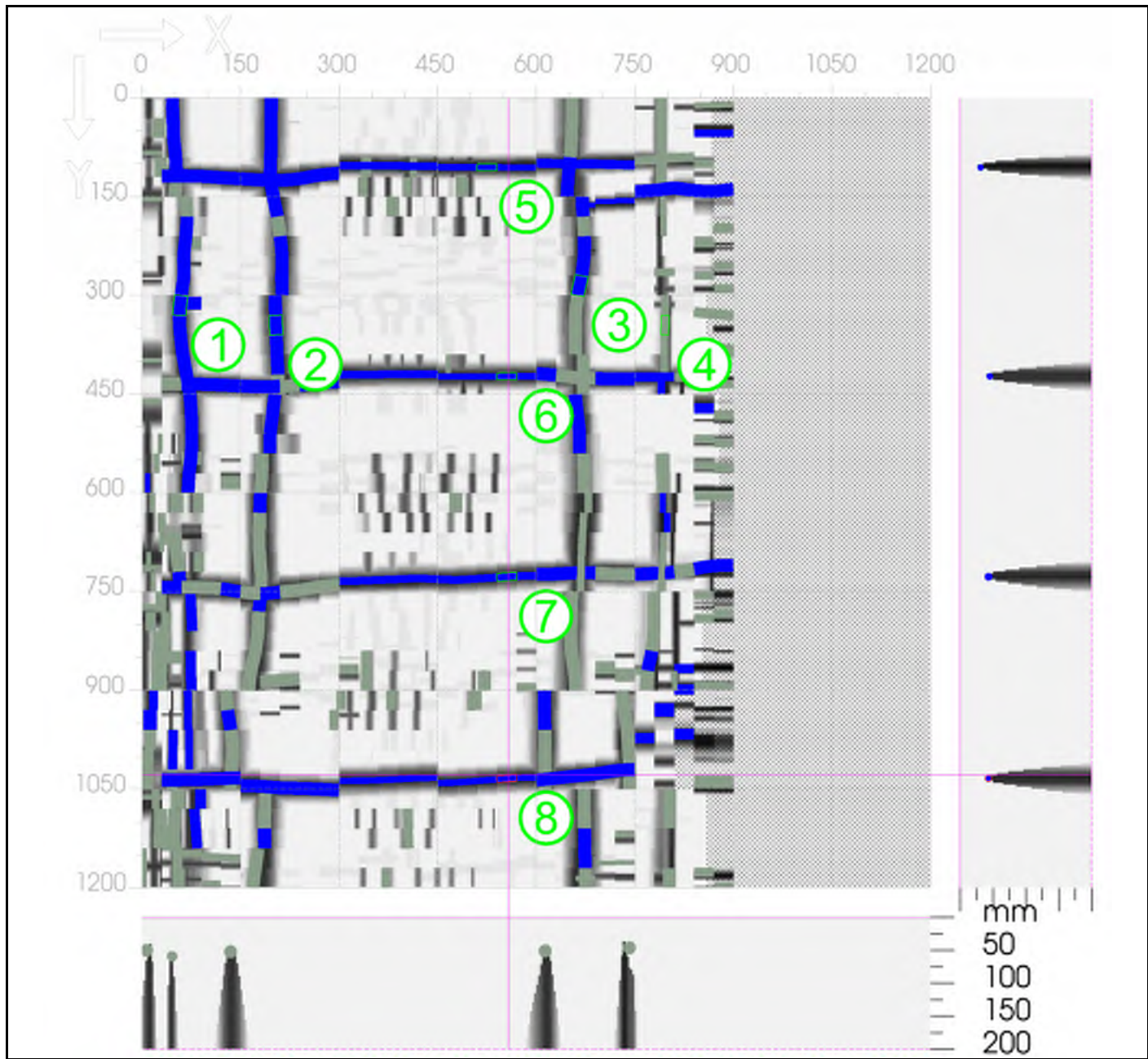
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	135 mm	787 mm	164 mm	12 mm	Horizontal	Low
2.	673 mm	345 mm	110 mm	8 mm	Vertical	High
3.	1080 mm	315 mm	100 mm	8 mm	Vertical	Low
4.	1005 mm	122 mm	101 mm	14 mm	Horizontal	High
5.	1125 mm	460 mm	121 mm	16 mm	Horizontal	High
6.	1152 mm	765 mm	115 mm	14 mm	Vertical	Low

Hilti PROFIS Detection Report

Scan File: 49.fscan
Serial number: 227190008
Date / Time: 2019-09-26 22:13:06
Comment: -



x 557 mm y 1029 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1 Lower	Object:	B1L-11
User:	B.D		
Comment:	-		

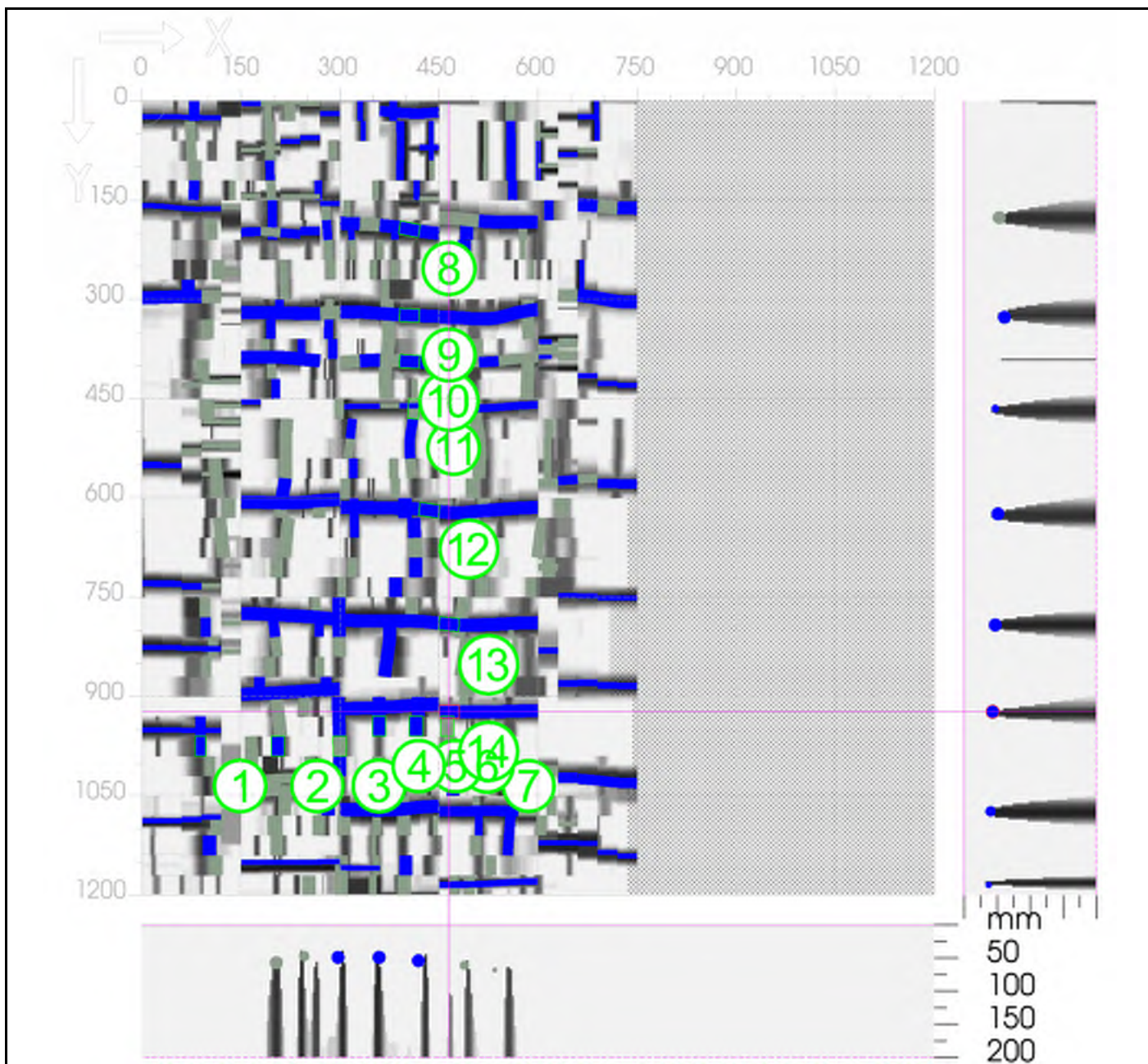
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	56 mm	315 mm	40 mm	20 mm	Vertical	High
2.	204 mm	345 mm	45 mm	20 mm	Vertical	High
3.	666 mm	285 mm	47 mm	20 mm	Vertical	High
4.	796 mm	345 mm	38 mm	12 mm	Vertical	Low
5.	525 mm	105 mm	26 mm	10 mm	Horizontal	High
6.	555 mm	423 mm	40 mm	10 mm	Horizontal	High
7.	555 mm	727 mm	37 mm	12 mm	Horizontal	High
8.	555 mm	1034 mm	38 mm	10 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 52.fscan
Serial number: 227190008
Date / Time: 2019-09-26 22:41:58
Comment: -



x 465 mm y 923 mm z 0 mm Thickness: 200 mm
Overlay: - mm

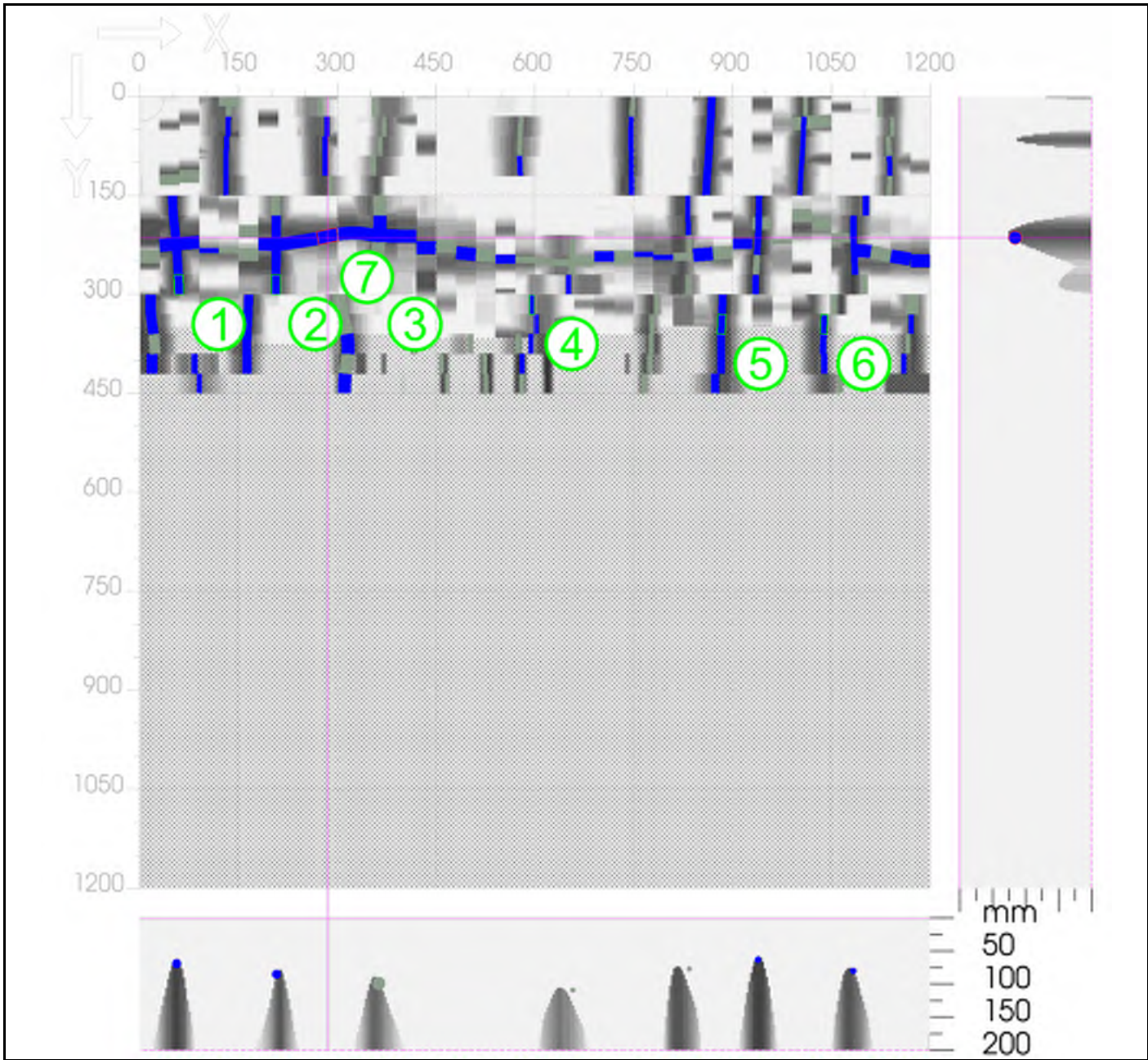
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1 Lower	Object:	B1L-12
User:	B.D		
Comment:	-		
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	89 mm	975 mm	48 mm	16 mm	Vertical	High
2.	206 mm	975 mm	67 mm	20 mm	Vertical	High
3.	299 mm	975 mm	66 mm	20 mm	Vertical	Low
4.	359 mm	945 mm	50 mm	20 mm	Vertical	High
5.	415 mm	945 mm	59 mm	20 mm	Vertical	High
6.	463 mm	945 mm	66 mm	20 mm	Vertical	Low
7.	526 mm	975 mm	67 mm	8 mm	Vertical	Low
8.	405 mm	193 mm	42 mm	20 mm	Horizontal	High
9.	405 mm	324 mm	35 mm	20 mm	Horizontal	High
10.	405 mm	393 mm	47 mm	20 mm	Horizontal	High
11.	412 mm	465 mm	56 mm	16 mm	Vertical	Low
12.	435 mm	617 mm	34 mm	20 mm	Horizontal	High
13.	465 mm	792 mm	37 mm	20 mm	Horizontal	High
14.	465 mm	923 mm	33 mm	20 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 51.fscan
Serial number: 227190008
Date / Time: 2019-09-26 22:34:13
Comment: -



x 285 mm y 214 mm z 0 mm Thickness: 200 mm
Overlay: - mm

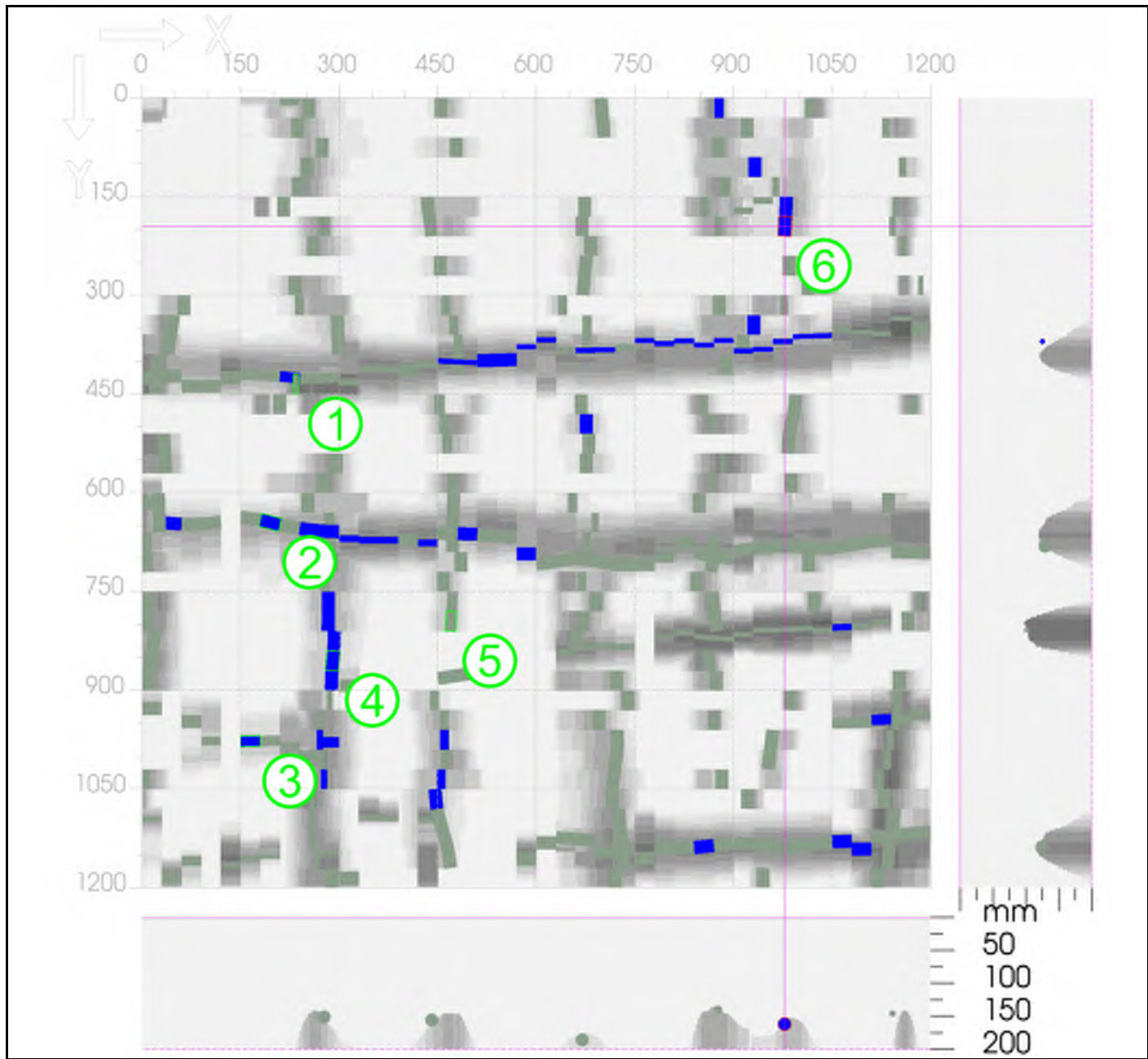
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1 Lower	Object:	B1L-12
User:	B.D		
Comment:	-		
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	60 mm	285 mm	61 mm	14 mm	Vertical	High
2.	207 mm	285 mm	78 mm	14 mm	Vertical	High
3.	358 mm	285 mm	80 mm	20 mm	Vertical	Low
4.	596 mm	315 mm	94 mm	8 mm	Vertical	High
5.	883 mm	345 mm	62 mm	12 mm	Vertical	High
6.	1039 mm	345 mm	83 mm	10 mm	Vertical	High
7.	285 mm	214 mm	74 mm	20 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 54.fscan
Serial number: 227190008
Date / Time: 2019-09-26 22:59:55
Comment: -



x 978 mm y 195 mm z 0 mm Thickness: 200 mm
Overlay: - mm

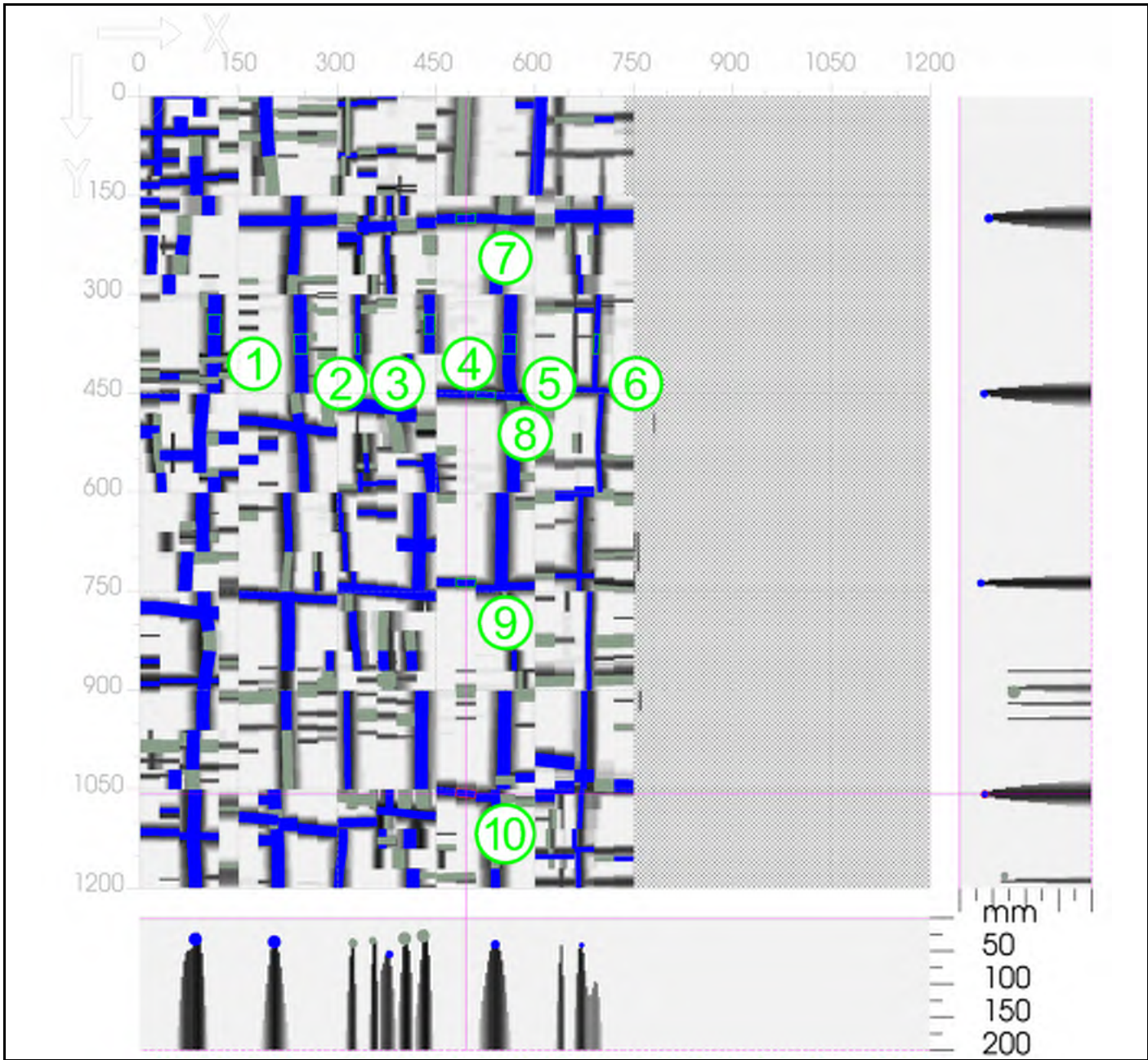
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1 Lower	Object:	B1L-13
User:	B.D		
Comment:	-		
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	234 mm	435 mm	98 mm	8 mm	Vertical	Low
2.	195 mm	645 mm	141 mm	20 mm	Horizontal	High
3.	165 mm	978 mm	162 mm	16 mm	Horizontal	High
4.	290 mm	855 mm	164 mm	20 mm	Vertical	High
5.	469 mm	795 mm	160 mm	16 mm	Vertical	Low
6.	978 mm	195 mm	152 mm	20 mm	Vertical	High

Hilti PROFIS Detection Report

Scan File: 58.fscan
Serial number: 227190008
Date / Time: 2019-09-26 23:25:02
Comment: -



x 495 mm y 1057 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1 Lower	Object:	-B1L-14 Soffit
User:	B.D		
Comment:	-		

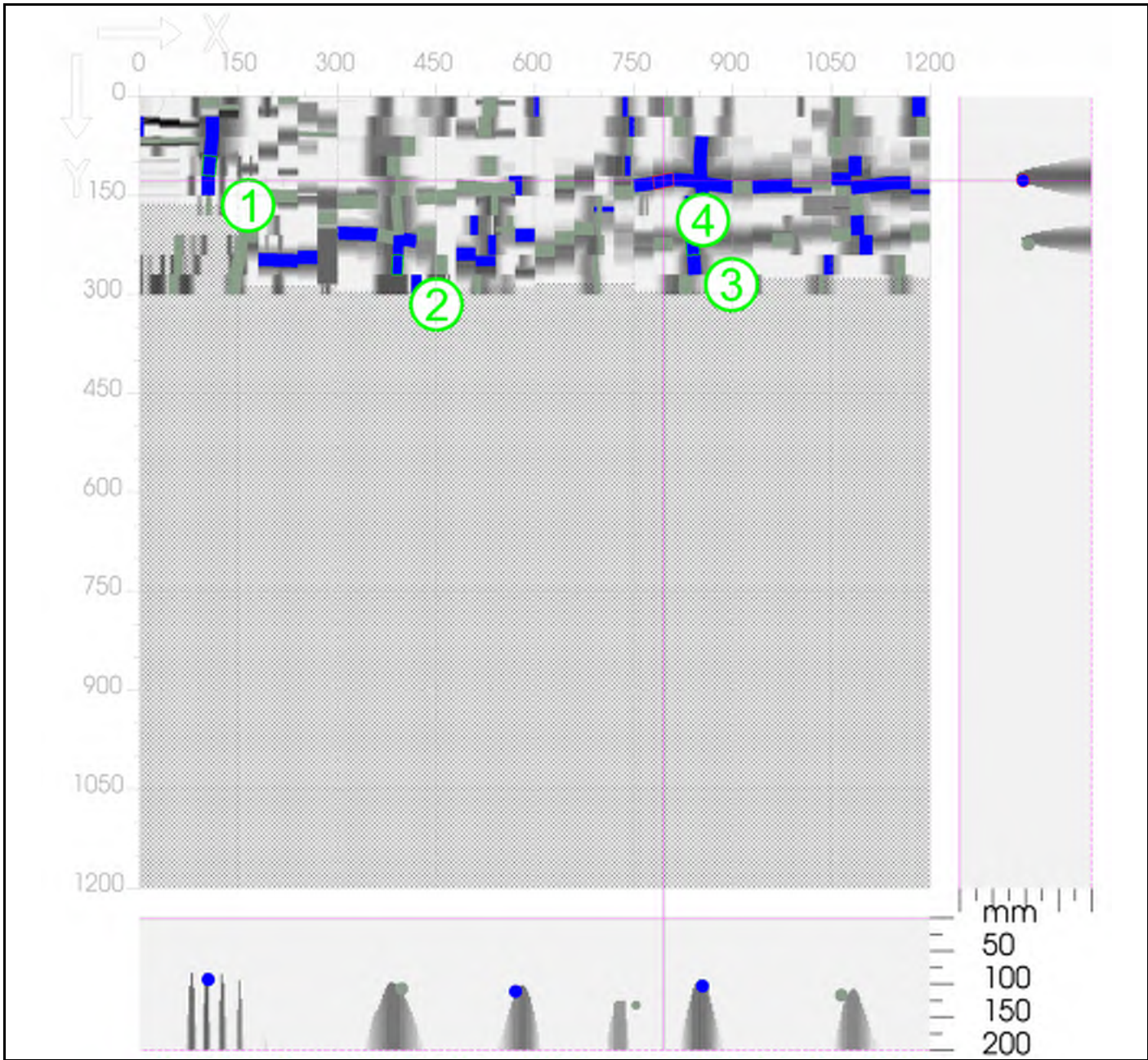
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	113 mm	345 mm	30 mm	20 mm	Vertical	High
2.	245 mm	375 mm	35 mm	20 mm	Vertical	High
3.	331 mm	375 mm	42 mm	8 mm	Vertical	High
4.	440 mm	345 mm	46 mm	16 mm	Vertical	High
5.	561 mm	375 mm	38 mm	20 mm	Vertical	High
6.	693 mm	375 mm	41 mm	8 mm	Vertical	High
7.	495 mm	185 mm	37 mm	14 mm	Horizontal	High
8.	525 mm	451 mm	29 mm	12 mm	Horizontal	High
9.	495 mm	737 mm	26 mm	12 mm	Horizontal	High
10.	495 mm	1057 mm	32 mm	12 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 57.fscan
Serial number: 227190008
Date / Time: 2019-09-26 23:20:30
Comment: -



