

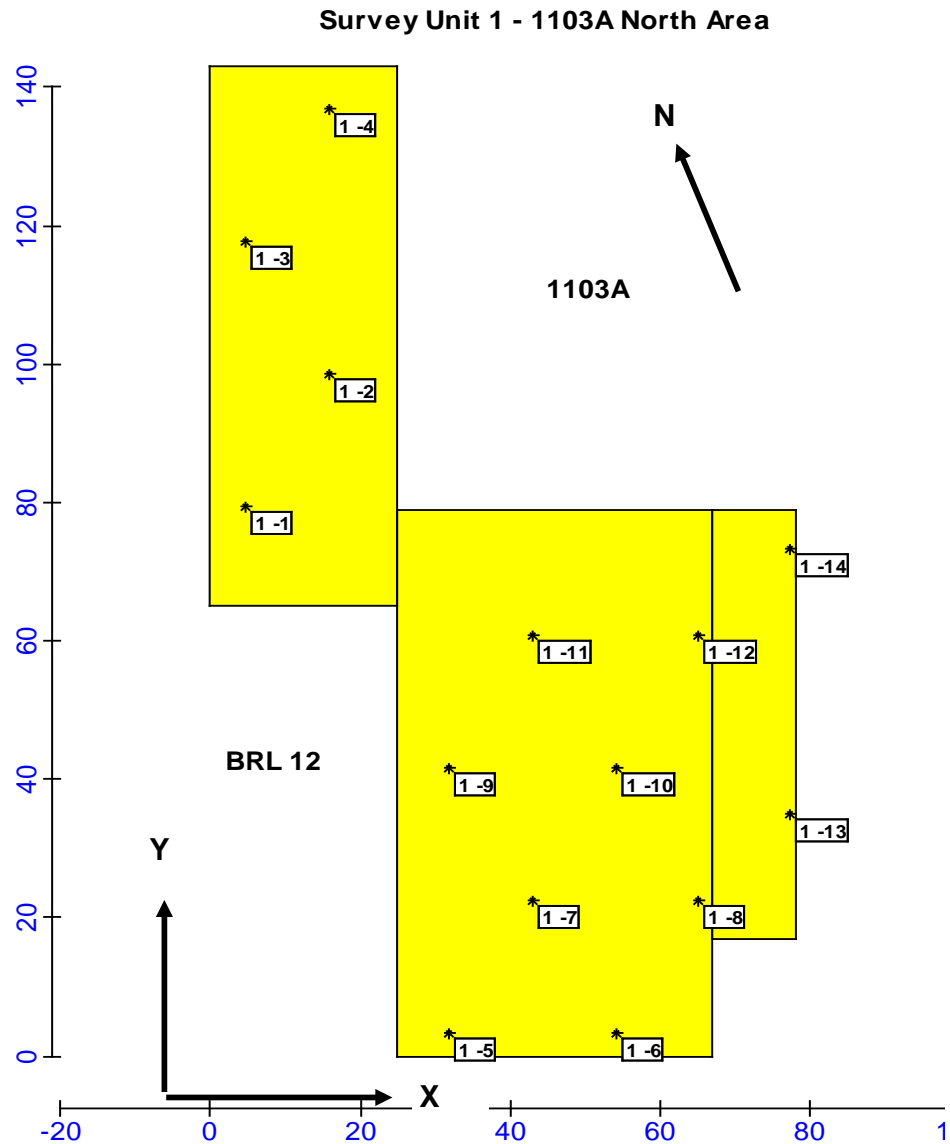
### APG Bldg 1103A Project - FSS Survey Unit Descriptions

Survey Unit ID	Structure	Survey Unit Description	Horiz N-S (ft)	Horiz E-W (ft)	Wall Ht Low (ft)	Wall Ht High (ft)	Surface Area (ft <sup>2</sup> )	Surface Area (m <sup>2</sup> )	MARSSIM Class
1	North Area 1103A	BRL12 Yard					5950	552.8	1
2	South Area	Large Vault Yard					7719	717.1	1
3	East Area	Asphalt East Parking Lot					4650	432.0	2
4	Perimeter Area	North, West, South Border					12500	1161.3	2
5	1103A	Floor North	19.34	48.75	n/a	n/a	942.8	87.6	1
6	1103A	Floor South	19.34	48.75	n/a	n/a	942.8	87.6	1
7	1103A	Interior Walls N & E	38.67	48.75	10	12	923.0	85.7	1
8	1103A	Interior Walls W & S	38.67	48.75	10	12	923.0	85.7	1
9	1103A	Ceiling North	20	50	n/a	n/a	1000.0	92.9	1
10	1103A	Ceiling South	20	50	n/a	n/a	1000.0	92.9	1
11	1103A	Exterior Wall - South	0	50	10	12	550.0	51.1	1
12	1103A	Exterior Walls - N, E & W	40	50	10	12	1350.0	125.4	2
12A	1103A	Entrance Room Interior	9	4.5	8.6	n/a	313.2	29.1	1
12B	1103A	Entrance Room Exterior	9	4.5	8.6	n/a	272.7	25.3	2
13	1103A	Roof	40	50	n/a	n/a	2000.0	185.8	2
14	1103A	Former Shop Area Floor							1
15	BRL12	Floor	39.4	20	0		788.0	73.2	1
19	BRL12 N Vault	Interior Fl, N & E Walls	12.2	20	12		630.4	58.6	1
19A	BRL12 N Vault	Interior Ceil, W & S Walls	12.2	20	12		630.4	58.6	1
19B	BRL12 N Vault	Roof & Exterior Walls	12.2	20	12		1212.0	112.6	2
20	BRL12 S Vault	Interior Surfaces	12.2	20	12		1260.8	117.1	2
20A	BRL12 S Vault	Roof & Exterior Walls	12.2	20	12		1212.0	112.6	2
23	Freestanding Vault	Fl, N & E Walls	20	20	15		1000.0	92.9	1
24	Freestanding Vault	Ceil, W & S Walls	20	20	15		1000.0	92.9	1
25	Freestanding Vault	ext Walls & roof	20	20	15		1600.0	148.6	1*

## Aberdeen Proving Ground - Building 1103A Final Status Survey Results

### APG Building 1103 A Project - FSS Outdoor Area Sampling & Measurement Locations

Measurement No.	Location	Dist. East (X Coord. ft.)	Dist North (Y Coord. ft.)
1-1	Ground	4.7	79.3
1-2	Ground	15.8	98.5
1-3	Ground	4.7	117.7
1-4	Ground	15.8	136.9
1-5	Ground	31.9	3.2
1-6	Ground	54.1	3.2
1-7	Ground	43.0	22.4
1-8	Ground	65.2	22.4
1-9	Ground	31.9	41.6
1-10	Ground	54.1	41.6
1-11	Ground	43.0	60.8
1-12	Ground	65.2	60.8
1-13	Ground	77.4	35.0
1-14	Ground	77.4	73.4