x 795 mm y 127 mm z 0 mm Thickness: 200 mm
Overlay: - mm

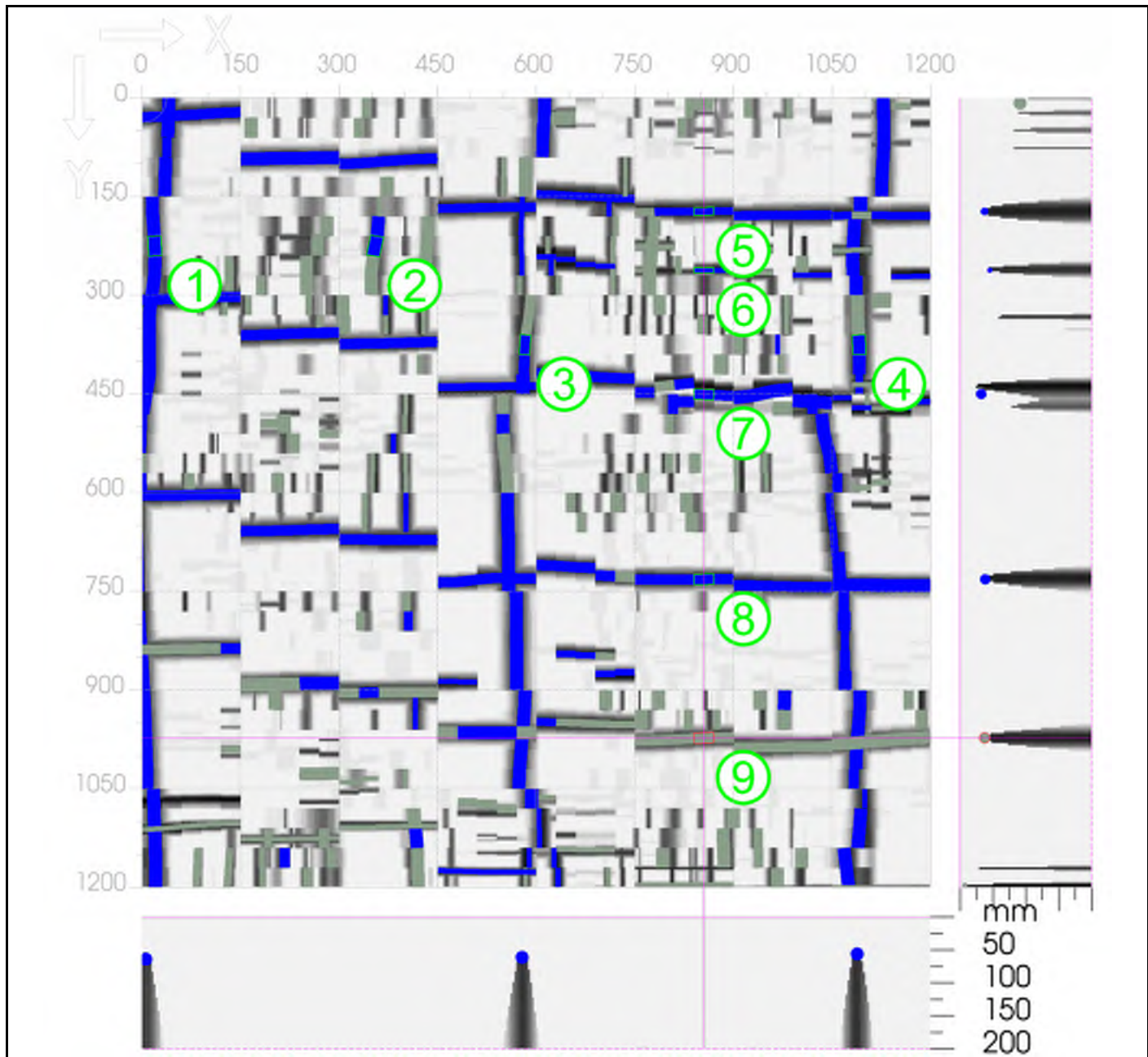
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1 Lower	Object:	B1L-14
User:	B.D		
Comment:	-		
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	104 mm	105 mm	72 mm	20 mm	Vertical	High
2.	390 mm	255 mm	83 mm	16 mm	Vertical	High
3.	838 mm	225 mm	85 mm	20 mm	Vertical	High
4.	795 mm	127 mm	86 mm	20 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 88.fscan
Serial number: 227190008
Date / Time: 2019-10-01 21:06:07
Comment: -



x 855 mm y 973 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1 Lower	Object:	B1L-15
User:	B.D		
Comment:	-		

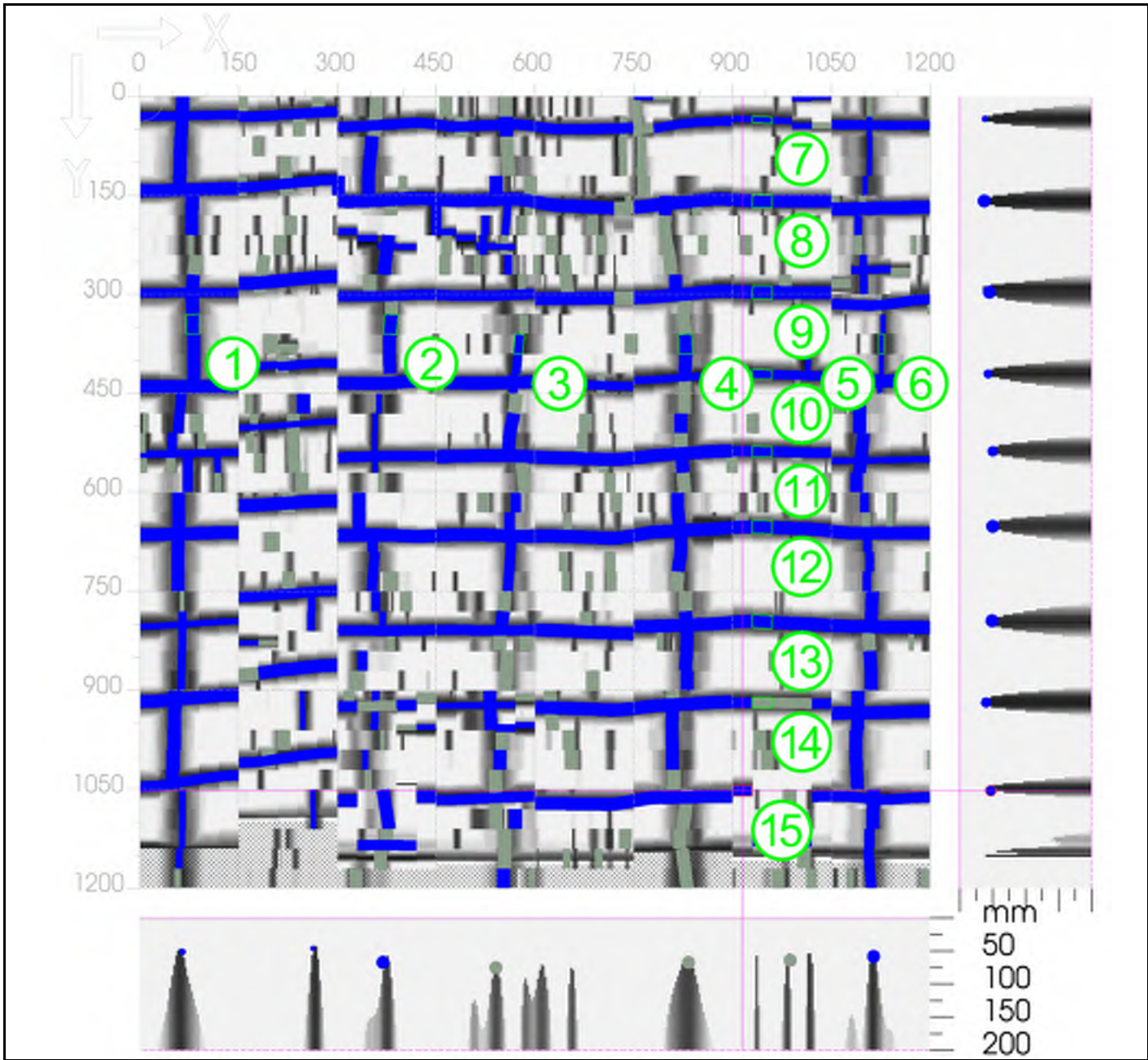
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	20 mm	225 mm	62 mm	20 mm	Vertical	High
2.	355 mm	225 mm	62 mm	20 mm	Vertical	High
3.	582 mm	375 mm	50 mm	16 mm	Vertical	High
4.	1092 mm	375 mm	46 mm	20 mm	Vertical	High
5.	855 mm	172 mm	31 mm	12 mm	Horizontal	High
6.	855 mm	262 mm	41 mm	8 mm	Horizontal	High
7.	855 mm	450 mm	24 mm	16 mm	Horizontal	High
8.	855 mm	732 mm	30 mm	16 mm	Horizontal	High
9.	855 mm	973 mm	29 mm	16 mm	Horizontal	Low

Hilti PROFIS Detection Report

Scan File: 95.fscan
Serial number: 227190008
Date / Time: 2019-10-01 22:37:13
Comment: -



x 915 mm y 1052 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1 Lower	Object:	B1L-16
User:	B.D		
Comment:	-		

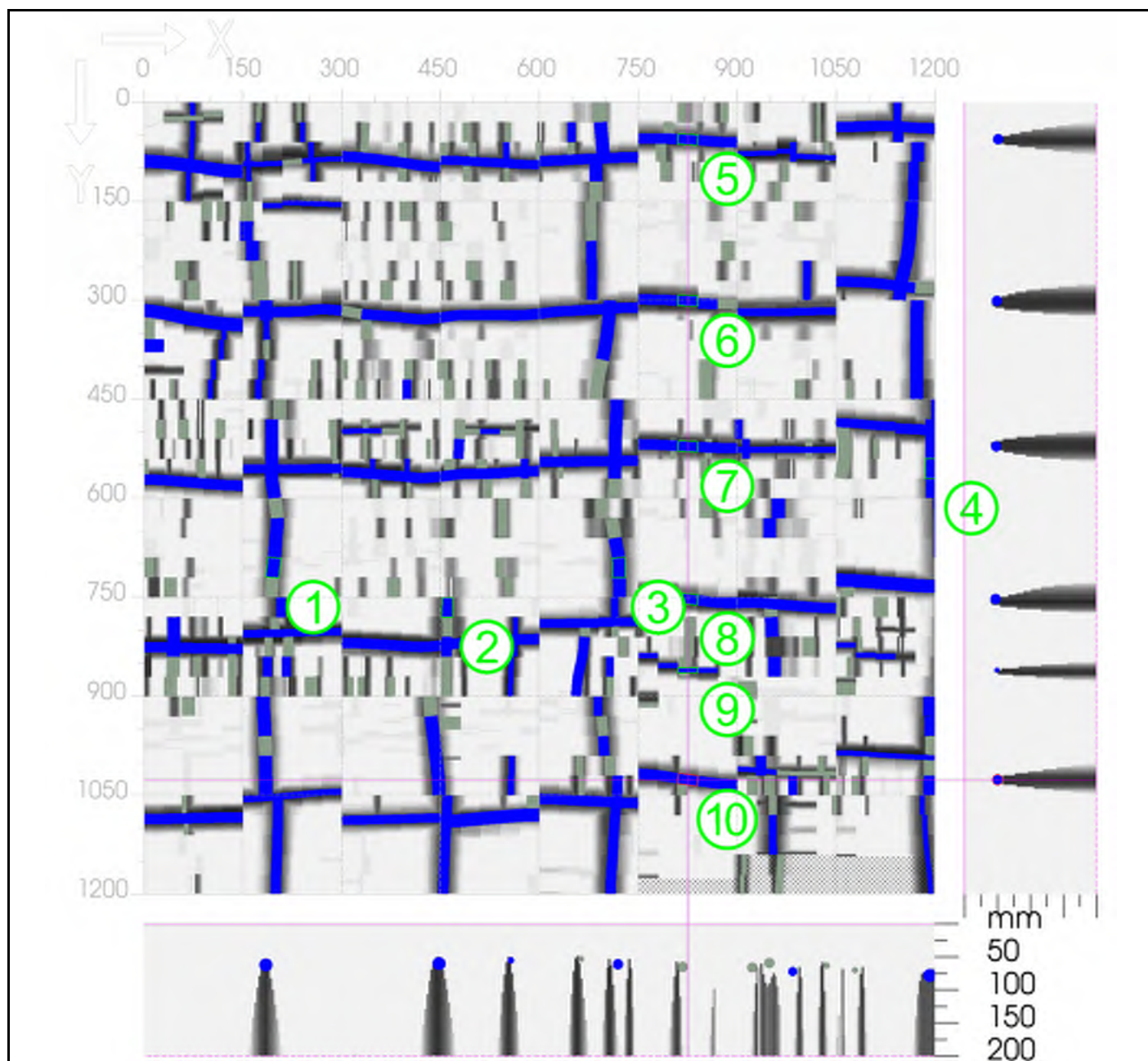
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	81 mm	345 mm	65 mm	20 mm	Vertical	High
2.	382 mm	345 mm	59 mm	20 mm	Vertical	High
3.	577 mm	375 mm	48 mm	14 mm	Vertical	High
4.	831 mm	375 mm	63 mm	20 mm	Vertical	High
5.	1015 mm	375 mm	26 mm	8 mm	Vertical	High
6.	1126 mm	375 mm	50 mm	8 mm	Vertical	High
7.	945 mm	35 mm	33 mm	10 mm	Horizontal	High
8.	945 mm	158 mm	27 mm	20 mm	Horizontal	High
9.	945 mm	297 mm	34 mm	20 mm	Horizontal	High
10.	945 mm	421 mm	35 mm	14 mm	Horizontal	High
11.	945 mm	538 mm	41 mm	16 mm	Horizontal	High
12.	945 mm	652 mm	39 mm	20 mm	Horizontal	High
13.	945 mm	796 mm	38 mm	20 mm	Horizontal	High
14.	945 mm	918 mm	32 mm	16 mm	Horizontal	Low
15.	915 mm	1052 mm	39 mm	16 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 99.fscan
Serial number: 227190008
Date / Time: 2019-10-01 23:35:08
Comment: -



x 825 mm
Overlay: - mm

y 1026 mm

z 0 mm

Thickness: 200 mm

Project name: CIS Tower
Location: Basement Level 1 Lower
User: B.D
Comment: -

Customer: Curtins
Object: B1L-17

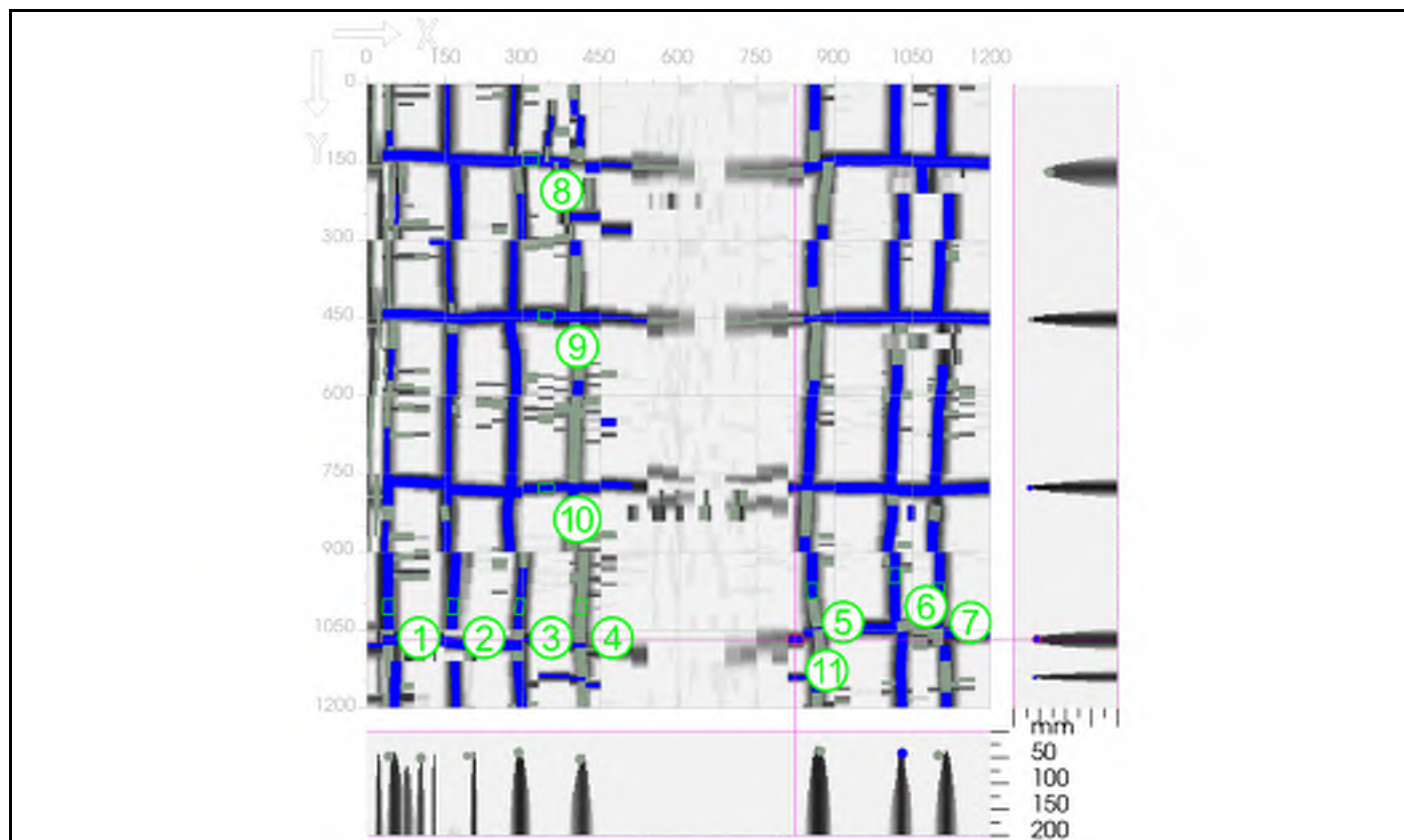
Ø Horizontal: 14 mm +/- 6 mm
Ø Vertical: 14 mm +/- 6 mm
Detection mode: Auto

Type: Input
Type: Input

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
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1.	196 mm	705 mm	48 mm	20 mm	Vertical	High
2.	460 mm	765 mm	51 mm	16 mm	Vertical	High
3.	720 mm	705 mm	60 mm	20 mm	Vertical	High
4.	1195 mm	555 mm	59 mm	20 mm	Vertical	High
5.	825 mm	56 mm	43 mm	16 mm	Horizontal	High
6.	825 mm	301 mm	41 mm	16 mm	Horizontal	High
7.	825 mm	521 mm	40 mm	16 mm	Horizontal	High
8.	825 mm	753 mm	39 mm	16 mm	Horizontal	High
9.	825 mm	860 mm	45 mm	8 mm	Horizontal	High
10.	825 mm	1026 mm	42 mm	16 mm	Horizontal	High

```
Scan File:          70.fscan
Serial number:      227190008
Date / Time:        2019-09-30 19:19:37
Comment:            -
```



x: 825 mm y: 1068 mm z: 0 mm Thickness: 200 mm
Overlay: - mm

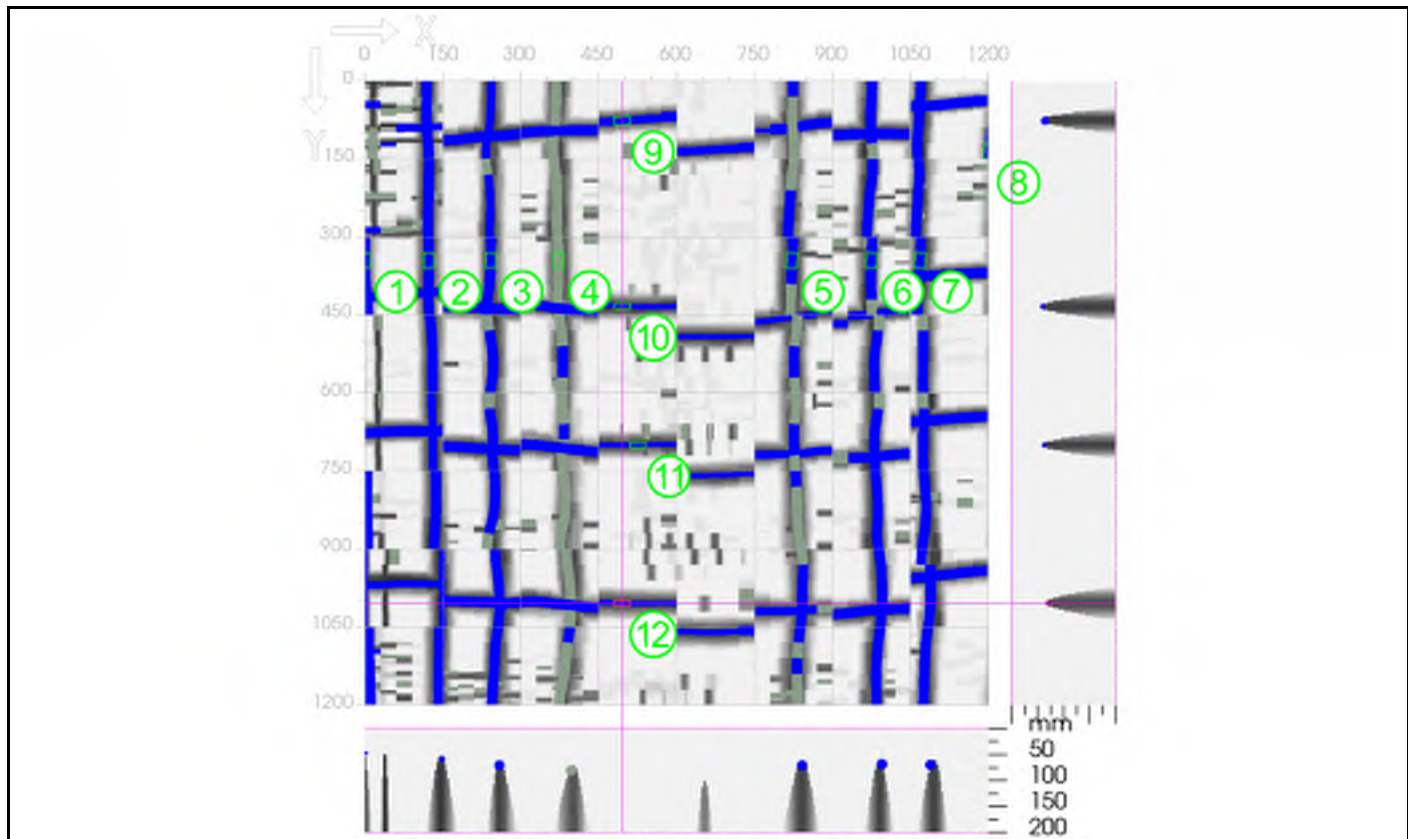
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-1
User:	-		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	40 mm	1005 mm	36 mm	20 mm	Vertical	High
2.	166 mm	1005 mm	38 mm	20 mm	Vertical	High
3.	294 mm	1005 mm	34 mm	16 mm	Vertical	High
4.	412 mm	1005 mm	37 mm	20 mm	Vertical	Low
5.	856 mm	975 mm	35 mm	20 mm	Vertical	High
6.	1016 mm	945 mm	37 mm	20 mm	Vertical	High
7.	1102 mm	975 mm	38 mm	20 mm	Vertical	High
8.	315 mm	146 mm	28 mm	20 mm	Horizontal	High
9.	345 mm	445 mm	27 mm	20 mm	Horizontal	High
10.	345 mm	777 mm	27 mm	16 mm	Horizontal	High
11.	825 mm	1068 mm	36 mm	16 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 69.fscan
Serial number: 227190008
Date / Time: 2019-09-30 19:14:46
Comment: -



x 495 mm y: 1004 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-1
User:	-		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	0 mm	345 mm	57 mm	20 mm	Vertical	High
2.	123 mm	345 mm	54 mm	20 mm	Vertical	High
3.	242 mm	345 mm	58 mm	20 mm	Vertical	High
4.	373 mm	345 mm	62 mm	20 mm	Vertical	Low
5.	822 mm	345 mm	56 mm	20 mm	Vertical	High
6.	975 mm	345 mm	54 mm	20 mm	Vertical	High
7.	1069 mm	345 mm	54 mm	20 mm	Vertical	High
8.	1199 mm	135 mm	47 mm	16 mm	Vertical	High
9.	495 mm	77 mm	56 mm	16 mm	Horizontal	High
10.	495 mm	433 mm	55 mm	10 mm	Horizontal	High
11.	525 mm	700 mm	58 mm	10 mm	Horizontal	High
12.	495 mm	1004 mm	66 mm	10 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 72.fscan
Serial number: 227190008
Date / Time: 2019-09-30 19:32:51
Comment: -



x 555 mm y: 1022 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-2
User:	-		
Comment:	-		

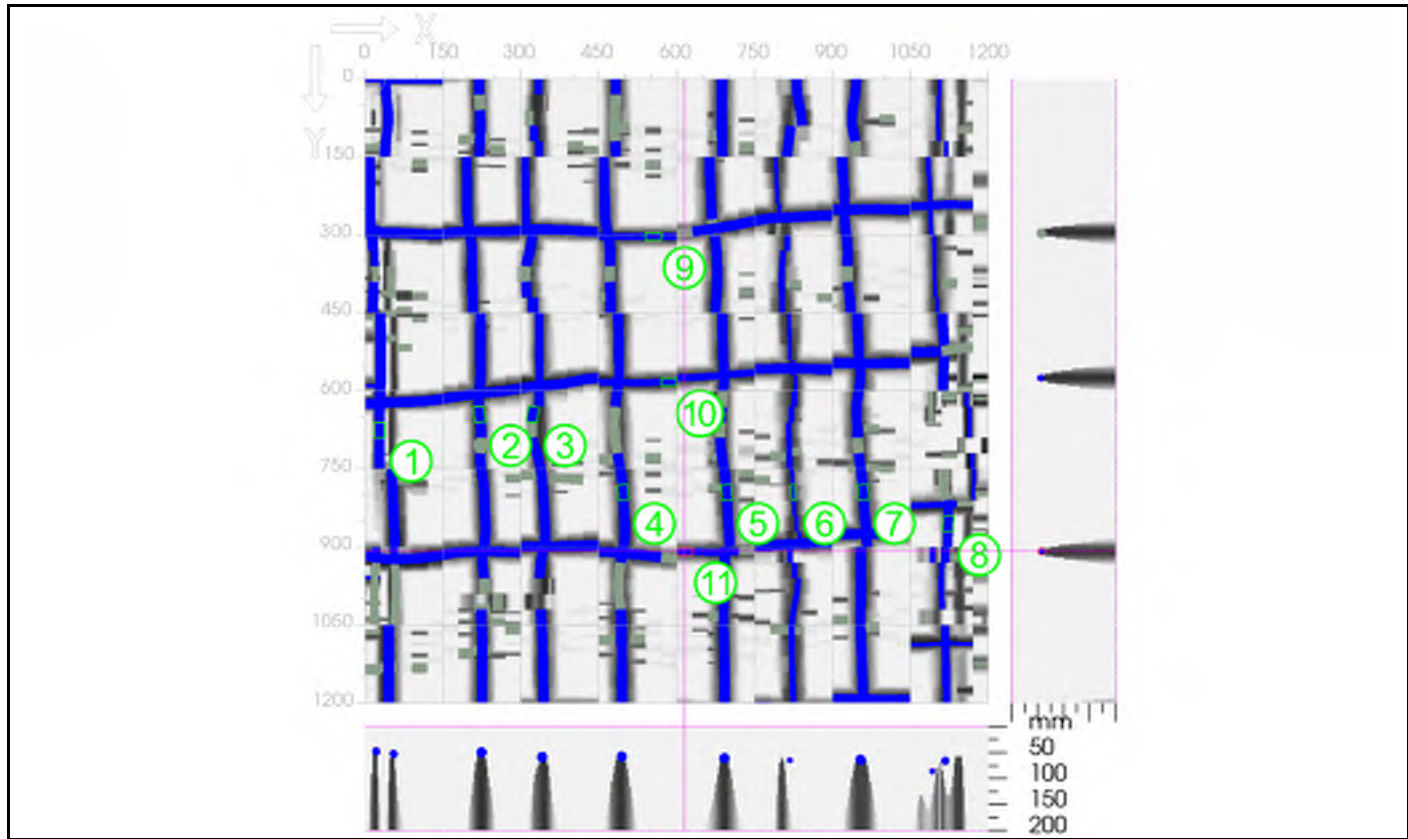
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	7 mm	645 mm	32 mm	20 mm	Vertical	High
2.	176 mm	645 mm	29 mm	20 mm	Vertical	High
3.	304 mm	615 mm	35 mm	20 mm	Vertical	High
4.	446 mm	585 mm	34 mm	20 mm	Vertical	High
5.	629 mm	645 mm	42 mm	20 mm	Vertical	High
6.	783 mm	645 mm	43 mm	20 mm	Vertical	High
7.	896 mm	675 mm	44 mm	20 mm	Vertical	High
8.	1084 mm	585 mm	52 mm	20 mm	Vertical	High
9.	525 mm	60 mm	31 mm	20 mm	Horizontal	High
10.	555 mm	408 mm	22 mm	20 mm	Horizontal	High
11.	555 mm	721 mm	25 mm	20 mm	Horizontal	High
12.	555 mm	1022 mm	47 mm	20 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File:
Serial number:
Date / Time:
Comment:

71.fscan
227190008
2019-09-30 19:28:15
-



x 615 mm

y 909 mm

z 0 mm

Thickness: 200 mm

Overlay: - mm

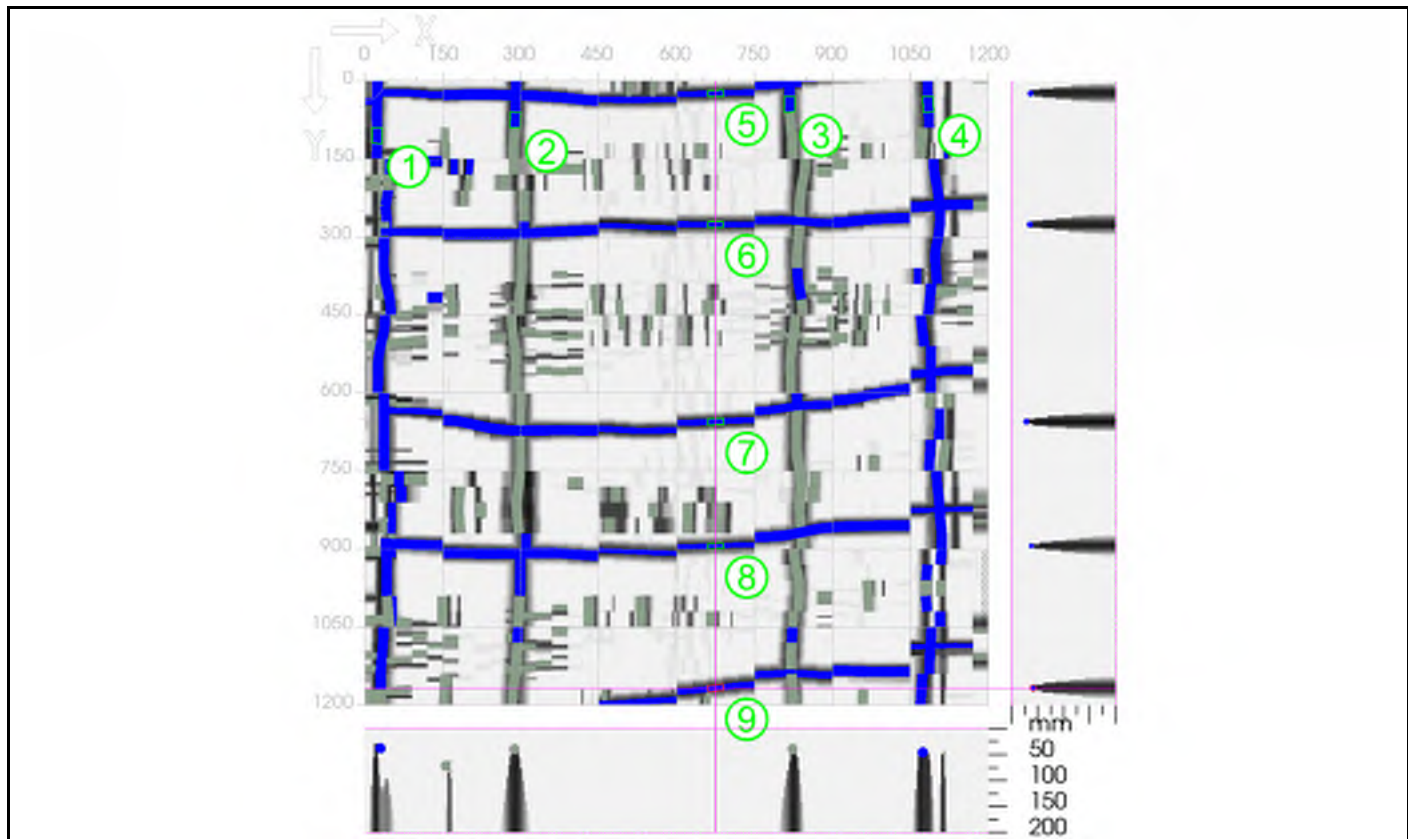
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-2
User:	-		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	29 mm	675 mm	43 mm	20 mm	Vertical	High
2.	220 mm	645 mm	38 mm	20 mm	Vertical	High
3.	325 mm	645 mm	45 mm	20 mm	Vertical	High
4.	497 mm	795 mm	47 mm	20 mm	Vertical	High
5.	696 mm	795 mm	52 mm	20 mm	Vertical	High
6.	825 mm	795 mm	56 mm	8 mm	Vertical	High
7.	959 mm	795 mm	55 mm	20 mm	Vertical	High
8.	1122 mm	855 mm	56 mm	20 mm	Vertical	High
9.	555 mm	303 mm	43 mm	14 mm	Horizontal	High
10.	585 mm	583 mm	49 mm	14 mm	Horizontal	High
11.	615 mm	909 mm	51 mm	14 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 74.fscan
Serial number: 227190008
Date / Time: 2019-09-30 20:14:56
Comment: -



x 675 mm y: 1167 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-3
User:	-		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	24 mm	105 mm	27 mm	20 mm	Vertical	High
2.	289 mm	75 mm	31 mm	20 mm	Vertical	High
3.	817 mm	45 mm	38 mm	20 mm	Vertical	High
4.	1084 mm	45 mm	43 mm	20 mm	Vertical	High
5.	675 mm	24 mm	30 mm	12 mm	Horizontal	High
6.	675 mm	276 mm	29 mm	12 mm	Horizontal	High
7.	675 mm	655 mm	22 mm	12 mm	Horizontal	High
8.	675 mm	894 mm	33 mm	10 mm	Horizontal	High
9.	675 mm	1167 mm	35 mm	12 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 73.fscan
Serial number: 227190008
Date / Time: 2019-09-30 20:11:06
Comment: -



x: 705 mm y: 1082 mm z: 0 mm Thickness: 200 mm
Overlay: - mm

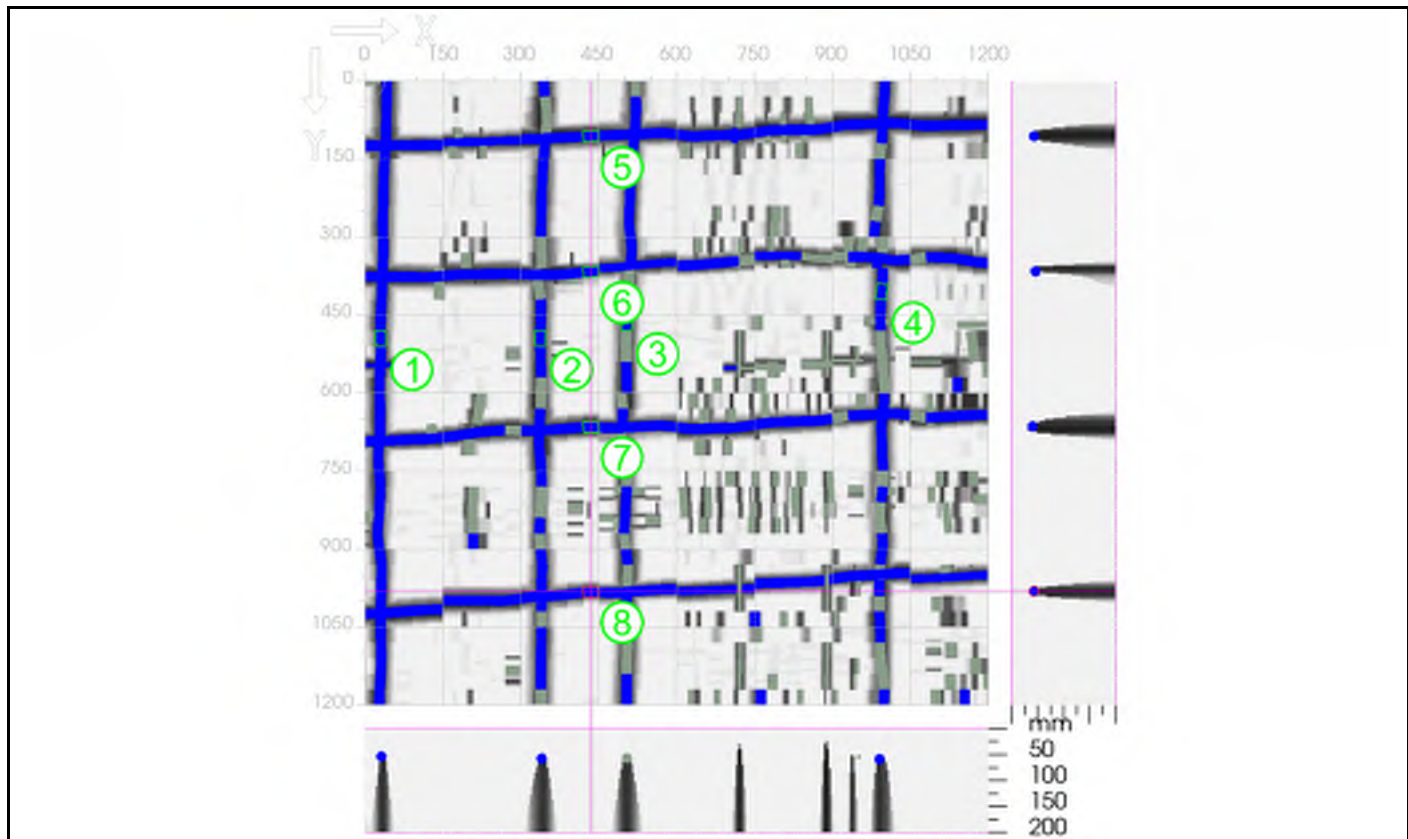
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-3
User:	-		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	28 mm	885 mm	47 mm	20 mm	Vertical	High
2.	296 mm	885 mm	53 mm	20 mm	Vertical	High
3.	822 mm	855 mm	52 mm	20 mm	Vertical	High
4.	1092 mm	885 mm	57 mm	20 mm	Vertical	High
5.	615 mm	219 mm	54 mm	12 mm	Horizontal	High
6.	645 mm	516 mm	68 mm	8 mm	Horizontal	High
7.	675 mm	772 mm	55 mm	10 mm	Horizontal	High
8.	705 mm	1082 mm	53 mm	10 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 75.fscan
Serial number: 227190008
Date / Time: 2019-09-30 20:57:28
Comment: -



x 435 mm y: 981 mm z 0 mm Thickness: 200 mm
Overlay: - mm

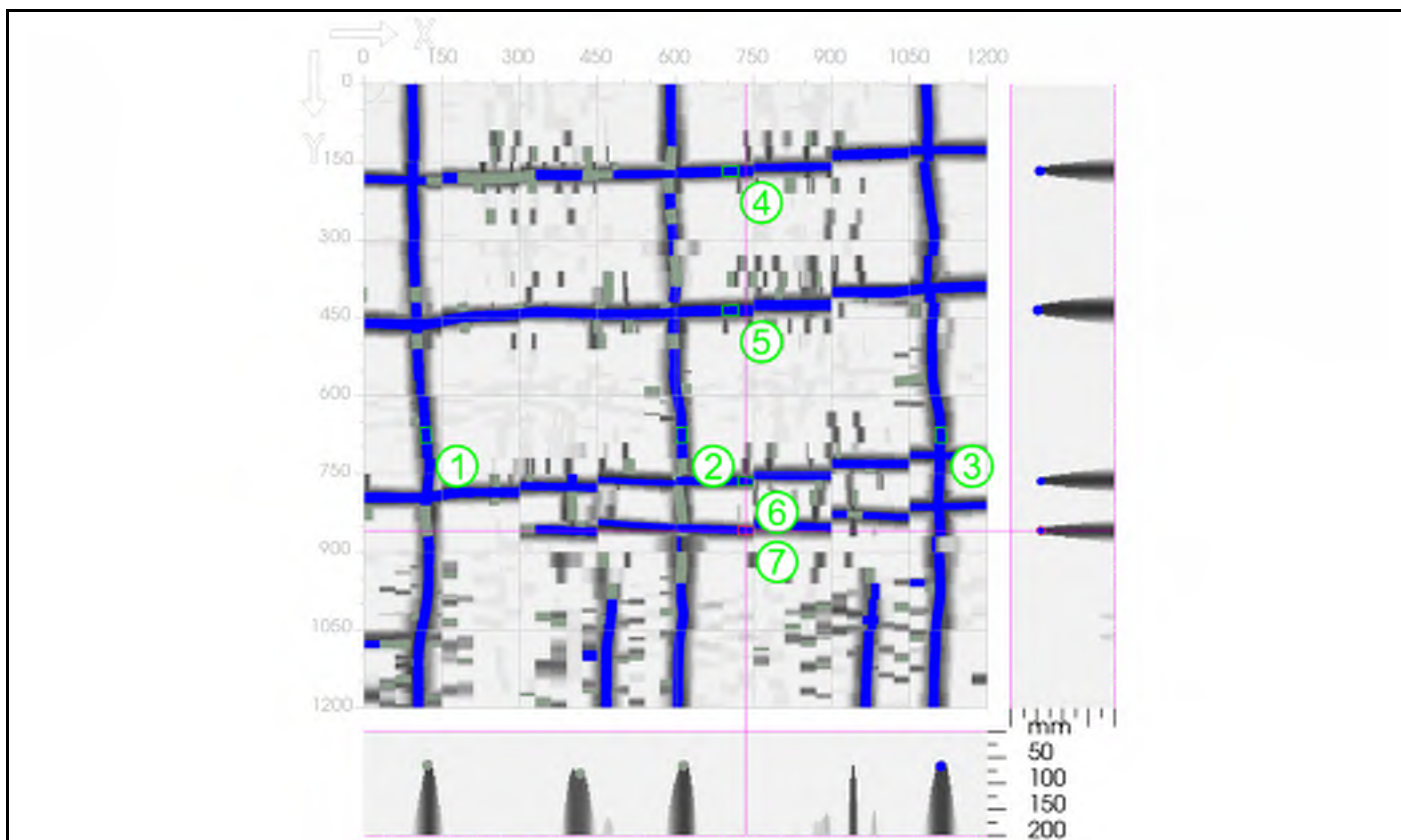
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-4
User:	-		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	30 mm	495 mm	46 mm	20 mm	Vertical	High
2.	338 mm	495 mm	48 mm	20 mm	Vertical	High
3.	503 mm	465 mm	47 mm	20 mm	Vertical	High
4.	995 mm	405 mm	43 mm	20 mm	Vertical	High
5.	435 mm	106 mm	33 mm	20 mm	Horizontal	High
6.	435 mm	366 mm	36 mm	20 mm	Horizontal	High
7.	435 mm	664 mm	30 mm	20 mm	Horizontal	High
8.	435 mm	981 mm	33 mm	20 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 76.fscan
Serial number: 227190008
Date / Time: 2019-09-30 20:38:33
Comment: -



x 735 mm y 859 mm z 0 mm Thickness: 200 mm
Overlay: - mm

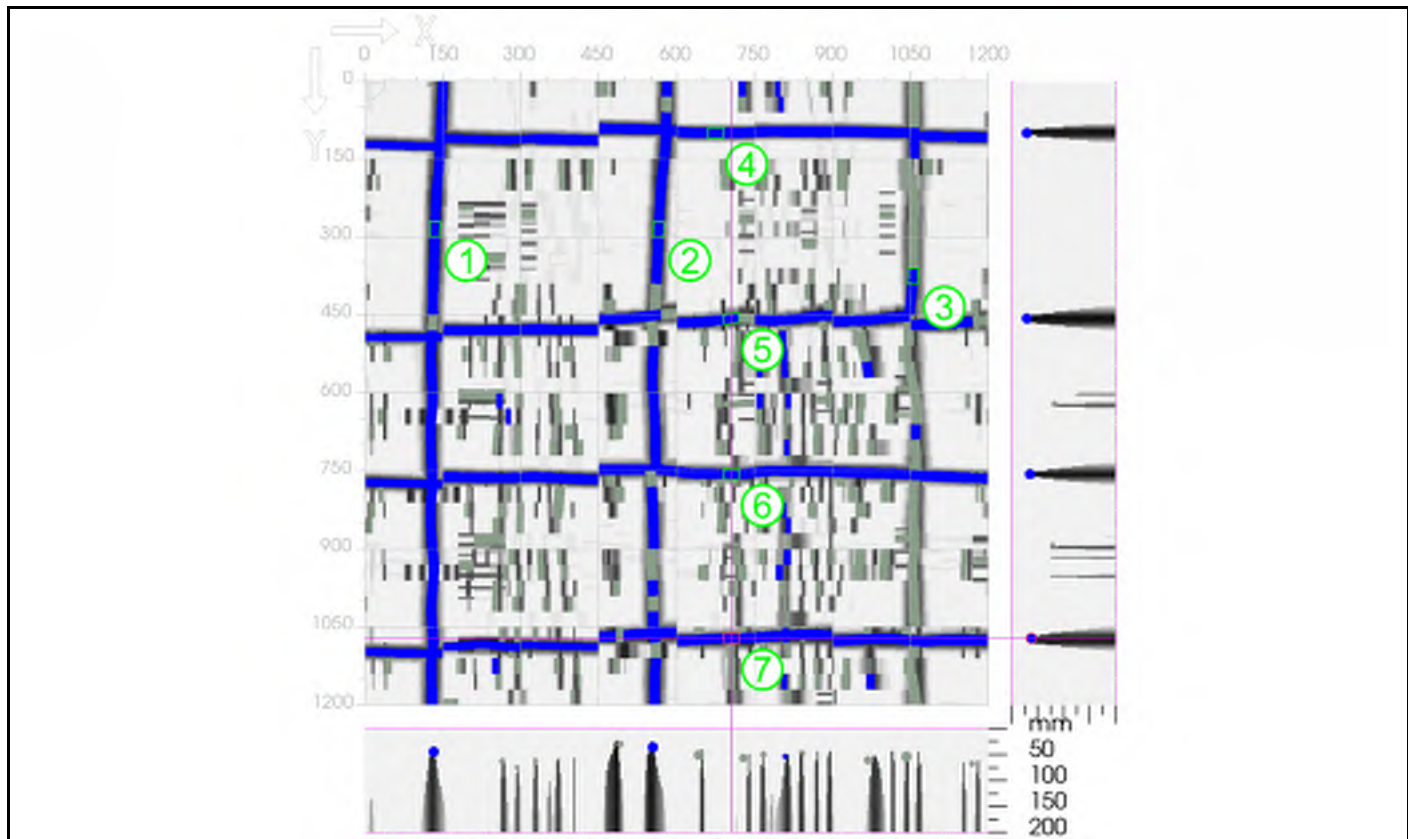
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-5
User:	-		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	119 mm	675 mm	56 mm	20 mm	Vertical	High
2.	612 mm	675 mm	60 mm	20 mm	Vertical	High
3.	1110 mm	675 mm	57 mm	20 mm	Vertical	High
4.	705 mm	168 mm	46 mm	20 mm	Horizontal	High
5.	705 mm	436 mm	41 mm	20 mm	Horizontal	High
6.	735 mm	764 mm	50 mm	16 mm	Horizontal	High
7.	735 mm	859 mm	50 mm	16 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 77.fscan
Serial number: 227190008
Date / Time: 2019-09-30 21:08:59
Comment: -



x 705 mm y 1072 mm z 0 mm Thickness: 200 mm
Overlay: - mm

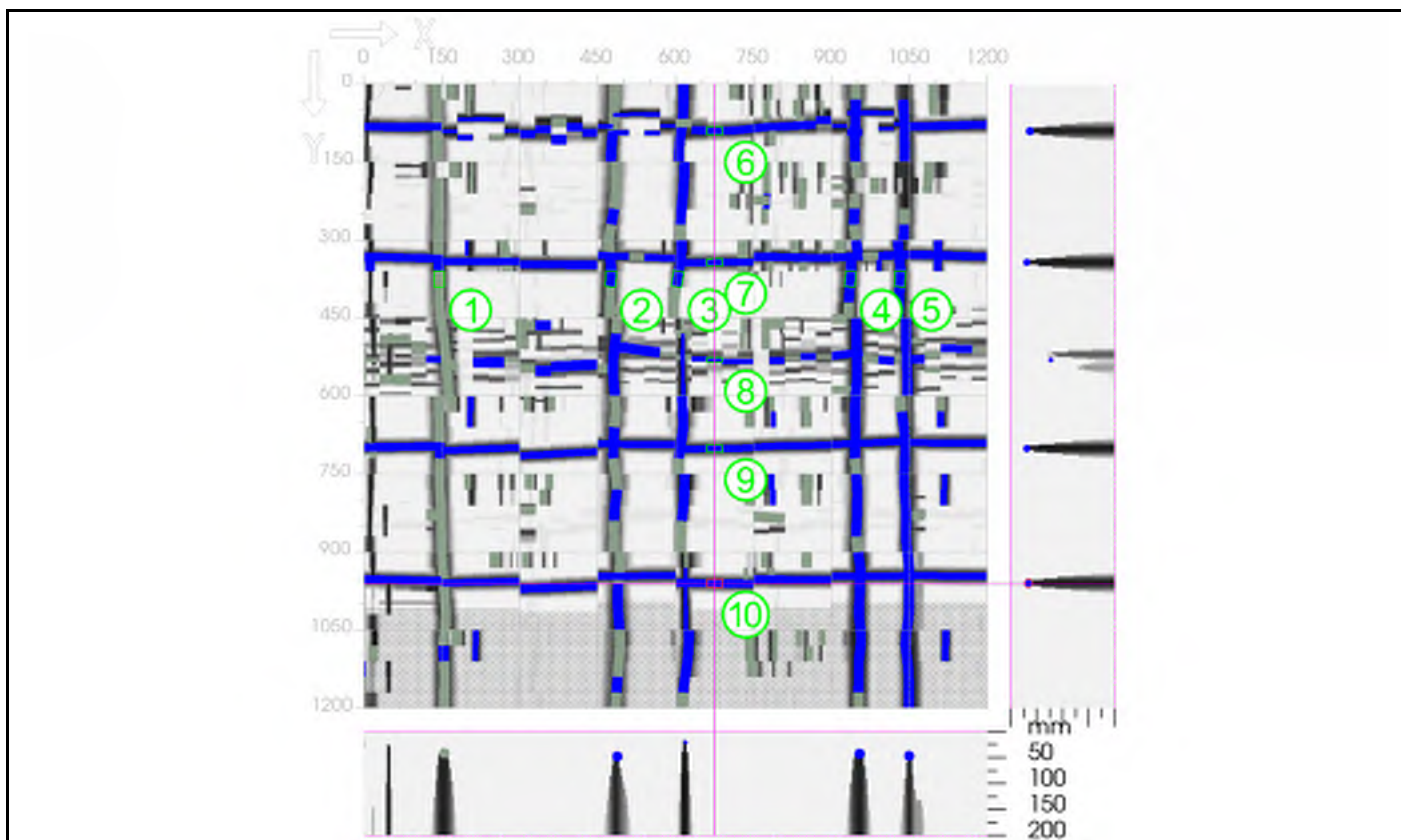
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-6
User:	-		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	134 mm	285 mm	35 mm	20 mm	Vertical	High
2.	565 mm	285 mm	33 mm	20 mm	Vertical	High
3.	1055 mm	375 mm	43 mm	20 mm	Vertical	High
4.	675 mm	100 mm	19 mm	20 mm	Horizontal	High
5.	705 mm	457 mm	19 mm	20 mm	Horizontal	High
6.	705 mm	756 mm	25 mm	20 mm	Horizontal	High
7.	705 mm	1072 mm	28 mm	20 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 79.fscan
Serial number: 227190008
Date / Time: 2019-09-30 23:11:28
Comment: -



x 675 mm y 960 mm z 0 mm Thickness: 200 mm
Overlay: - mm

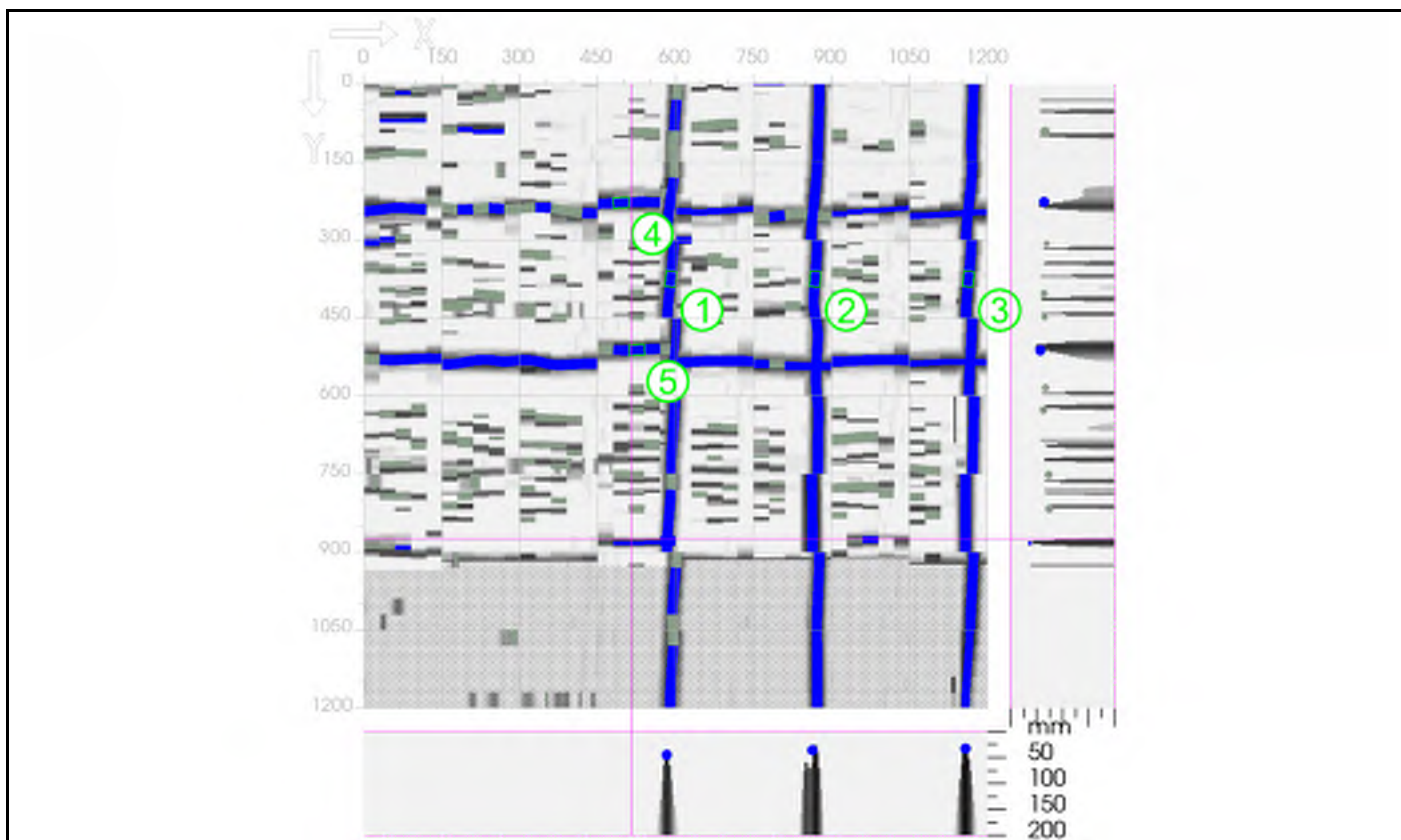
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-7
User:	-		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	145 mm	375 mm	32 mm	20 mm	Vertical	Low
2.	474 mm	375 mm	37 mm	20 mm	Vertical	High
3.	605 mm	375 mm	33 mm	20 mm	Vertical	High
4.	936 mm	375 mm	33 mm	20 mm	Vertical	High
5.	1032 mm	375 mm	36 mm	20 mm	Vertical	High
6.	675 mm	91 mm	29 mm	16 mm	Horizontal	High
7.	675 mm	343 mm	24 mm	14 mm	Horizontal	High
8.	675 mm	531 mm	72 mm	10 mm	Horizontal	High
9.	675 mm	701 mm	24 mm	14 mm	Horizontal	High
10.	675 mm	960 mm	26 mm	16 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 80.fscan
Serial number: 227190008
Date / Time: 2019-09-30 23:18:14
Comment: -



x 515 mm y 875 mm z 0 mm Thickness: 200 mm
Overlay: - mm

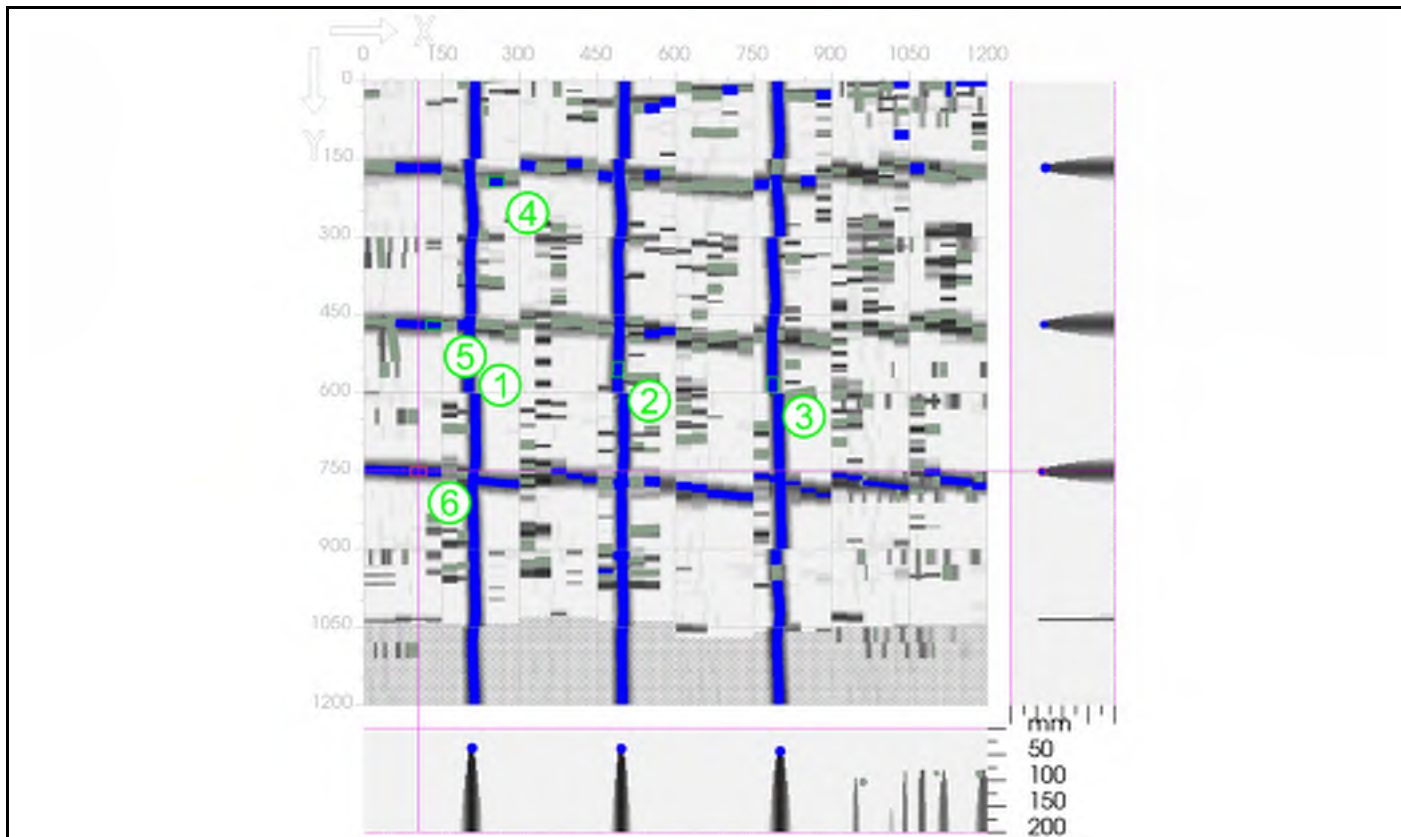
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-7
User:	-		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	591 mm	375 mm	35 mm	20 mm	Vertical	High
2.	868 mm	375 mm	27 mm	20 mm	Vertical	High
3.	1164 mm	375 mm	25 mm	20 mm	Vertical	High
4.	495 mm	228 mm	62 mm	20 mm	Horizontal	High
5.	525 mm	512 mm	47 mm	20 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 78.fscan
Serial number: 227190008
Date / Time: 2019-09-30 23:04:37
Comment: -



x 105 mm y 751 mm z 0 mm Thickness: 200 mm
Overlay: - mm

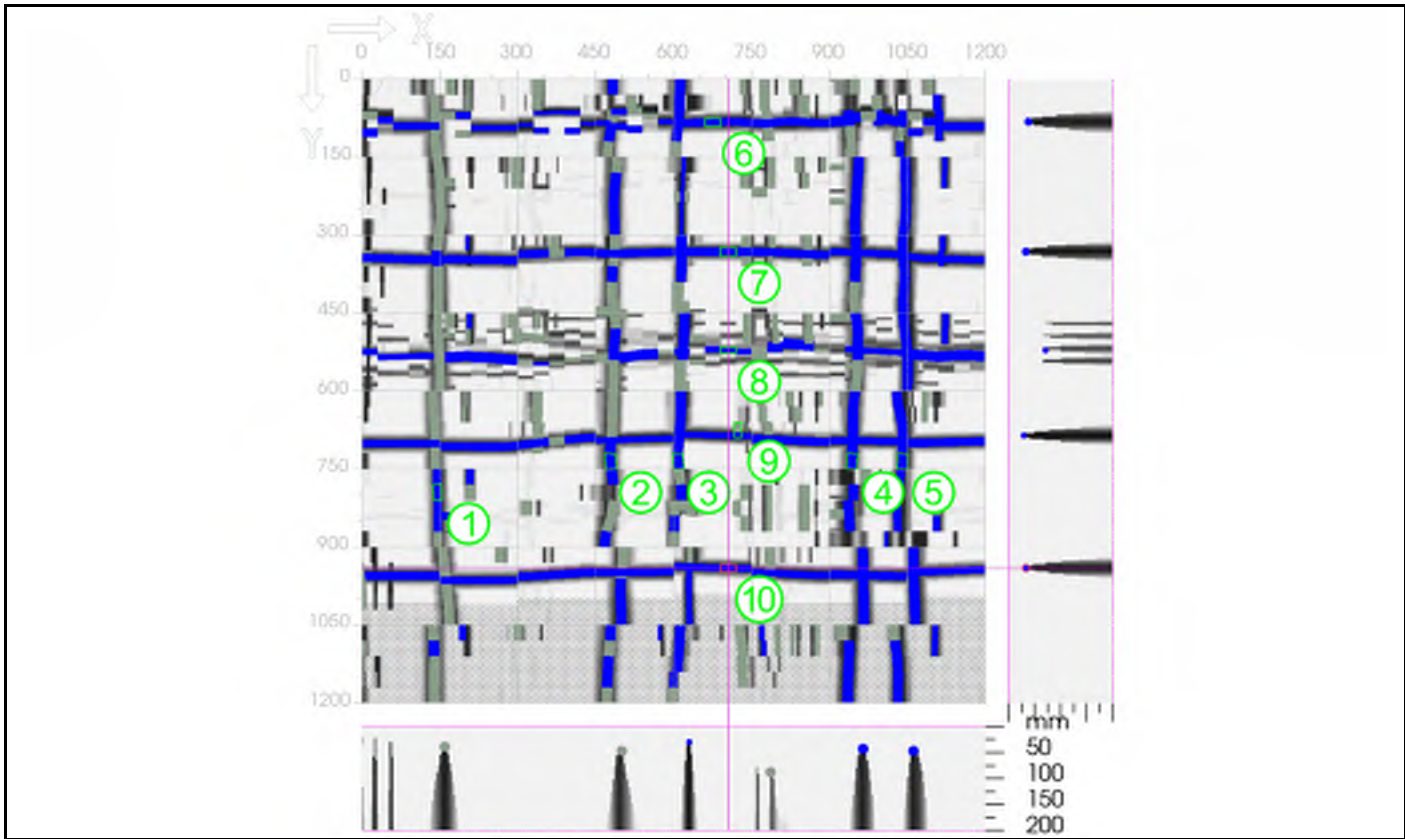
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-7
User:	-		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	202 mm	525 mm	30 mm	20 mm	Vertical	High
2.	489 mm	555 mm	30 mm	20 mm	Vertical	High
3.	787 mm	585 mm	33 mm	20 mm	Vertical	High
4.	255 mm	194 mm	53 mm	20 mm	Horizontal	High
5.	135 mm	470 mm	57 mm	16 mm	Horizontal	High
6.	105 mm	751 mm	52 mm	16 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 82.fscan
Serial number: 227190008
Date / Time: 2019-09-30 23:31:40
Comment: -



x 705 mm y: 940 mm z 0 mm Thickness: 200 mm
Overlay: - mm

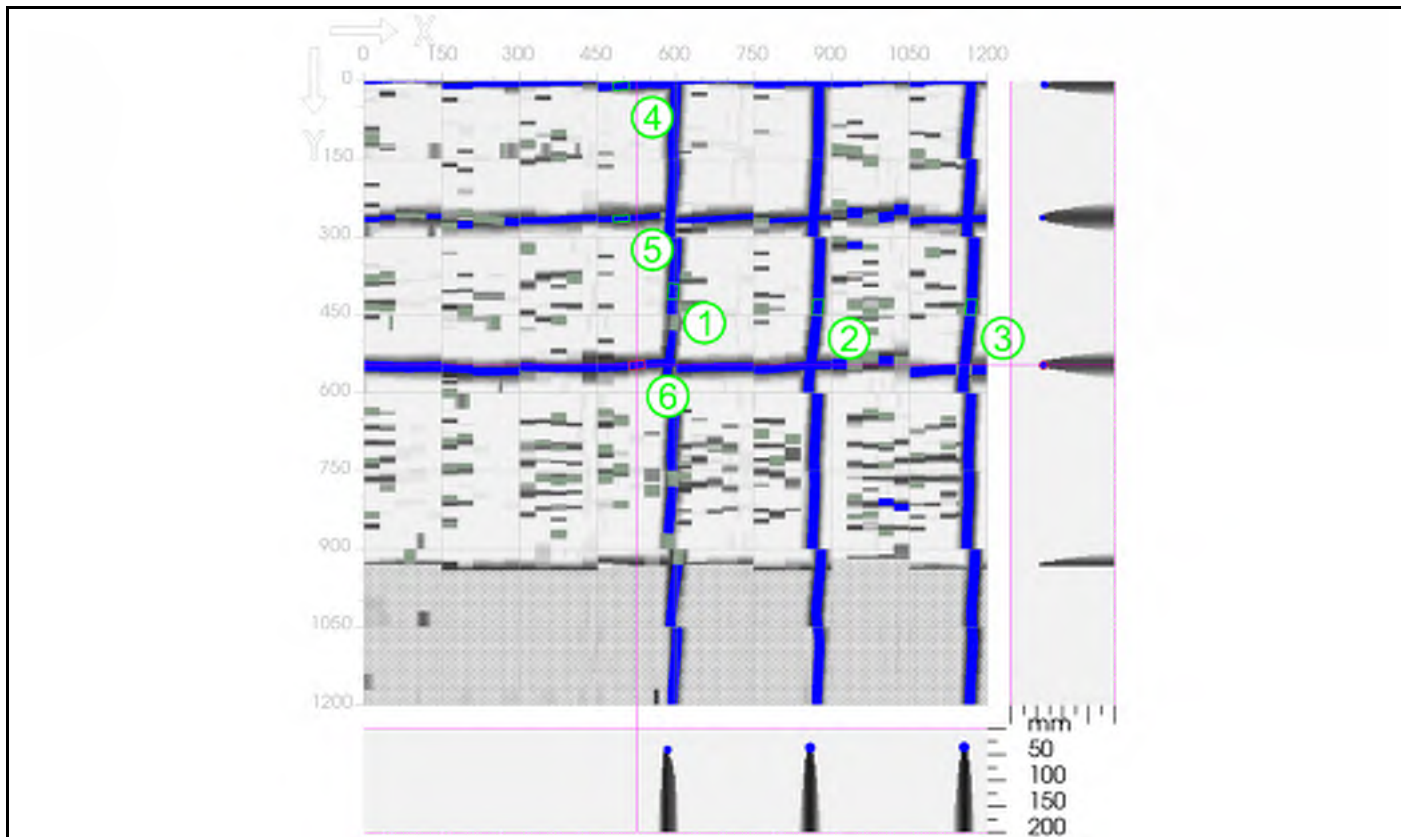
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-9
User:	-		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	145 mm	795 mm	31 mm	16 mm	Vertical	High
2.	476 mm	735 mm	37 mm	20 mm	Vertical	High
3.	607 mm	735 mm	27 mm	20 mm	Vertical	High
4.	943 mm	735 mm	33 mm	20 mm	Vertical	High
5.	1040 mm	735 mm	36 mm	20 mm	Vertical	High
6.	675 mm	83 mm	29 mm	16 mm	Horizontal	High
7.	705 mm	332 mm	25 mm	16 mm	Horizontal	High
8.	705 mm	522 mm	65 mm	12 mm	Horizontal	High
9.	723 mm	675 mm	72 mm	14 mm	Vertical	Low
10.	705 mm	940 mm	26 mm	14 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 83.fscan
Serial number: 227190008
Date / Time: 2019-09-30 23:36:50
Comment: -



x 525 mm y 546 mm z 0 mm Thickness: 200 mm
Overlay: - mm

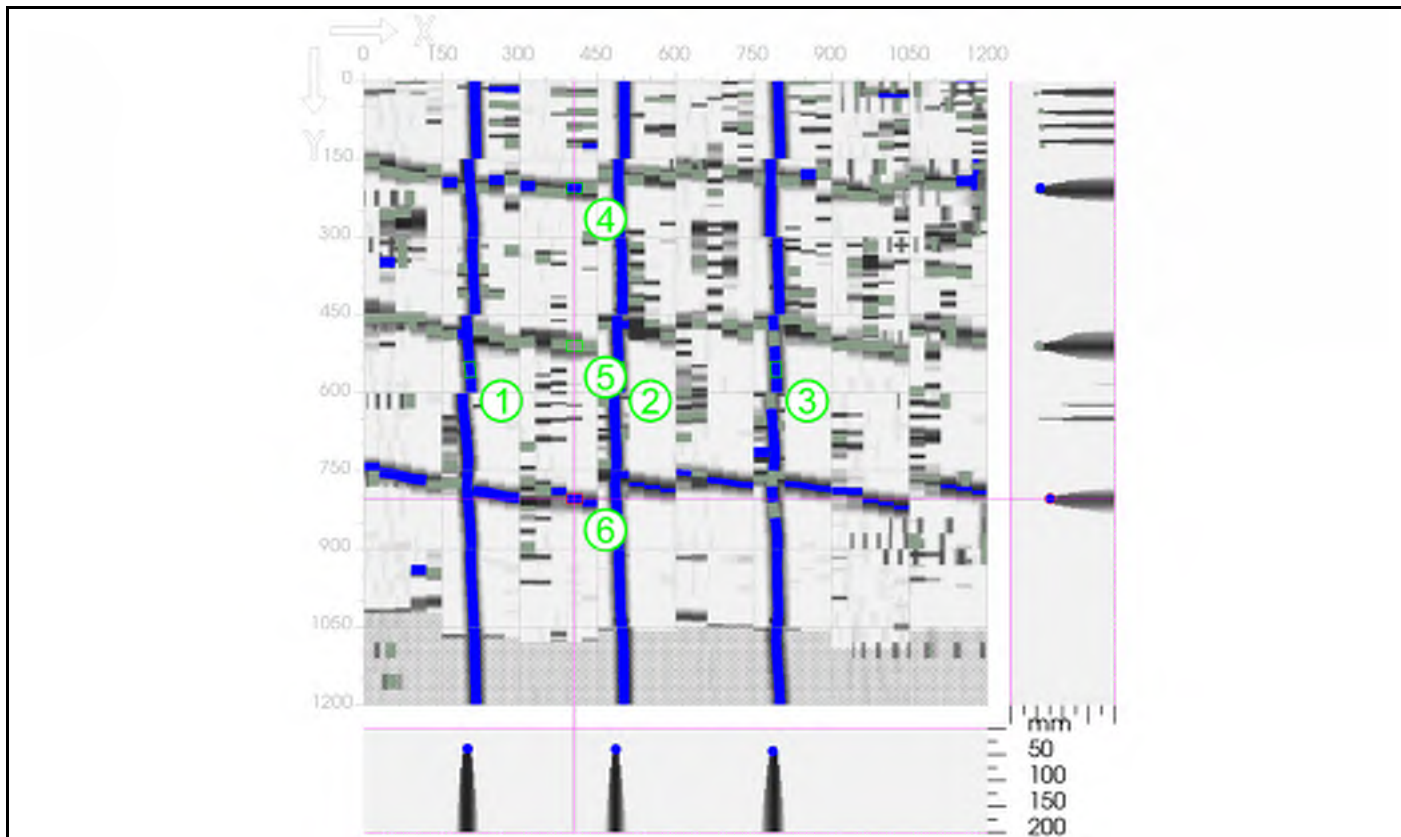
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-9
User:	-		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	595 mm	405 mm	35 mm	20 mm	Vertical	High
2.	874 mm	435 mm	26 mm	20 mm	Vertical	High
3.	1169 mm	435 mm	22 mm	20 mm	Vertical	High
4.	495 mm	10 mm	51 mm	16 mm	Horizontal	High
5.	495 mm	264 mm	56 mm	12 mm	Horizontal	High
6.	525 mm	546 mm	55 mm	16 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 81.fscan
Serial number: 227190008
Date / Time: 2019-09-30 23:25:57
Comment: -



x 405 mm y: 803 mm z 0 mm Thickness: 200 mm
Overlay: - mm

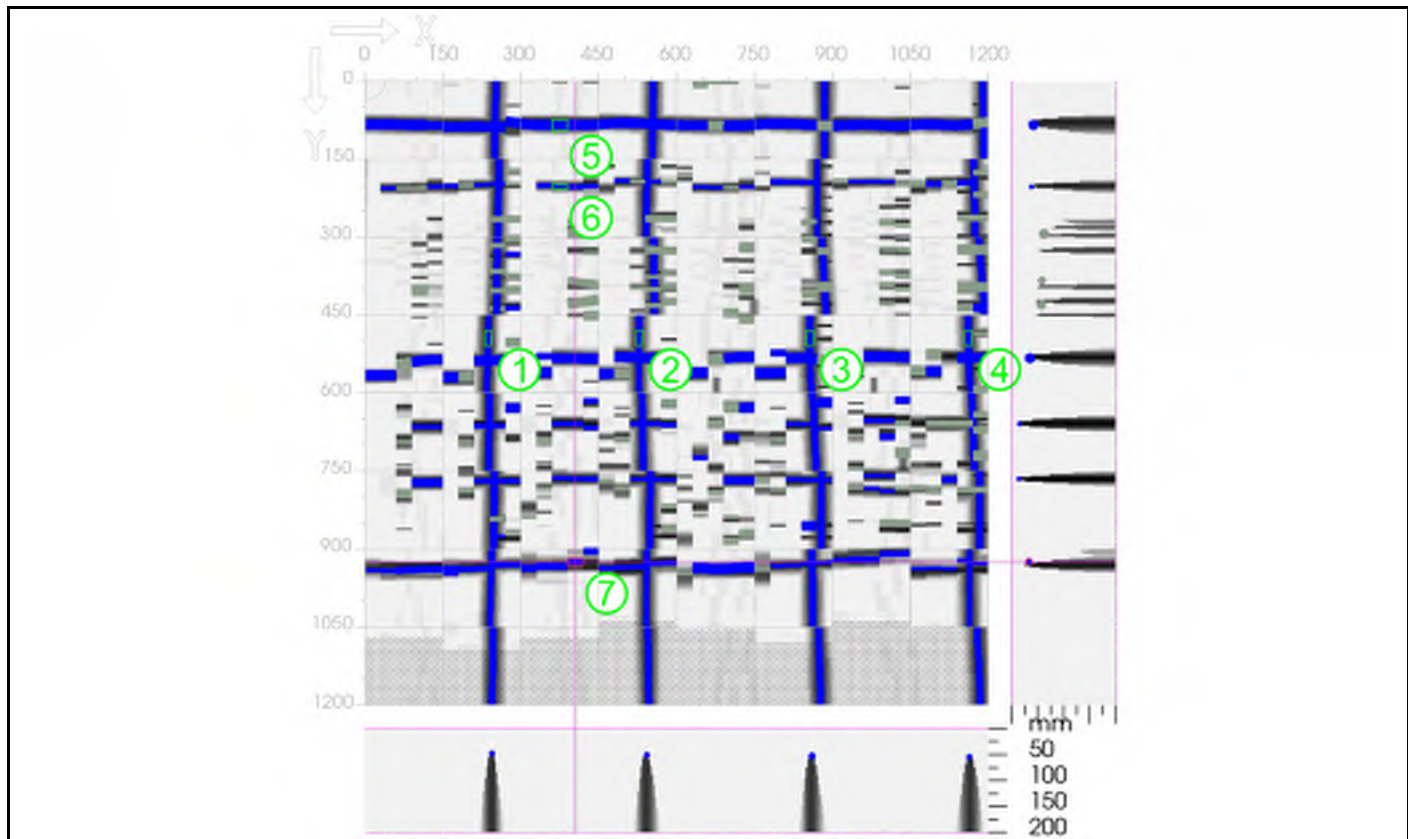
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-9
User:	-		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	204 mm	555 mm	30 mm	20 mm	Vertical	High
2.	491 mm	555 mm	30 mm	20 mm	Vertical	High
3.	793 mm	555 mm	33 mm	20 mm	Vertical	High
4.	405 mm	206 mm	47 mm	20 mm	Horizontal	High
5.	405 mm	510 mm	44 mm	20 mm	Horizontal	Low
6.	405 mm	803 mm	66 mm	20 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 07.fscan
Serial number: 227190008
Date / Time: 2019-10-11 20:18:29
Comment: -



x 405 mm y 925 mm z 0 mm Thickness: 200 mm
Overlay: - mm

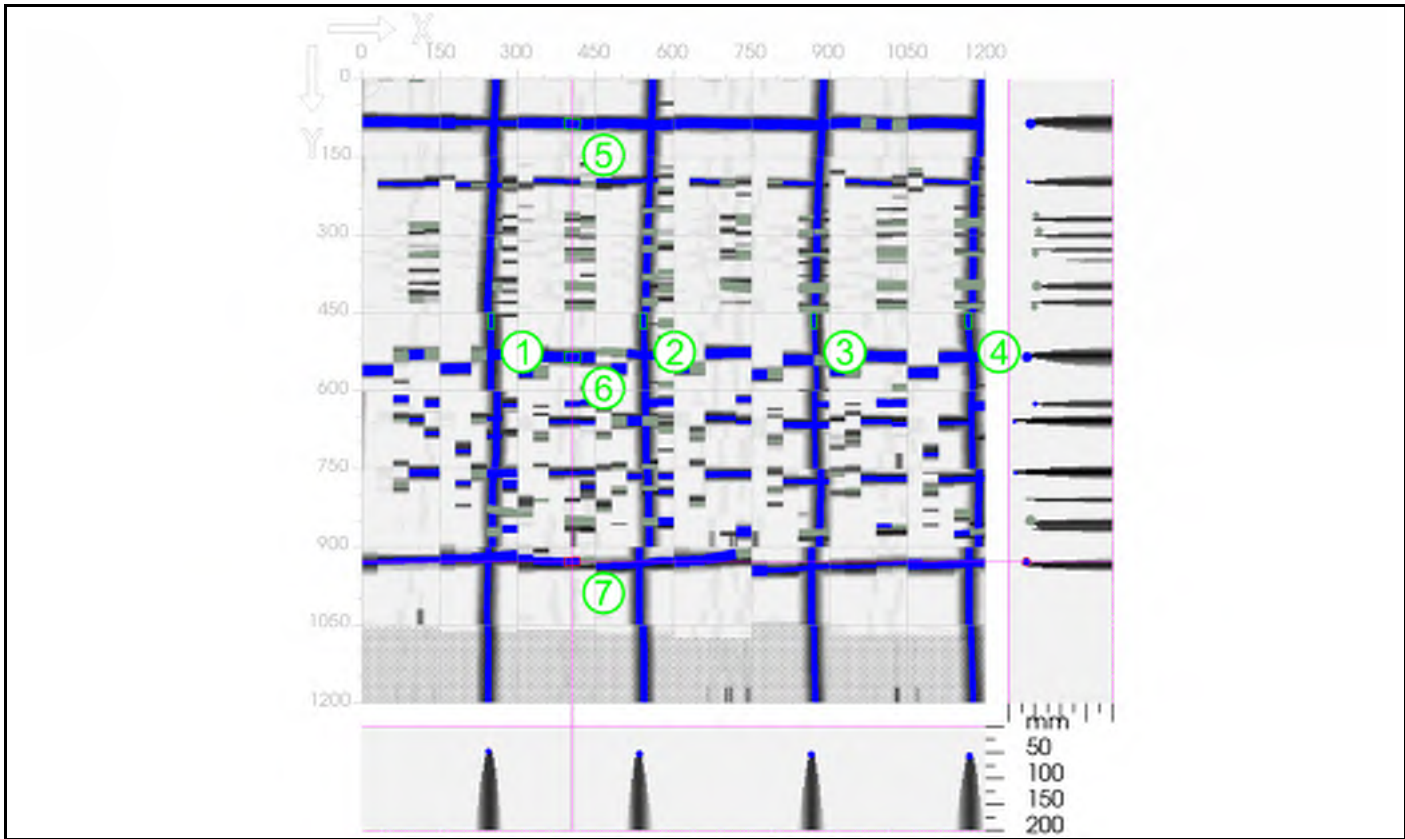
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-12
User:	-		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	237 mm	495 mm	42 mm	12 mm	Vertical	High
2.	528 mm	495 mm	45 mm	12 mm	Vertical	High
3.	857 mm	495 mm	47 mm	14 mm	Vertical	High
4.	1161 mm	495 mm	49 mm	14 mm	Vertical	High
5.	375 mm	84 mm	32 mm	20 mm	Horizontal	High
6.	375 mm	203 mm	32 mm	10 mm	Horizontal	High
7.	405 mm	925 mm	26 mm	14 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 08.fscan
Serial number: 227190008
Date / Time: 2019-10-11 20:22:55
Comment: -



x 405 mm y: 929 mm z 0 mm Thickness: 200 mm
Overlay: - mm

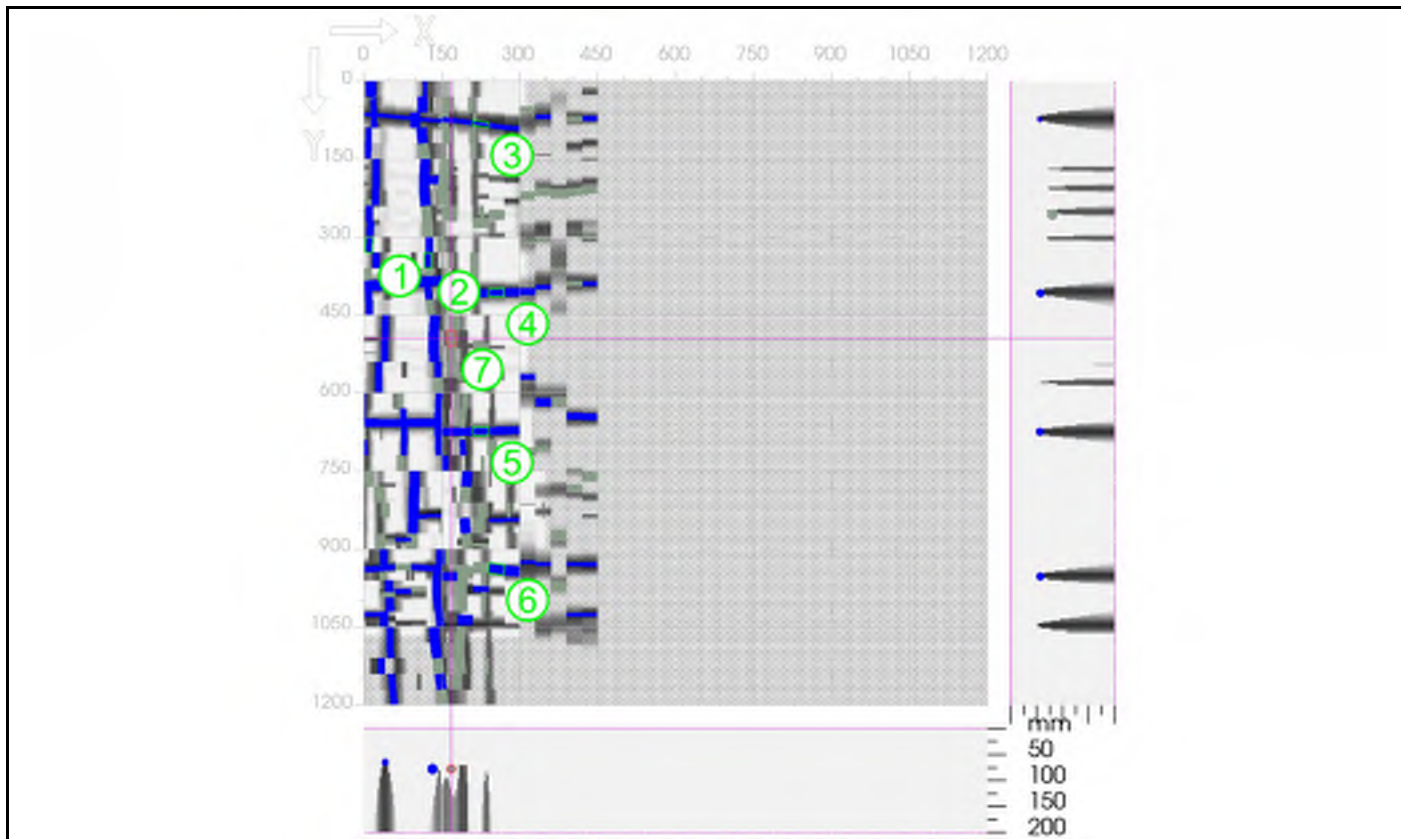
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-12
User:	-		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	248 mm	465 mm	42 mm	12 mm	Vertical	High
2.	542 mm	465 mm	45 mm	12 mm	Vertical	High
3.	870 mm	465 mm	44 mm	10 mm	Vertical	High
4.	1166 mm	465 mm	48 mm	12 mm	Vertical	High
5.	405 mm	86 mm	32 mm	20 mm	Horizontal	High
6.	405 mm	535 mm	25 mm	20 mm	Horizontal	High
7.	405 mm	929 mm	26 mm	16 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 06.fscan
Serial number: 227190008
Date / Time: 2019-10-11 20:11:52
Comment: -



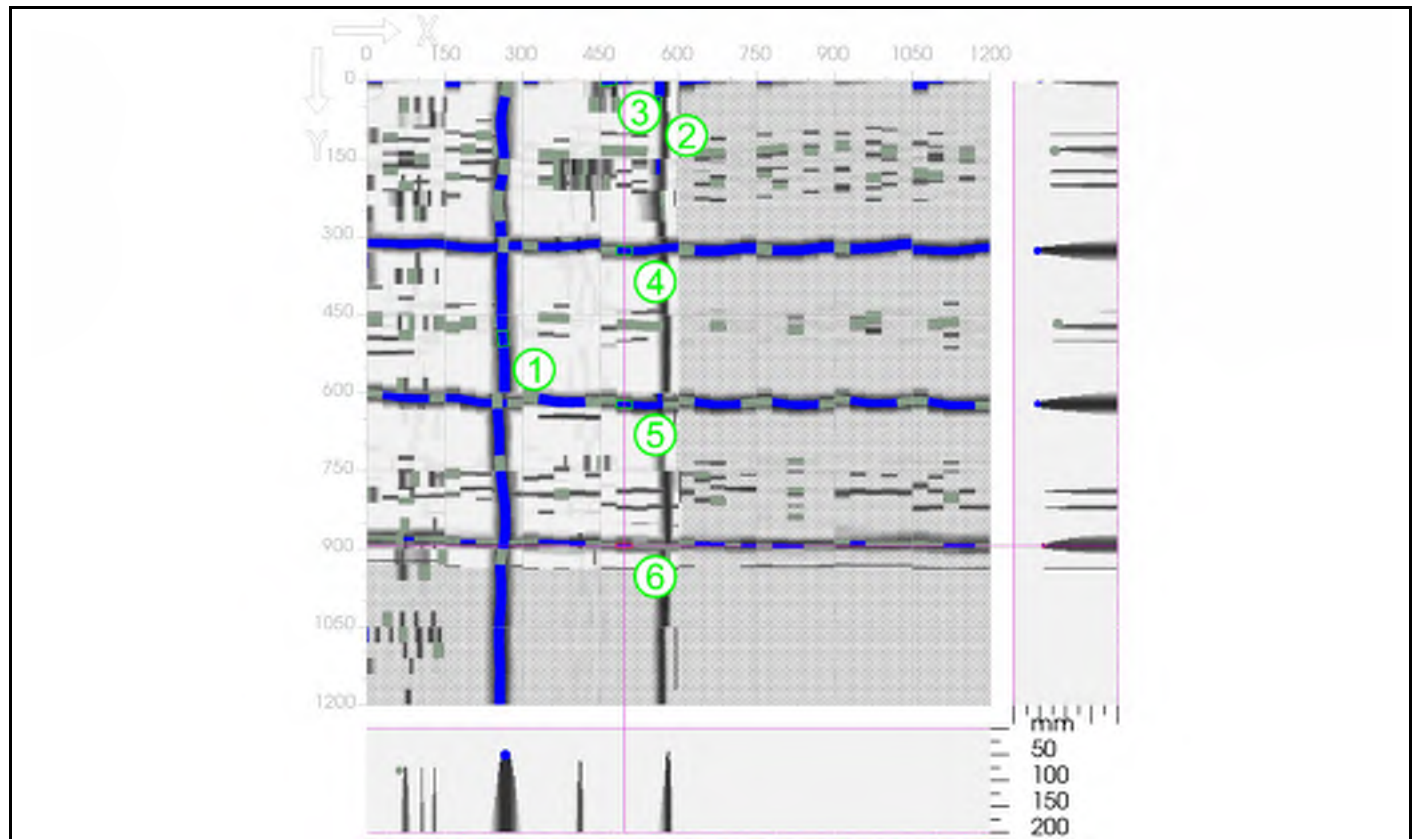
x 168 mm y 495 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-12
User:	-		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	8 mm	315 mm	67 mm	14 mm	Vertical	High
2.	123 mm	345 mm	64 mm	14 mm	Vertical	High
3.	225 mm	83 mm	51 mm	10 mm	Horizontal	High
4.	255 mm	407 mm	49 mm	16 mm	Horizontal	High
5.	225 mm	674 mm	48 mm	16 mm	Horizontal	High
6.	255 mm	938 mm	54 mm	20 mm	Horizontal	High
7.	168 mm	495 mm	70 mm	16 mm	Vertical	Low

```
Scan File:      107.fscan
Serial number:  227190008
Date / Time:    2019-10-02 21:13:14
Comment:        -
```



x: 496 mm y: 894 mm z: 0 mm Thickness: 200 mm
Overlay: - mm

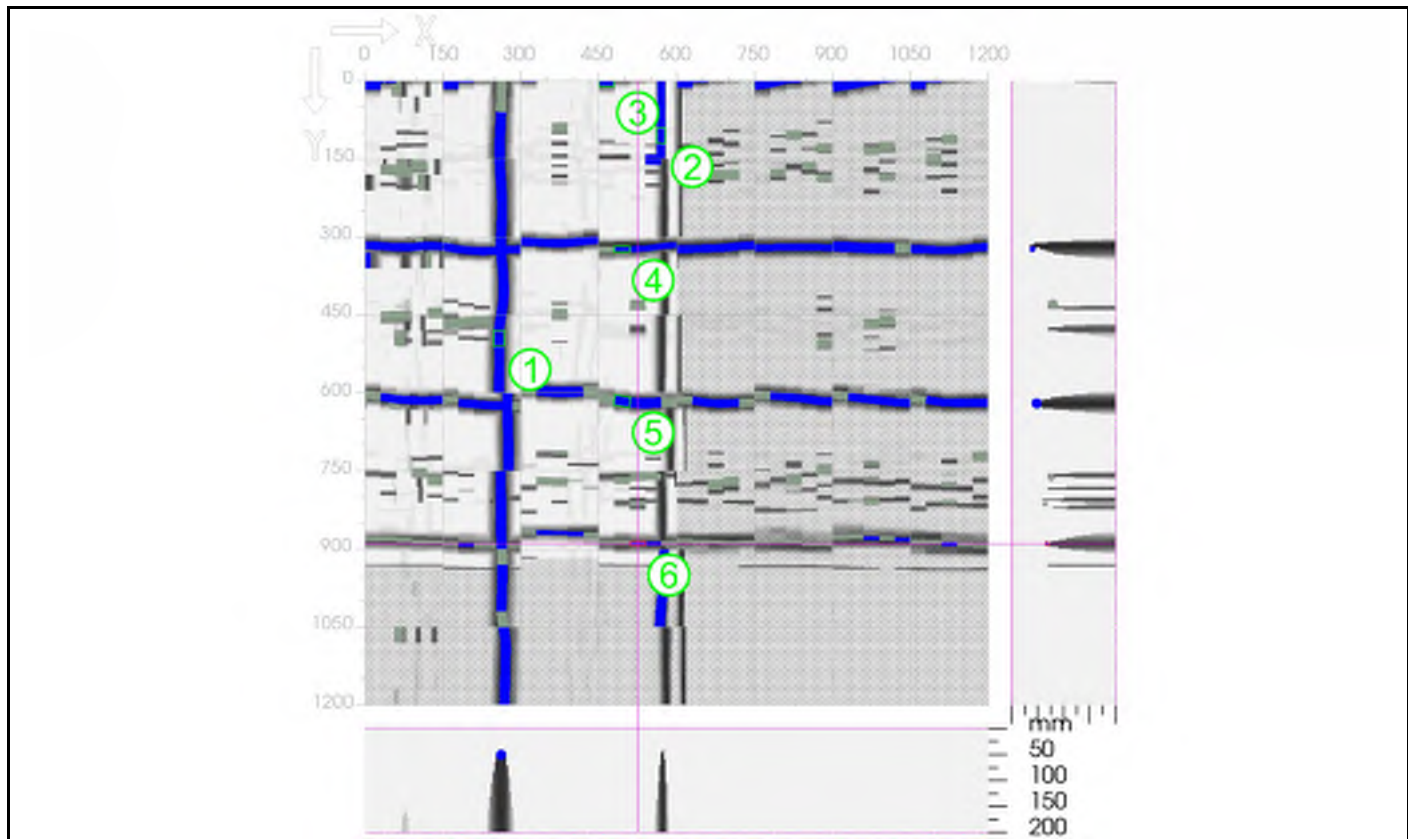
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-13
User:	-		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	262 mm	495 mm	34 mm	20 mm	Vertical	High
2.	555 mm	45 mm	45 mm	20 mm	Vertical	High
3.	465 mm	1 mm	43 mm	20 mm	Horizontal	High
4.	495 mm	326 mm	38 mm	16 mm	Horizontal	High
5.	495 mm	621 mm	39 mm	14 mm	Horizontal	High
6.	495 mm	893 mm	53 mm	8 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 106.fscan
Serial number: 227190008
Date / Time: 2019-10-02 20:41:56
Comment: -



x 525 mm y 890 mm z 0 mm Thickness: 200 mm
Overlay: - mm

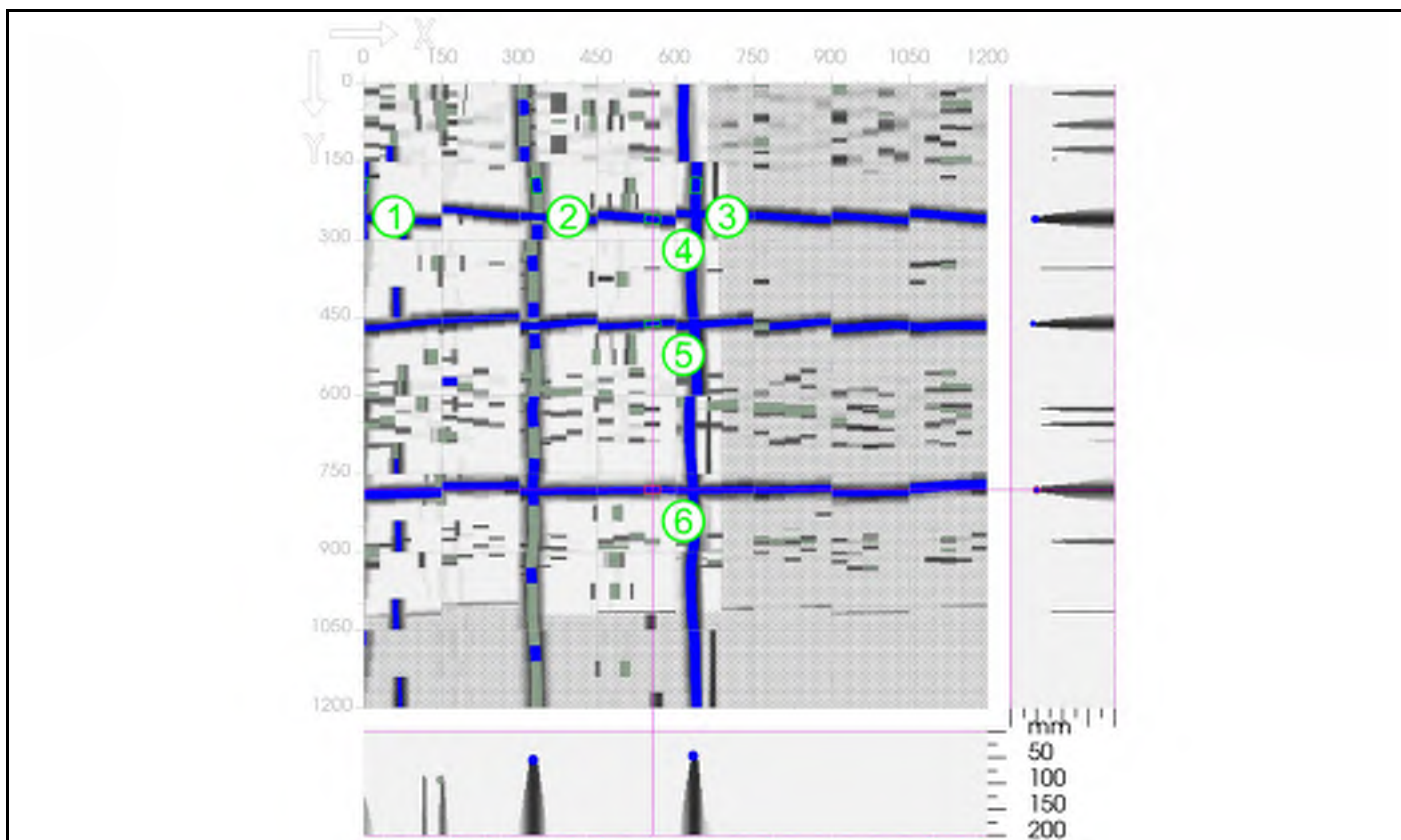
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-13
User:	-		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	258 mm	495 mm	42 mm	20 mm	Vertical	High
2.	570 mm	105 mm	42 mm	16 mm	Vertical	High
3.	465 mm	1 mm	41 mm	20 mm	Horizontal	High
4.	495 mm	323 mm	36 mm	12 mm	Horizontal	High
5.	495 mm	616 mm	41 mm	20 mm	Horizontal	High
6.	525 mm	890 mm	64 mm	8 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 109.fscan
Serial number: 227190008
Date / Time: 2019-10-02 21:22:29
Comment: -



x 555 mm y 781 mm z 0 mm Thickness: 200 mm
Overlay: - mm

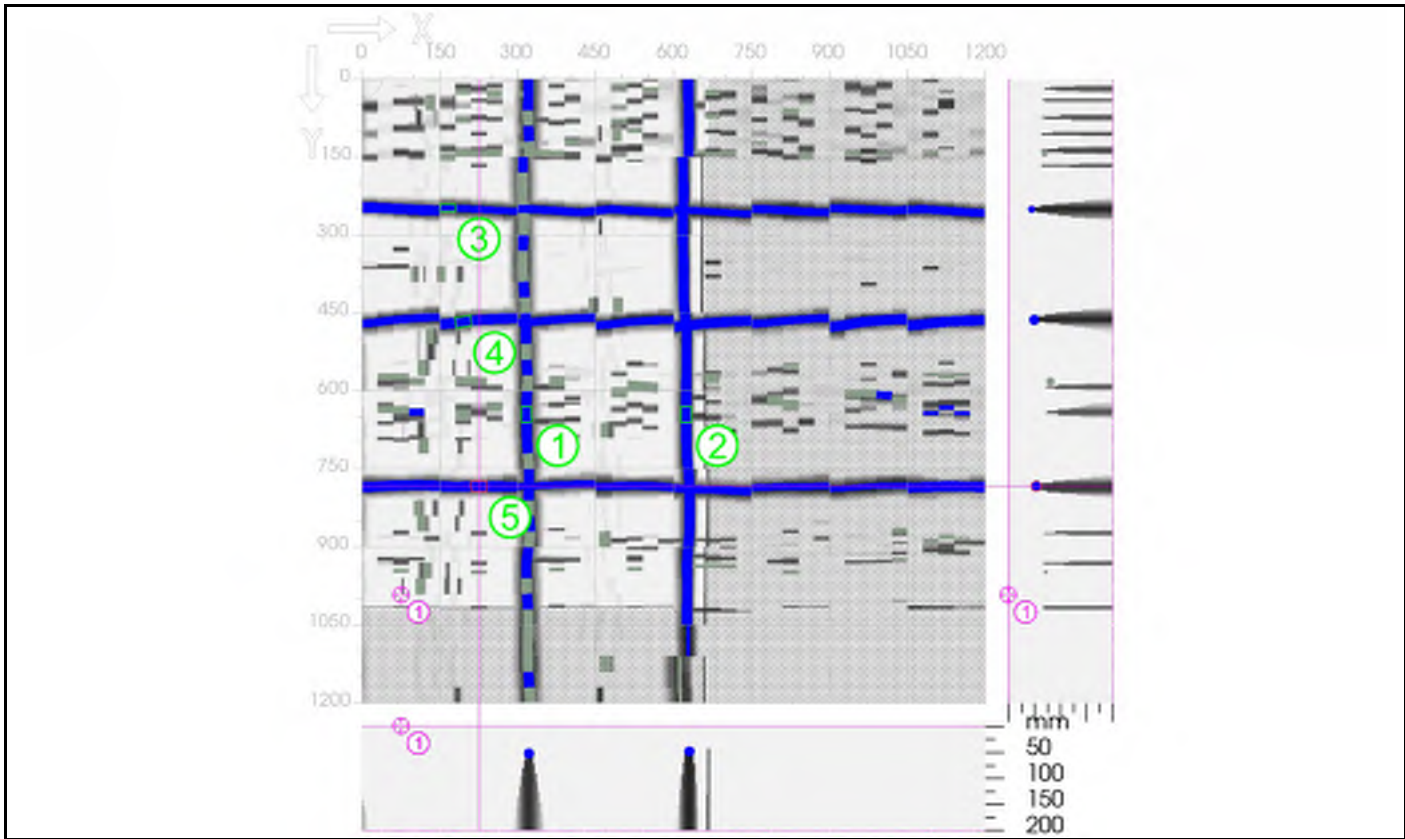
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-14
User:	-		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	-3 mm	195 mm	48 mm	20 mm	Vertical	High
2.	333 mm	195 mm	45 mm	20 mm	Vertical	High
3.	639 mm	195 mm	36 mm	20 mm	Vertical	High
4.	555 mm	260 mm	39 mm	16 mm	Horizontal	High
5.	555 mm	461 mm	37 mm	12 mm	Horizontal	High
6.	555 mm	781 mm	43 mm	14 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 108.fscan
Serial number: 227190008
Date / Time: 2019-10-02 21:19:52
Comment: -



x 225 mm y: 783 mm z 0 mm Thickness: 200 mm
Overlay: - mm

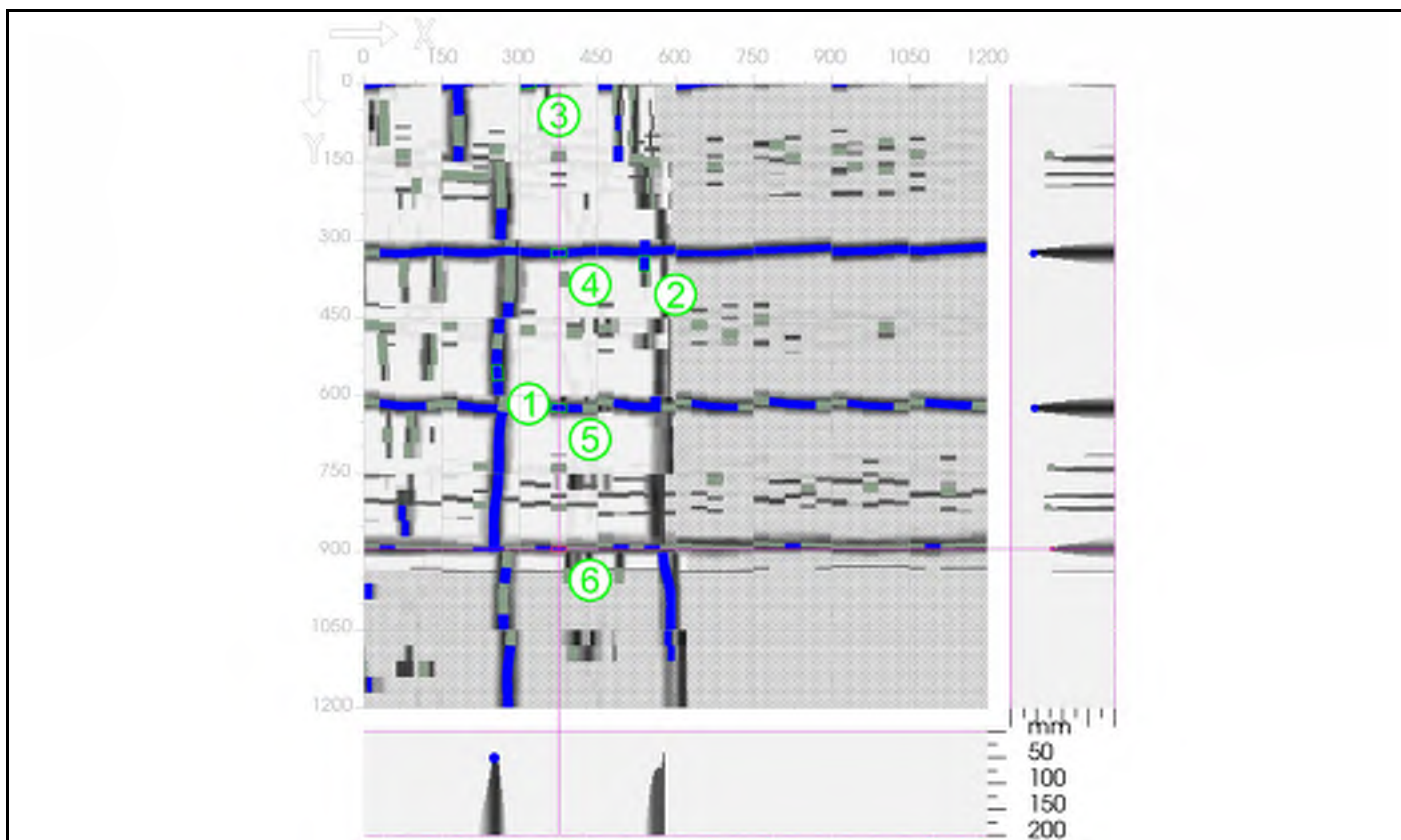
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-14
User:	-		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Annotations:	x:	y:	z:	Comment:		
1.	75 mm	992 mm	-1 mm	-		
Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	317 mm	645 mm	41 mm	20 mm	Vertical	High
2.	624 mm	645 mm	38 mm	20 mm	Vertical	High
3.	165 mm	247 mm	41 mm	14 mm	Horizontal	High
4.	195 mm	466 mm	43 mm	20 mm	Horizontal	High
5.	225 mm	783 mm	43 mm	20 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 121.fscan
Serial number: 227190008
Date / Time: 2019-10-03 19:15:38
Comment: -



x 375 mm y 894 mm z 0 mm Thickness: 200 mm
Overlay: - mm

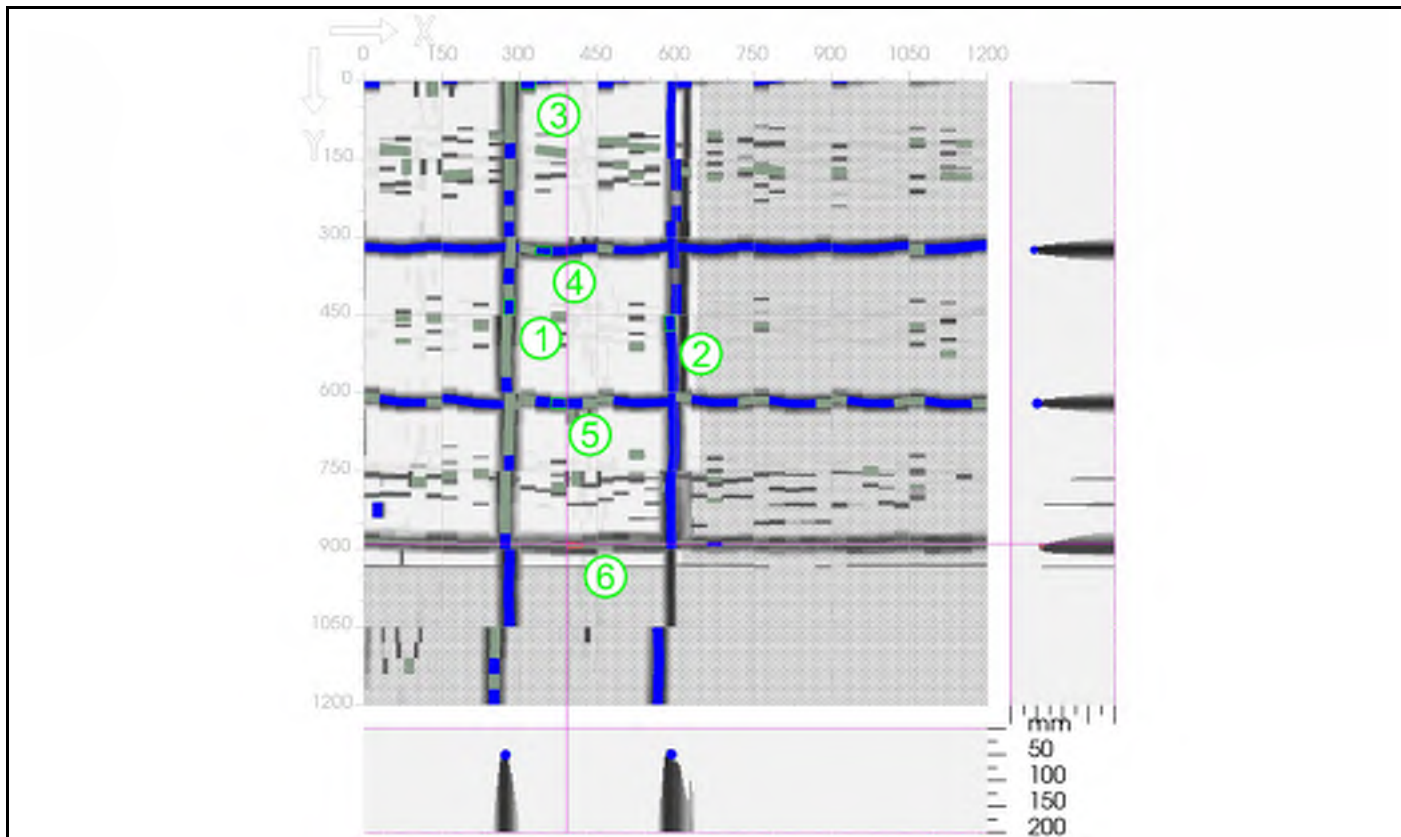
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-16
User:	-		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	257 mm	555 mm	39 mm	20 mm	Vertical	High
2.	540 mm	345 mm	57 mm	20 mm	Vertical	High
3.	315 mm	0 mm	44 mm	20 mm	Horizontal	High
4.	375 mm	326 mm	36 mm	16 mm	Horizontal	High
5.	375 mm	623 mm	38 mm	16 mm	Horizontal	High
6.	375 mm	894 mm	76 mm	8 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 120.fscan
Serial number: 227190008
Date / Time: 2019-10-03 19:12:29
Comment: -



x 391 mm y 890 mm z 0 mm Thickness: 200 mm
Overlay: - mm

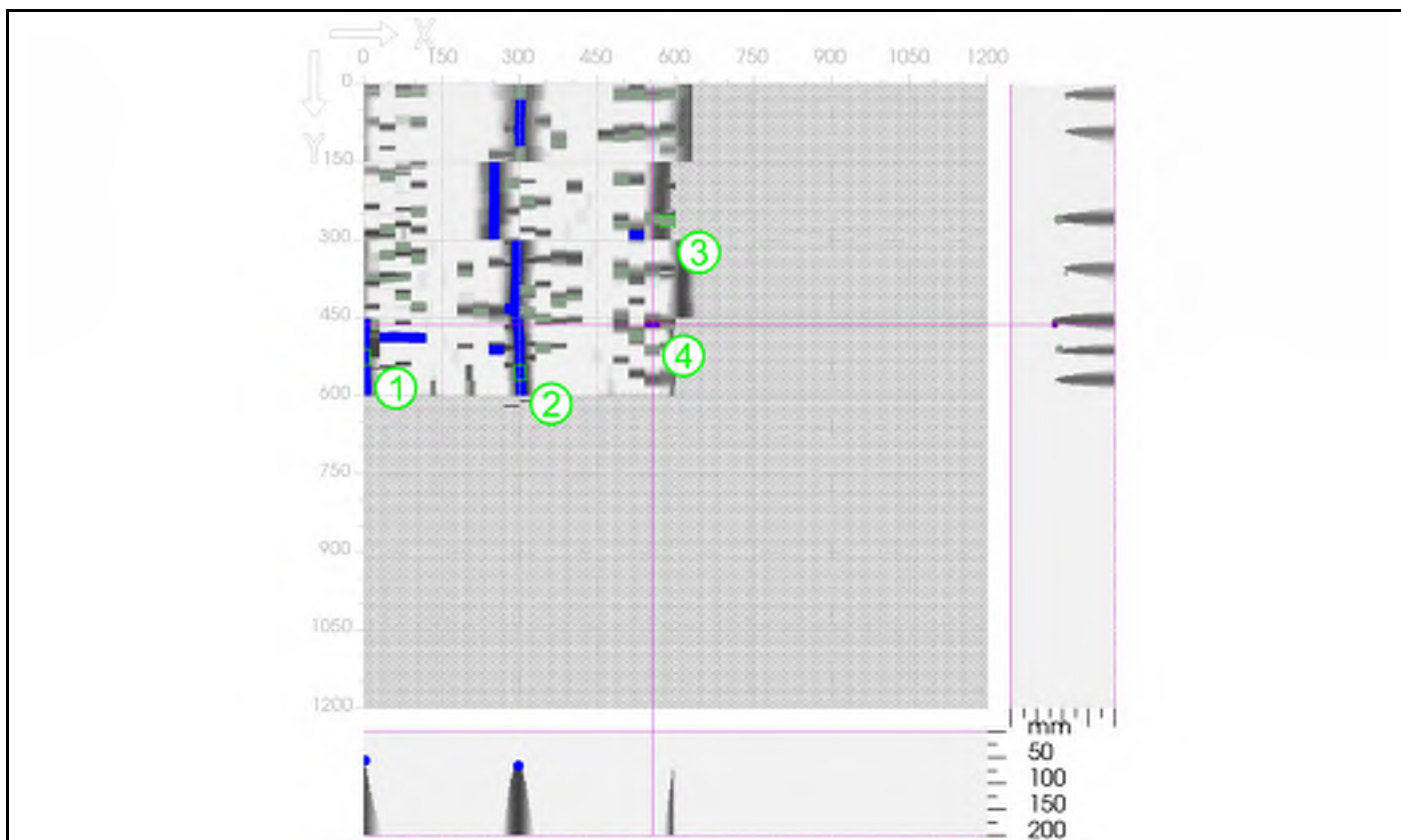
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-16
User:	-		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	280 mm	435 mm	41 mm	20 mm	Vertical	High
2.	589 mm	465 mm	42 mm	20 mm	Vertical	High
3.	315 mm	6 mm	42 mm	20 mm	Horizontal	High
4.	345 mm	327 mm	38 mm	16 mm	Horizontal	High
5.	375 mm	620 mm	38 mm	20 mm	Horizontal	High
6.	405 mm	893 mm	55 mm	8 mm	Horizontal	Low

Hilti PROFIS Detection Report

Scan File: 119.fscan
Serial number: 227190008
Date / Time: 2019-10-03 19:07:09
Comment: -



x 555 mm y 463 mm z 0 mm Thickness: 200 mm
Overlay: - mm

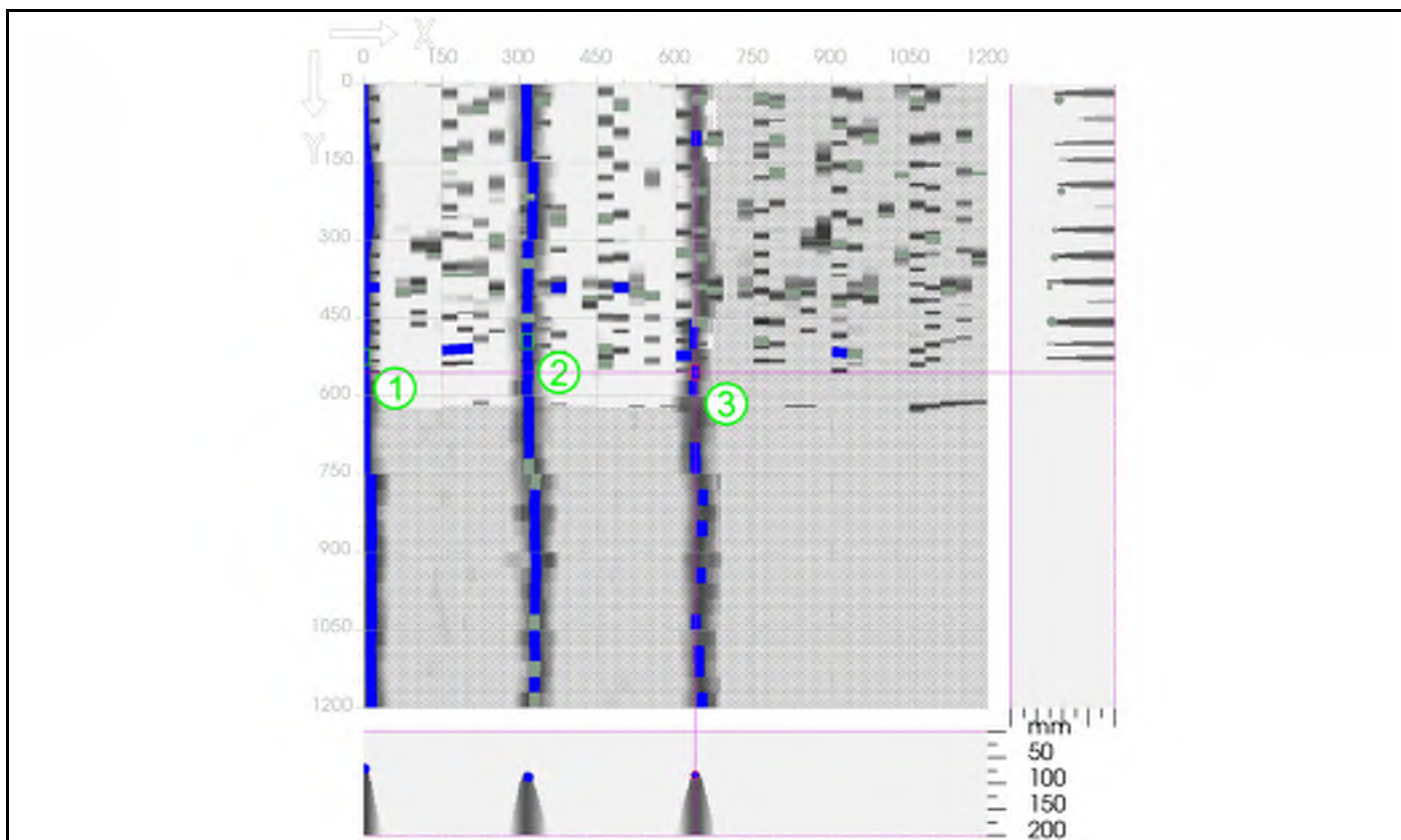
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-17
User:	-		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	1 mm	525 mm	44 mm	20 mm	Vertical	High
2.	300 mm	555 mm	49 mm	20 mm	Vertical	High
3.	585 mm	264 mm	72 mm	20 mm	Horizontal	Low
4.	555 mm	463 mm	79 mm	12 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 118.fscan
Serial number: 227190008
Date / Time: 2019-10-03 19:05:24
Comment: -



x 638 mm y: 555 mm z 0 mm Thickness: 200 mm
Overlay: - mm

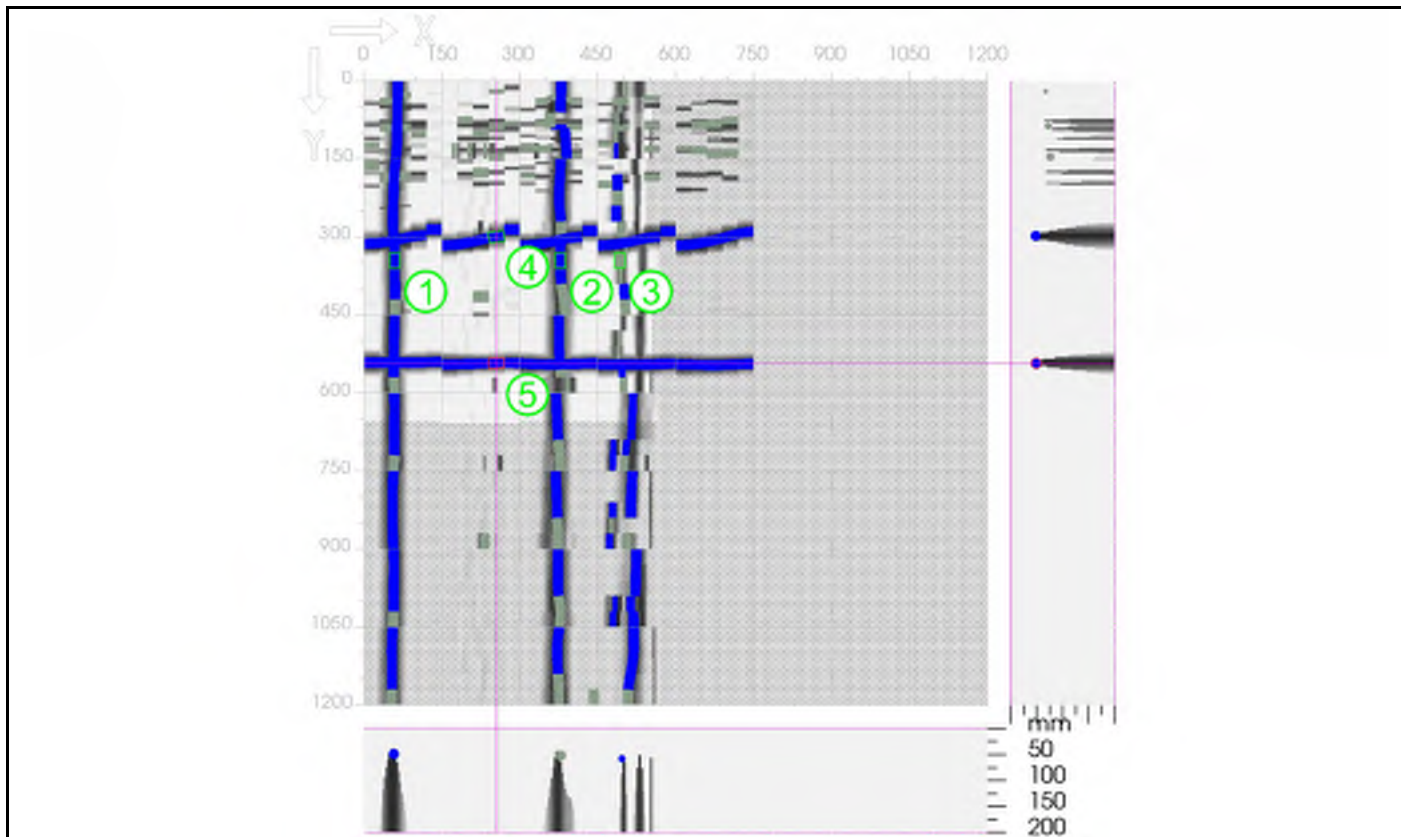
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-17
User:	-		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	0 mm	525 mm	64 mm	20 mm	Vertical	High
2.	315 mm	495 mm	84 mm	20 mm	Vertical	High
3.	638 mm	555 mm	76 mm	16 mm	Vertical	High

Hilti PROFIS Detection Report

Scan File: 117.fscan
Serial number: 227190008
Date / Time: 2019-10-03 18:49:49
Comment: -



x 255 mm y 543 mm z 0 mm Thickness: 200 mm
Overlay: - mm

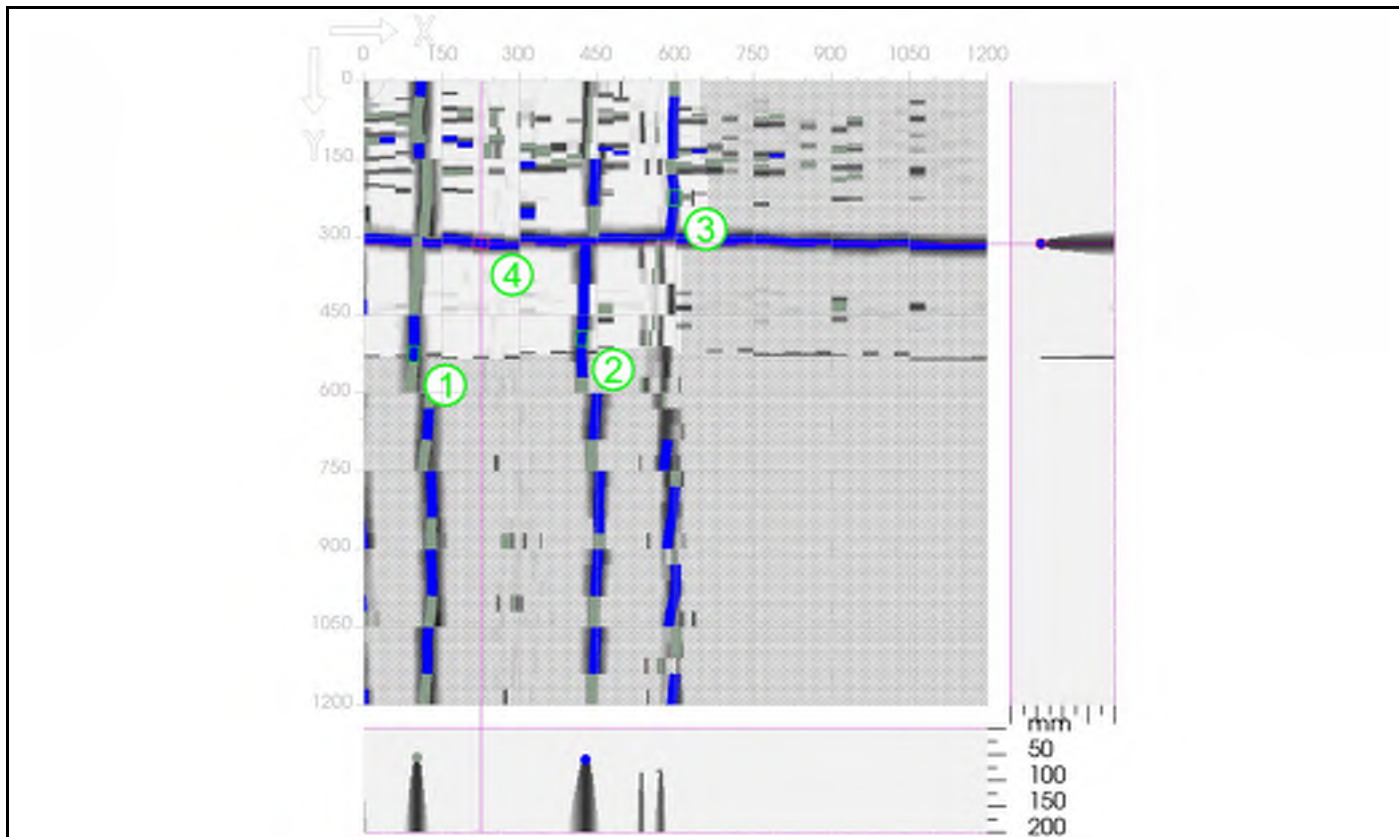
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-18
User:	-		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	59 mm	345 mm	38 mm	20 mm	Vertical	High
2.	378 mm	345 mm	45 mm	20 mm	Vertical	High
3.	493 mm	345 mm	68 mm	20 mm	Vertical	Low
4.	255 mm	298 mm	38 mm	20 mm	Horizontal	High
5.	255 mm	543 mm	39 mm	20 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 116.fscan
Serial number: 227190008
Date / Time: 2019-10-03 18:46:23
Comment: -



x 225 mm y: 313 mm z 0 mm Thickness: 200 mm
Overlay: - mm

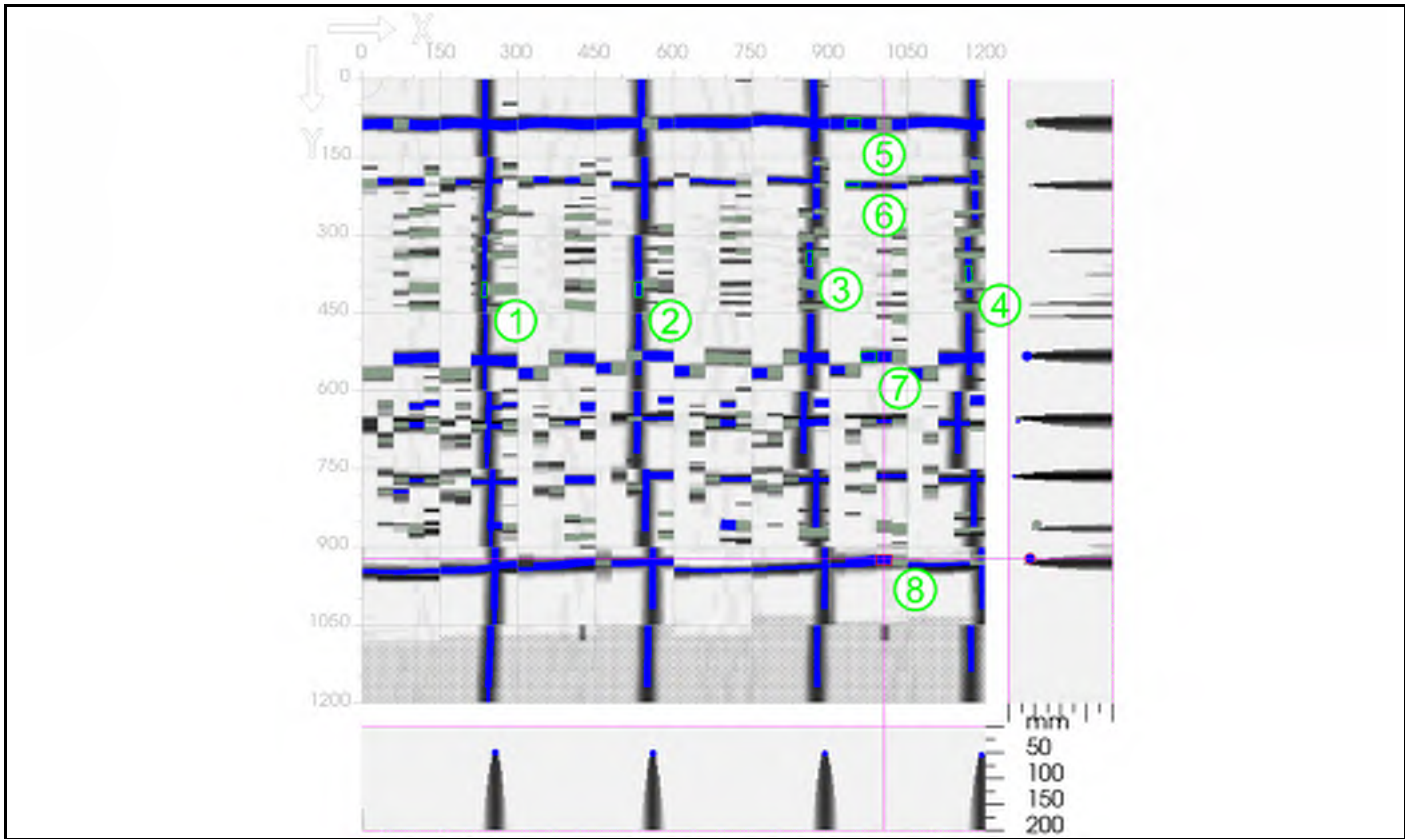
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-18
User:	-		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	96 mm	525 mm	46 mm	20 mm	Vertical	High
2.	419 mm	495 mm	47 mm	20 mm	Vertical	High
3.	598 mm	225 mm	56 mm	20 mm	Vertical	High
4.	225 mm	313 mm	48 mm	20 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 10.fscan
Serial number: 227190008
Date / Time: 2019-10-11 20:34:55
Comment: -



x 1005 mm y: 922 mm z 0 mm Thickness: 200 mm
Overlay: - mm

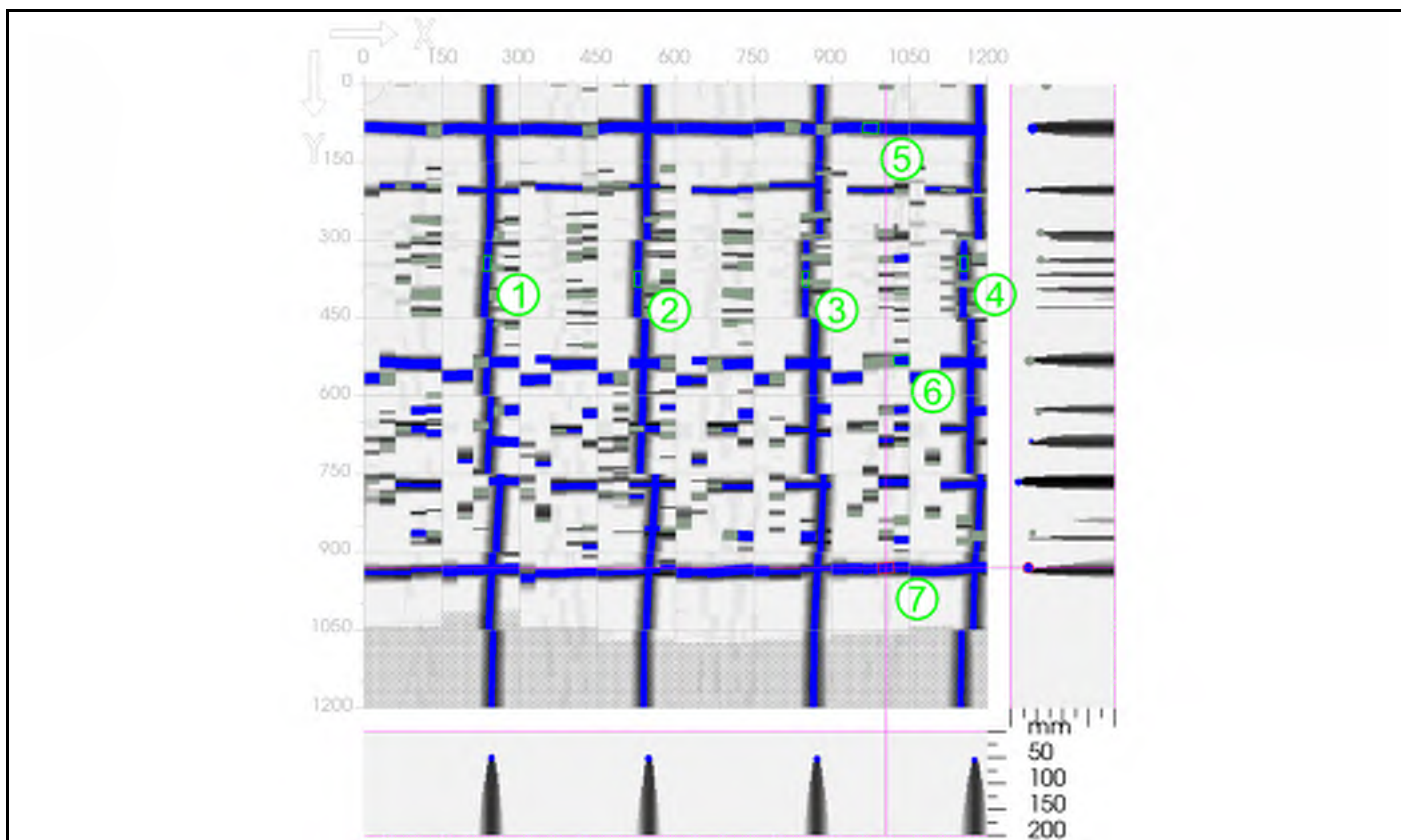
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-19
User:	-		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	235 mm	405 mm	40 mm	10 mm	Vertical	High
2.	533 mm	405 mm	45 mm	14 mm	Vertical	High
3.	862 mm	345 mm	46 mm	12 mm	Vertical	High
4.	1168 mm	375 mm	48 mm	12 mm	Vertical	High
5.	945 mm	85 mm	32 mm	20 mm	Horizontal	High
6.	945 mm	202 mm	45 mm	10 mm	Horizontal	High
7.	975 mm	534 mm	26 mm	20 mm	Horizontal	High
8.	1005 mm	922 mm	31 mm	20 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 11.fscan
Serial number: 227190008
Date / Time: 2019-10-11 20:40:18
Comment: -



x 1005 mm y 930 mm z 0 mm Thickness: 200 mm
Overlay: - mm

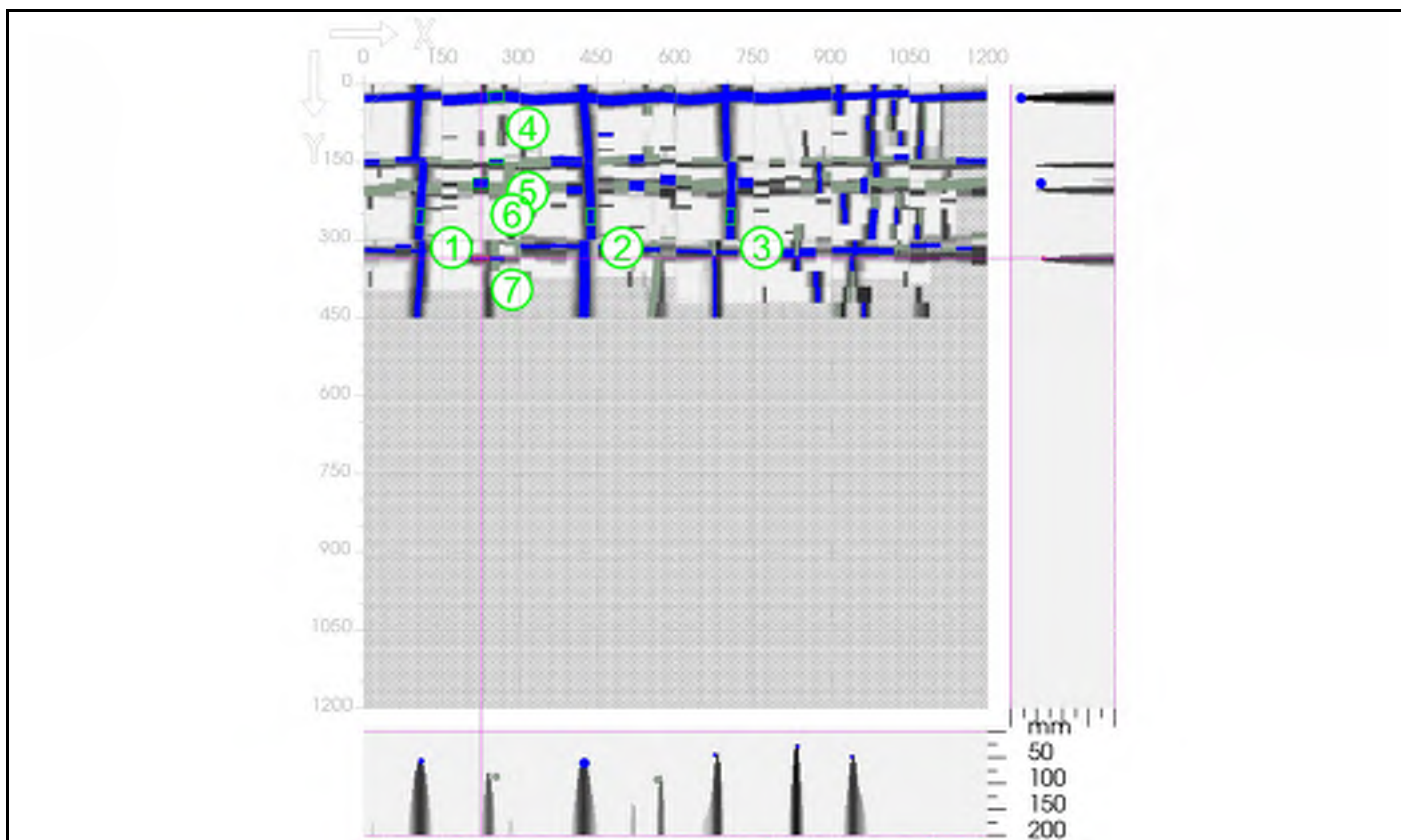
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-19
User:	-		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	237 mm	345 mm	43 mm	14 mm	Vertical	High
2.	527 mm	375 mm	45 mm	14 mm	Vertical	High
3.	850 mm	375 mm	46 mm	12 mm	Vertical	High
4.	1155 mm	345 mm	49 mm	14 mm	Vertical	High
5.	975 mm	84 mm	31 mm	20 mm	Horizontal	High
6.	1035 mm	532 mm	26 mm	20 mm	Horizontal	High
7.	1005 mm	930 mm	24 mm	20 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 09.fscan
Serial number: 227190008
Date / Time: 2019-10-11 20:27:56
Comment: -



x: 225 mm y: 335 mm z: 0 mm Thickness: 200 mm
Overlay: - mm

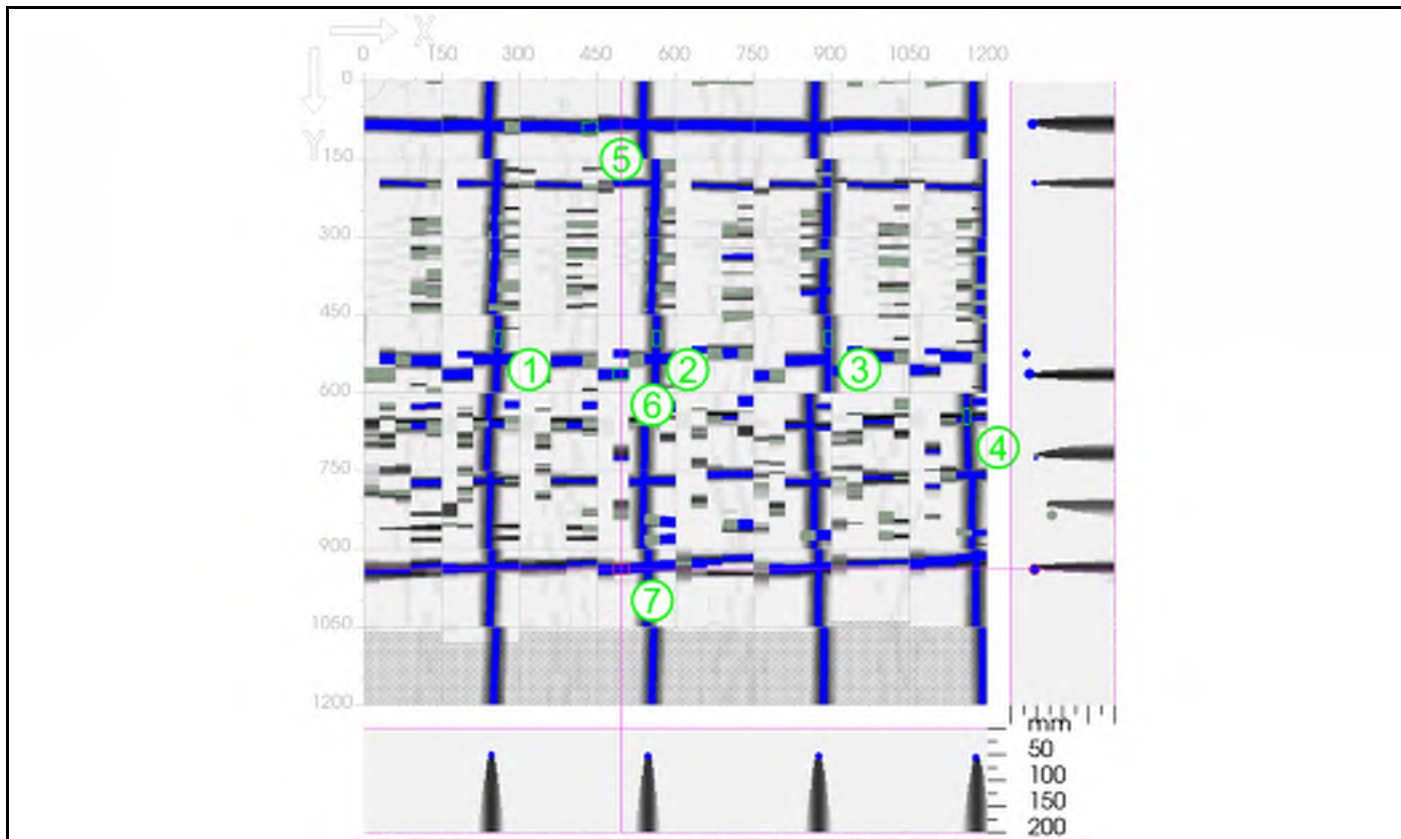
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-19
User:	-		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	108 mm	255 mm	54 mm	16 mm	Vertical	High
2.	437 mm	255 mm	51 mm	16 mm	Vertical	High
3.	706 mm	255 mm	49 mm	16 mm	Vertical	High
4.	255 mm	25 mm	11 mm	20 mm	Horizontal	High
5.	255 mm	148 mm	63 mm	10 mm	Horizontal	High
6.	225 mm	191 mm	48 mm	20 mm	Horizontal	High
7.	225 mm	335 mm	59 mm	8 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 13.fscan
Serial number: 227190008
Date / Time: 2019-10-11 20:48:17
Comment: -



x: 495 mm y: 939 mm z: 0 mm Thickness: 200 mm
Overlay: - mm

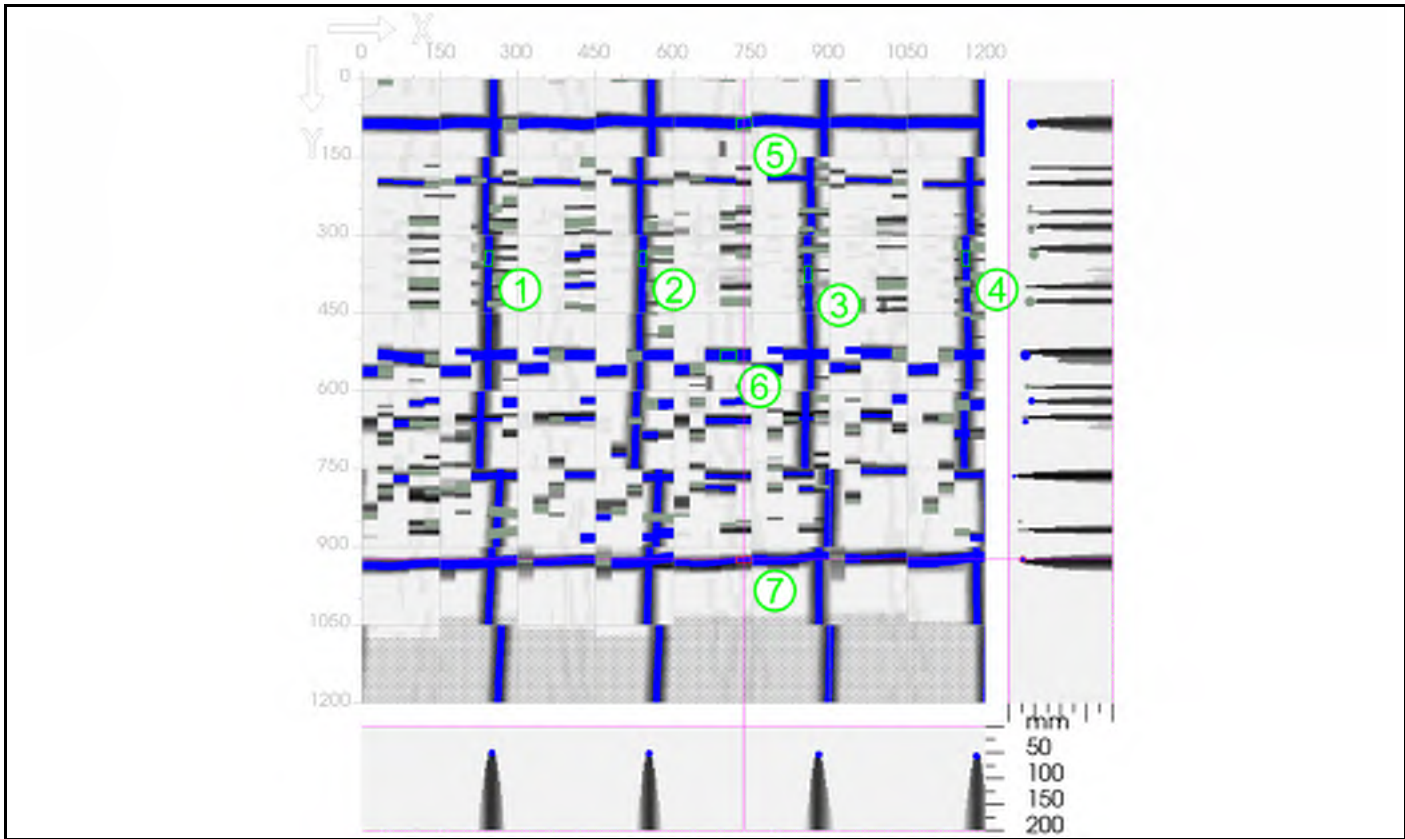
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-20
User:	-		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	258 mm	495 mm	44 mm	14 mm	Vertical	High
2.	563 mm	495 mm	46 mm	14 mm	Vertical	High
3.	894 mm	495 mm	47 mm	14 mm	Vertical	High
4.	1160 mm	645 mm	49 mm	12 mm	Vertical	High
5.	435 mm	91 mm	32 mm	20 mm	Horizontal	High
6.	495 mm	563 mm	26 mm	20 mm	Horizontal	High
7.	495 mm	939 mm	36 mm	20 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 14.fscan
Serial number: 227190008
Date / Time: 2019-10-11 20:52:33
Comment: -



x 735 mm y 924 mm z 0 mm Thickness: 200 mm
Overlay: - mm

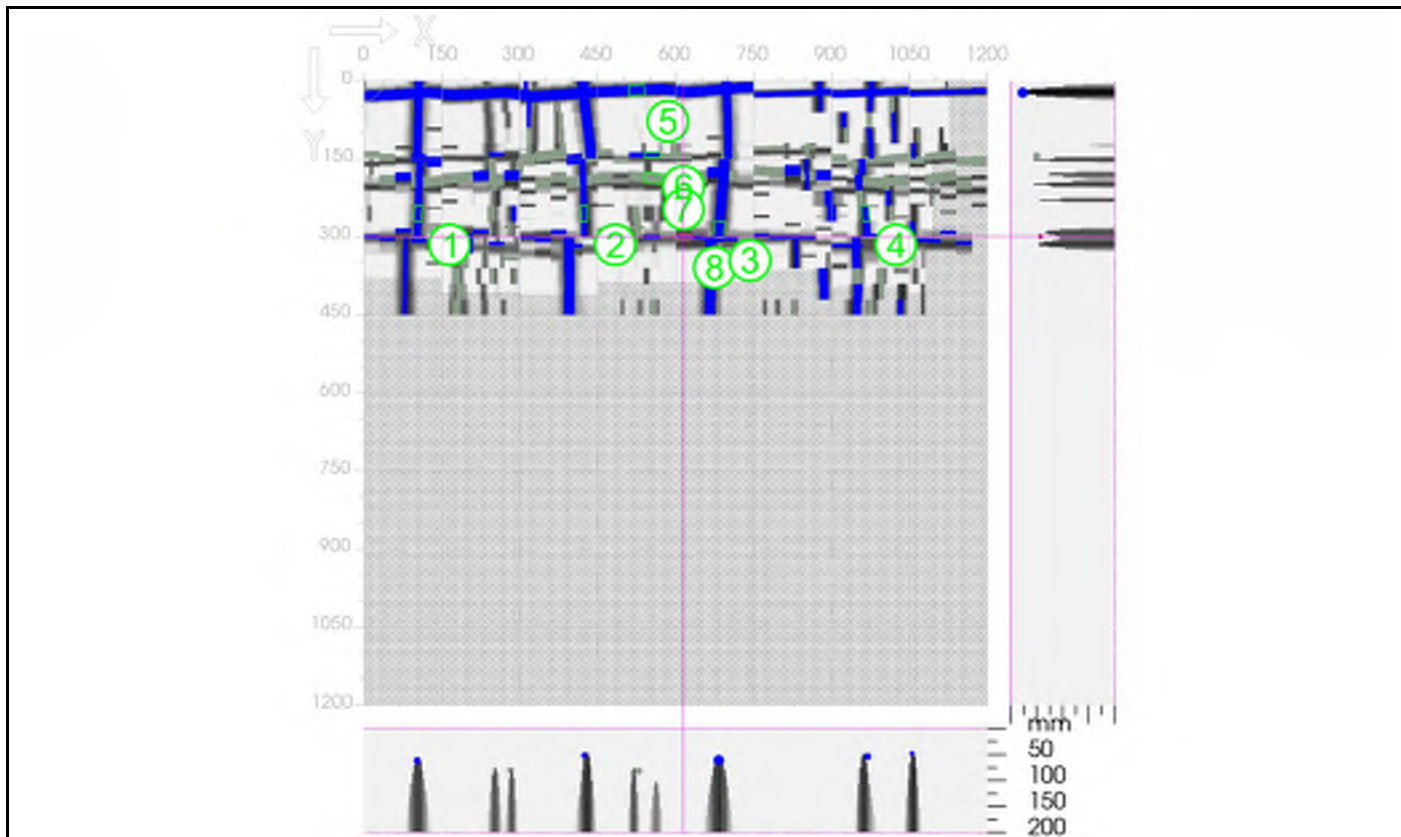
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-20
User:	-		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	244 mm	345 mm	43 mm	14 mm	Vertical	High
2.	541 mm	345 mm	45 mm	14 mm	Vertical	High
3.	859 mm	375 mm	47 mm	14 mm	Vertical	High
4.	1163 mm	345 mm	50 mm	14 mm	Vertical	High
5.	735 mm	87 mm	35 mm	20 mm	Horizontal	High
6.	705 mm	532 mm	24 mm	20 mm	Horizontal	High
7.	735 mm	924 mm	21 mm	12 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 12.fscan
Serial number: 227190008
Date / Time: 2019-10-11 20:44:09
Comment: -



x 615 mm y: 299 mm z 0 mm Thickness: 200 mm
Overlay: - mm

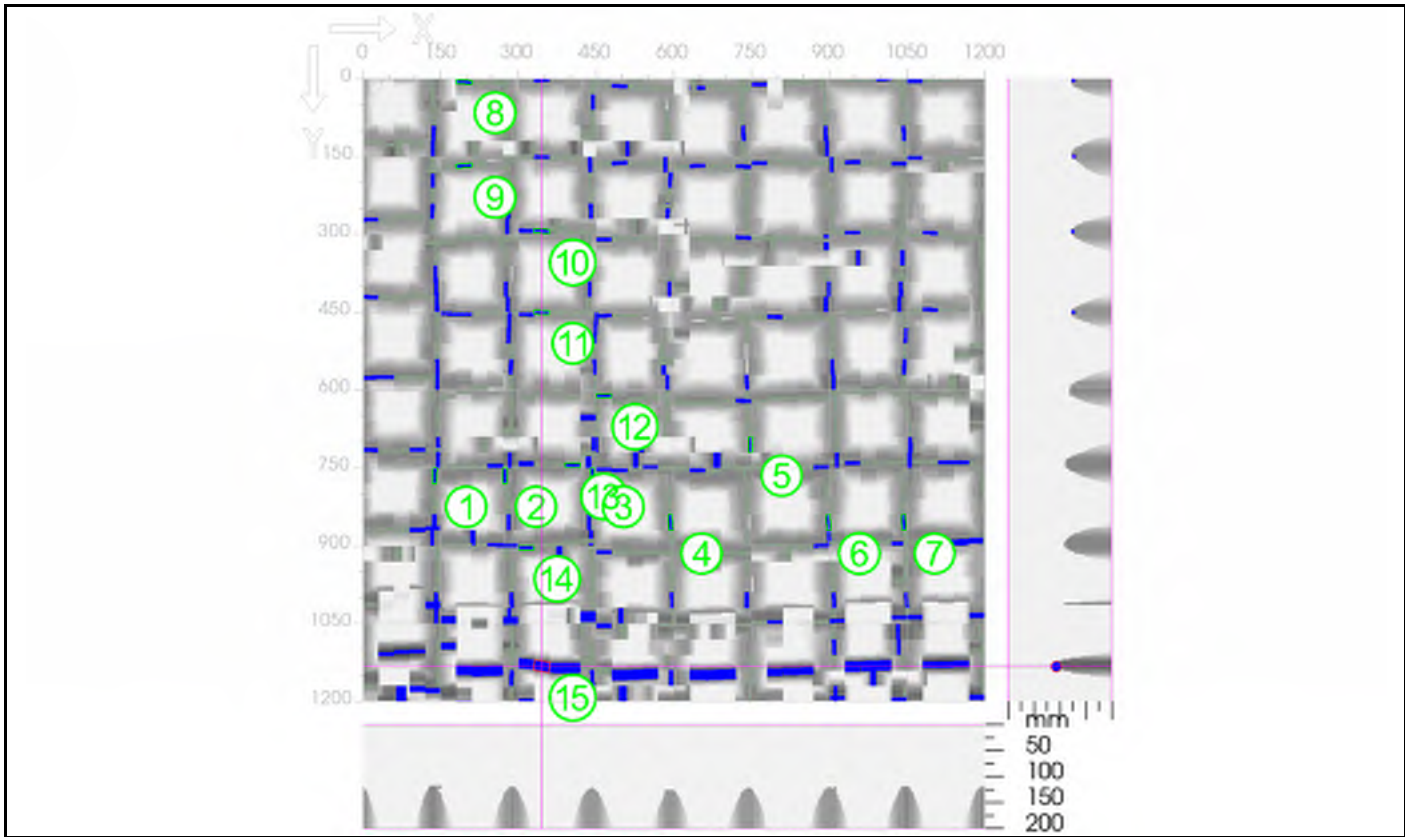
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-20
User:	-		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	104 mm	255 mm	53 mm	14 mm	Vertical	High
2.	424 mm	255 mm	46 mm	12 mm	Vertical	High
3.	683 mm	285 mm	51 mm	20 mm	Vertical	High
4.	964 mm	255 mm	48 mm	14 mm	Vertical	High
5.	525 mm	18 mm	10 mm	20 mm	Horizontal	High
6.	555 mm	143 mm	66 mm	10 mm	Horizontal	High
7.	555 mm	187 mm	60 mm	20 mm	Horizontal	Low
8.	615 mm	299 mm	53 mm	8 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 01.fscan
Serial number: 227190008
Date / Time: 2019-10-11 19:59:16
Comment: -



x 345 mm y: 1133 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-21
User:	-		
Comment:	-		

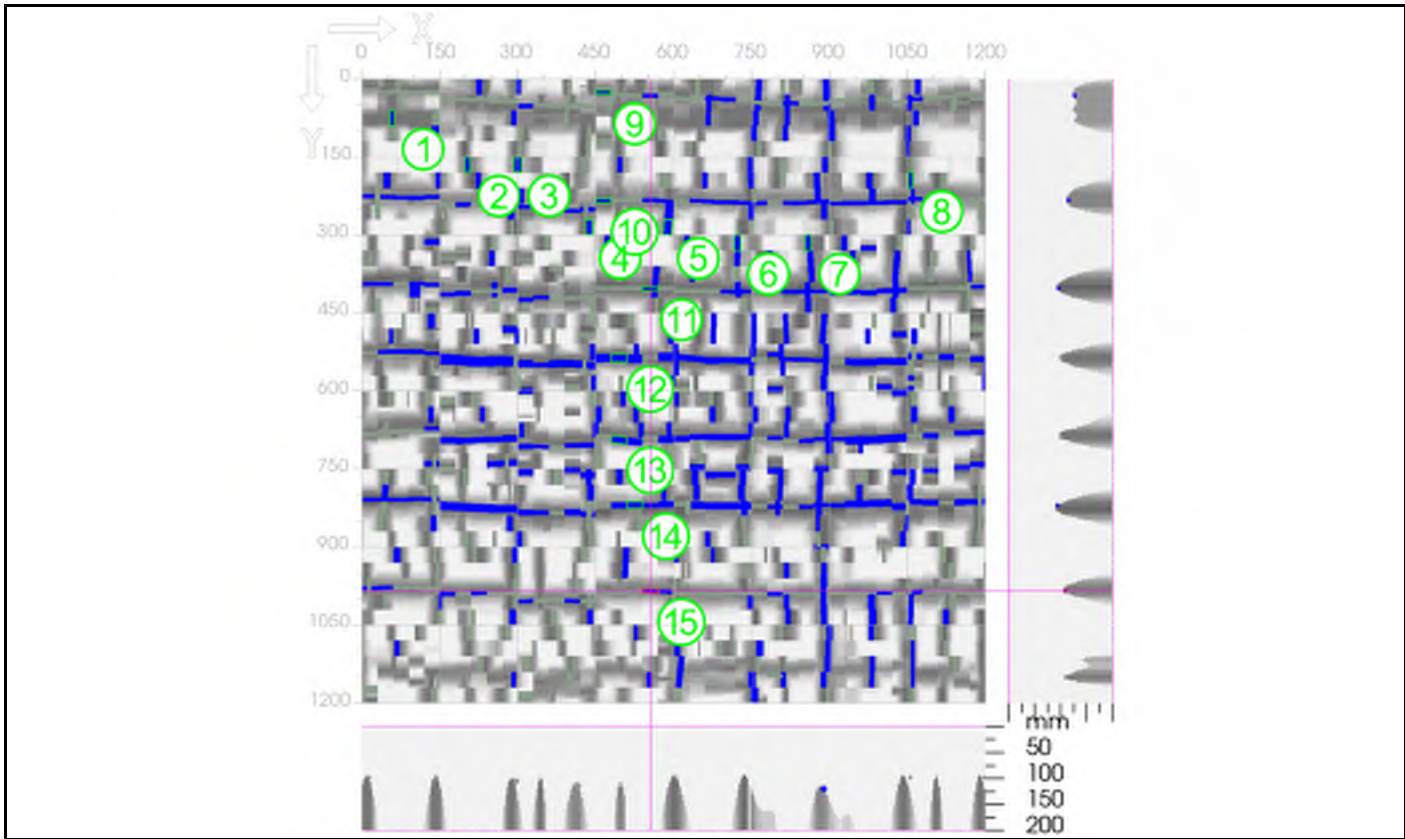
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	139 mm	765 mm	114 mm	8 mm	Vertical	High
2.	274 mm	765 mm	117 mm	8 mm	Vertical	High
3.	442 mm	765 mm	117 mm	8 mm	Vertical	High
4.	593 mm	855 mm	124 mm	8 mm	Vertical	High
5.	748 mm	705 mm	121 mm	8 mm	Vertical	High
6.	898 mm	855 mm	119 mm	8 mm	Vertical	High
7.	1043 mm	855 mm	119 mm	8 mm	Vertical	High
8.	195 mm	6 mm	122 mm	8 mm	Horizontal	High
9.	195 mm	169 mm	122 mm	8 mm	Horizontal	High
10.	345 mm	294 mm	121 mm	8 mm	Horizontal	High
11.	345 mm	450 mm	122 mm	8 mm	Horizontal	High
12.	465 mm	611 mm	117 mm	8 mm	Horizontal	High
13.	405 mm	745 mm	119 mm	10 mm	Horizontal	High

14.	315 mm	904 mm	108 mm	8 mm	Horizontal	High
15.	345 mm	1133 mm	83 mm	20 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 02.fscan
Serial number: 227190008
Date / Time: 2019-10-11 21:00:54
Comment: -



x: 555 mm y: 984 mm z: 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-22
User:	-		
Comment:	-		

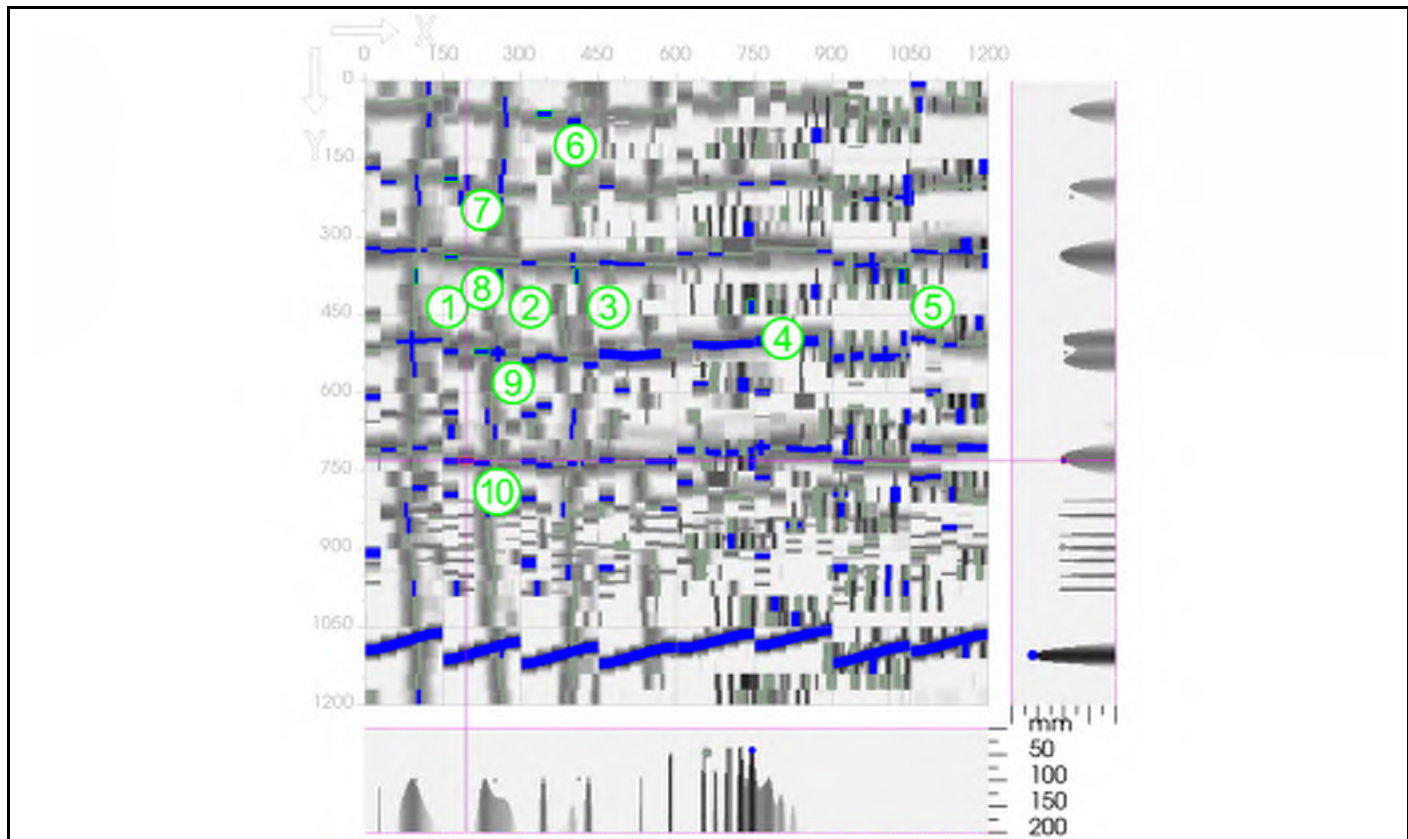
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	58 mm	75 mm	95 mm	10 mm	Vertical	High
2.	203 mm	165 mm	102 mm	10 mm	Vertical	High
3.	300 mm	165 mm	116 mm	14 mm	Vertical	High
4.	437 mm	285 mm	101 mm	12 mm	Vertical	High
5.	587 mm	285 mm	111 mm	16 mm	Vertical	High
6.	722 mm	315 mm	111 mm	12 mm	Vertical	High
7.	859 mm	315 mm	101 mm	12 mm	Vertical	High
8.	1056 mm	195 mm	114 mm	8 mm	Vertical	High
9.	465 mm	26 mm	107 mm	8 mm	Horizontal	High
10.	465 mm	234 mm	96 mm	8 mm	Horizontal	High
11.	555 mm	403 mm	92 mm	8 mm	Horizontal	High
12.	495 mm	536 mm	89 mm	16 mm	Horizontal	High
13.	495 mm	692 mm	100 mm	14 mm	Horizontal	High

14.	525 mm	819 mm	112 mm	12 mm	Horizontal	High
15.	555 mm	984 mm	105 mm	8 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 03.fscan
Serial number: 227190008
Date / Time: 2019-10-11 21:04:49
Comment: -



x 195 mm y: 730 mm z 0 mm Thickness: 200 mm
Overlay: - mm

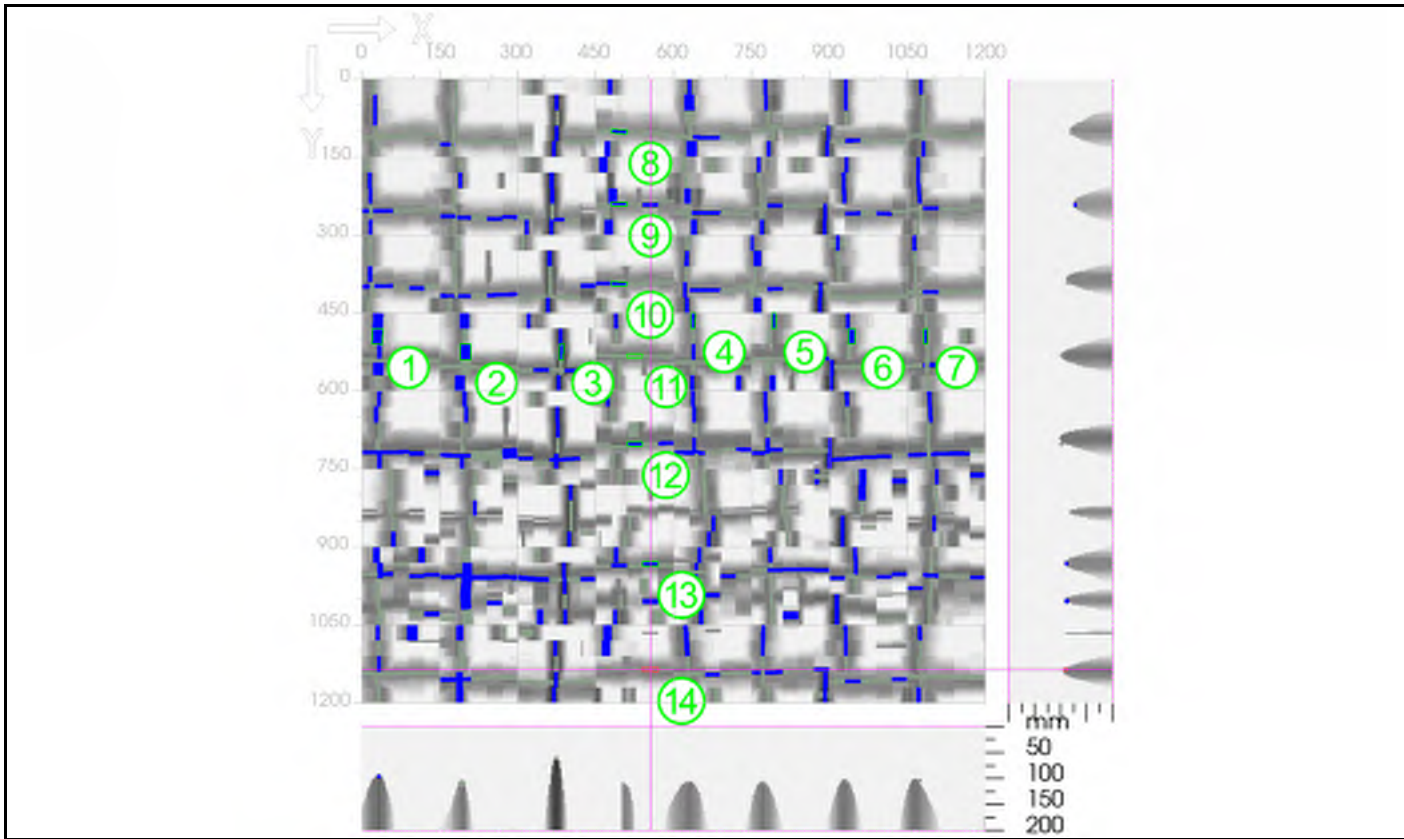
Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-23
User:	-		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	98 mm	375 mm	111 mm	8 mm	Vertical	High
2.	258 mm	375 mm	109 mm	14 mm	Vertical	High
3.	408 mm	375 mm	108 mm	10 mm	Vertical	High
4.	744 mm	435 mm	34 mm	14 mm	Vertical	High
5.	1033 mm	375 mm	40 mm	16 mm	Vertical	High
6.	345 mm	64 mm	106 mm	14 mm	Horizontal	High
7.	165 mm	188 mm	95 mm	12 mm	Horizontal	High
8.	165 mm	339 mm	94 mm	8 mm	Horizontal	High
9.	225 mm	520 mm	112 mm	12 mm	Horizontal	High
10.	195 mm	730 mm	94 mm	12 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File: 04.fscan
Serial number: 227190008
Date / Time: 2019-10-11 21:09:42
Comment: -



x 555 mm y: 1136 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-4
User:	-		
Comment:	-		

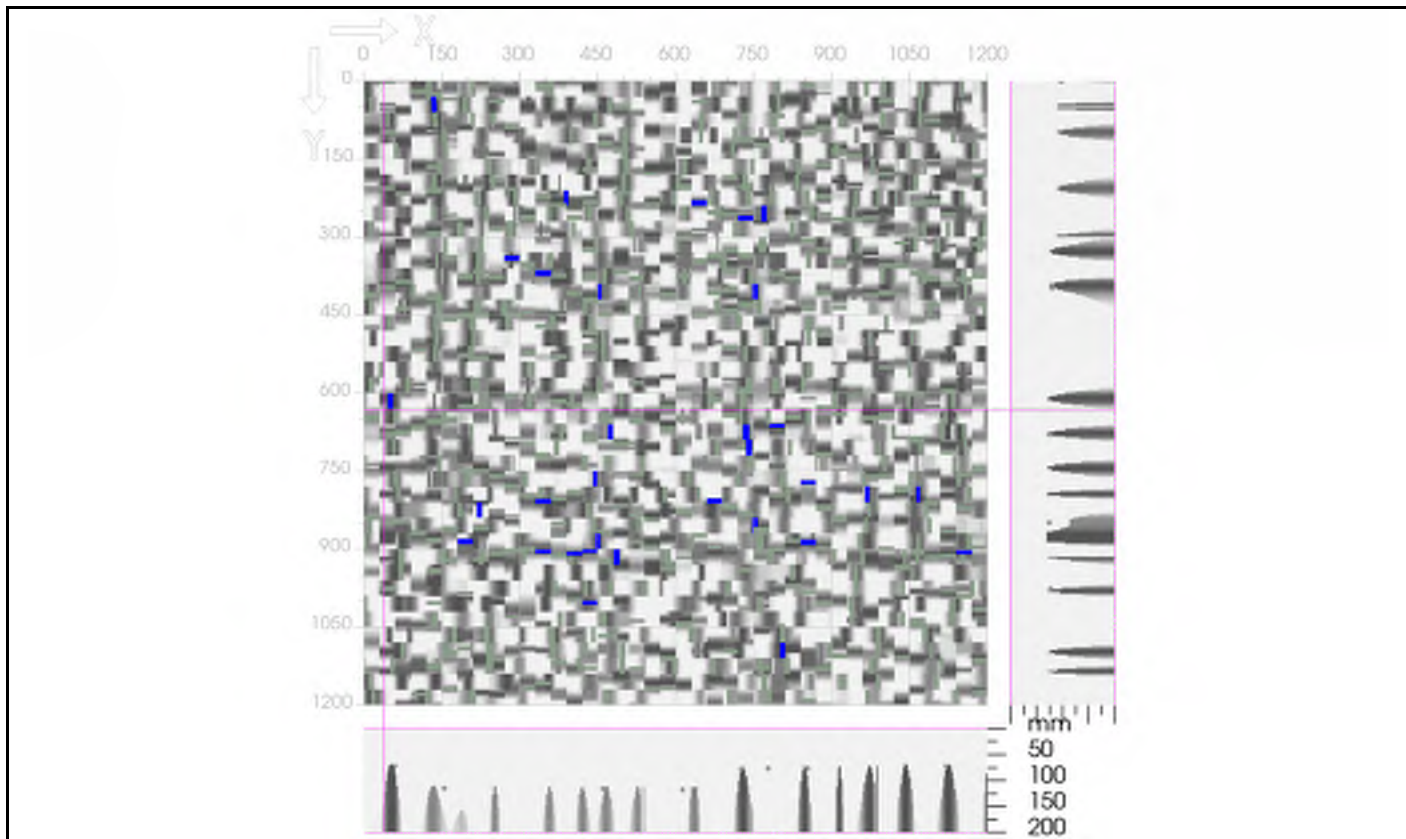
Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	29 mm	495 mm	124 mm	20 mm	Vertical	High
2.	199 mm	525 mm	108 mm	20 mm	Vertical	High
3.	384 mm	525 mm	57 mm	8 mm	Vertical	High
4.	637 mm	465 mm	104 mm	8 mm	Vertical	High
5.	793 mm	465 mm	106 mm	8 mm	Vertical	High
6.	943 mm	495 mm	103 mm	12 mm	Vertical	High
7.	1085 mm	495 mm	99 mm	8 mm	Vertical	High
8.	495 mm	102 mm	118 mm	8 mm	Horizontal	High
9.	495 mm	242 mm	113 mm	8 mm	Horizontal	High
10.	495 mm	394 mm	111 mm	8 mm	Horizontal	High
11.	525 mm	532 mm	100 mm	8 mm	Horizontal	Low
12.	525 mm	702 mm	99 mm	8 mm	Horizontal	High
13.	555 mm	932 mm	107 mm	8 mm	Horizontal	High

14.	555 mm	1136 mm	105 mm	8 mm	Horizontal	Low
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Hilti PROFIS Detection Report

Scan File: 05.fscan
Serial number: 227190008
Date / Time: 2019-10-11 21:13:50
Comment: -



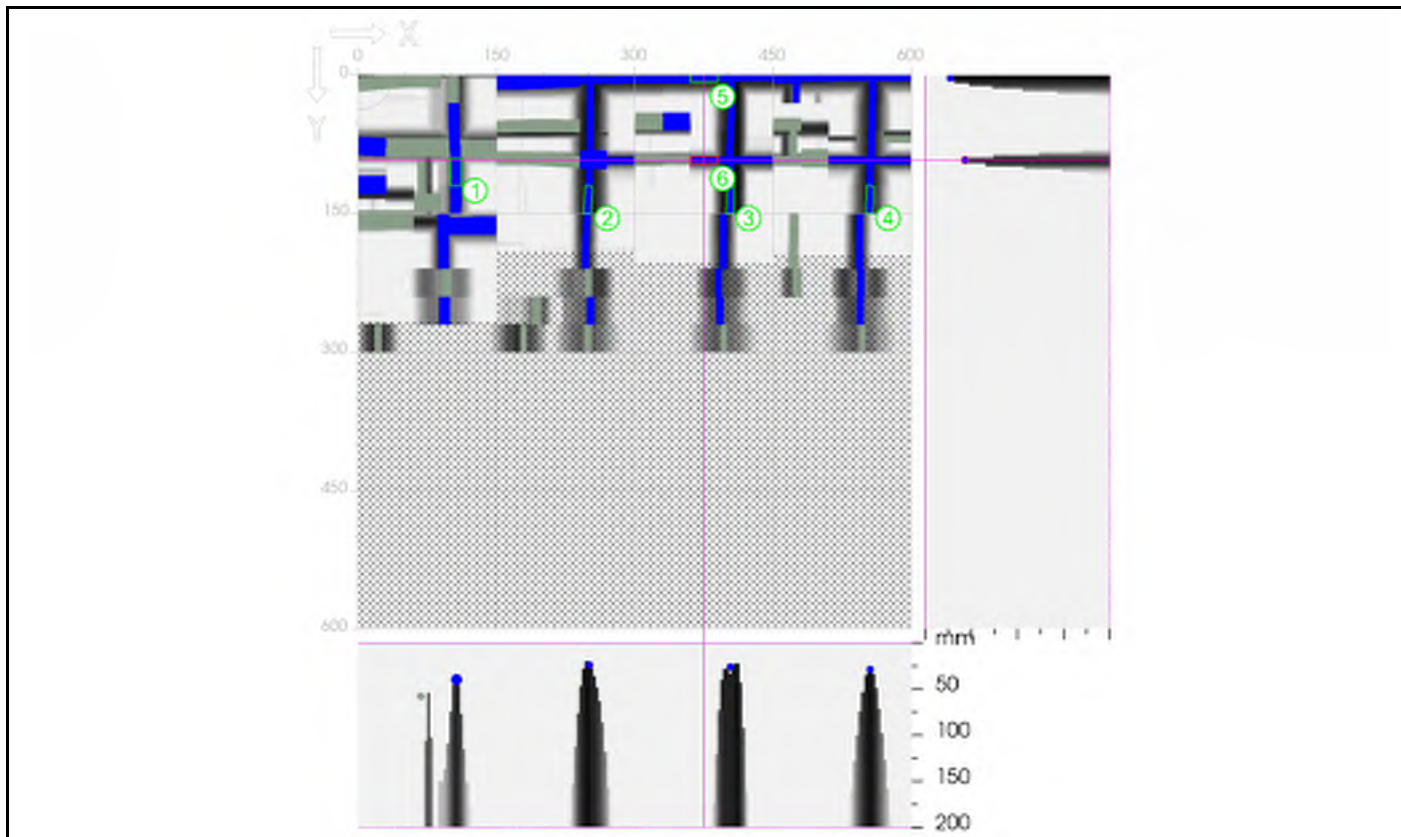
x 39 mm y: 633 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Basement Level 1	Object:	B1-25
User:	-		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Hilti PROFIS Detection Report

Scan File: 111.fscan
Serial number: 227190008
Date / Time: 2019-10-02 22:13:58
Comment: -



x 375 mm y 92 mm z 0 mm Thickness: 200 mm
Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Ground Floor	Object:	G1
User:	BD		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	106 mm	105 mm	34 mm	12 mm	Vertical	High
2.	250 mm	135 mm	21 mm	8 mm	Vertical	High
3.	403 mm	135 mm	21 mm	8 mm	Vertical	High
4.	554 mm	135 mm	24 mm	8 mm	Vertical	High
5.	375 mm	3 mm	23 mm	8 mm	Horizontal	High
6.	375 mm	92 mm	39 mm	8 mm	Horizontal	High

Hilti PROFIS Detection Report

Scan File:

112.fscan

Serial number:

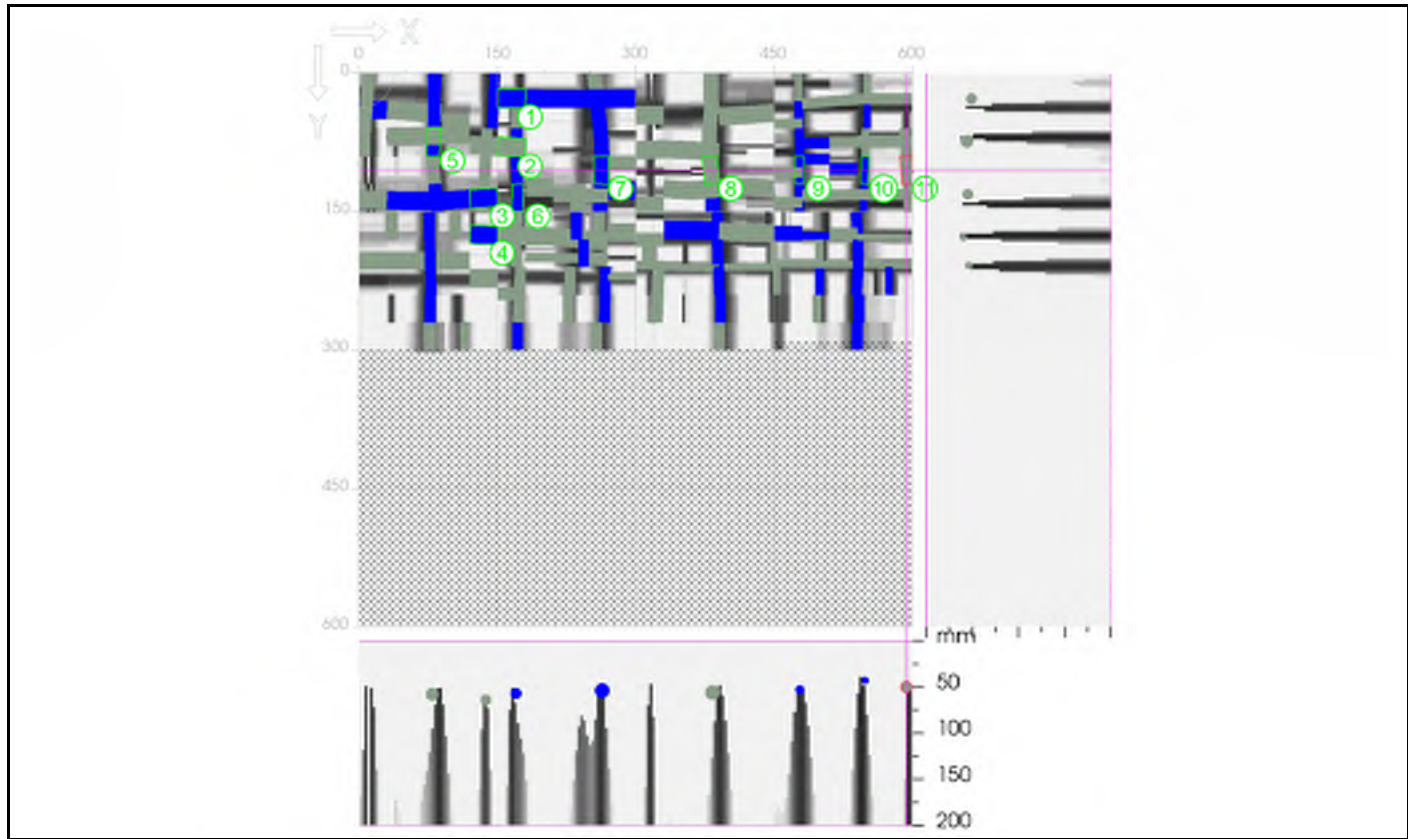
227190008

Date / Time:

2019-10-02 22:15:53

Comment:

-



x 593 mm

y 105 mm

z 0 mm

Thickness: 200 mm

Overlay: - mm

Project name:	CIS Tower	Customer:	Curtins
Location:	Ground Floor	Object:	G1
User:	BD		
Comment:	-		

Ø Horizontal:	14 mm +/- 6 mm	Type:	Input
Ø Vertical:	14 mm +/- 6 mm	Type:	Input
Detection mode:	Auto		

Recorded measurements:	x:	y:	Cover:	Ø:	Orientation:	Quality:
1.	165 mm	27 mm	53 mm	20 mm	Horizontal	High
2.	165 mm	81 mm	47 mm	20 mm	Horizontal	Low
3.	135 mm	135 mm	42 mm	20 mm	Horizontal	High
4.	135 mm	175 mm	42 mm	20 mm	Horizontal	High
5.	81 mm	75 mm	49 mm	14 mm	Vertical	High
6.	173 mm	135 mm	49 mm	12 mm	Vertical	High
7.	263 mm	105 mm	46 mm	16 mm	Vertical	High
8.	383 mm	105 mm	48 mm	16 mm	Vertical	Low
9.	478 mm	105 mm	48 mm	10 mm	Vertical	High
10.	549 mm	105 mm	39 mm	8 mm	Vertical	High
11.	593 mm	105 mm	44 mm	12 mm	Vertical	Low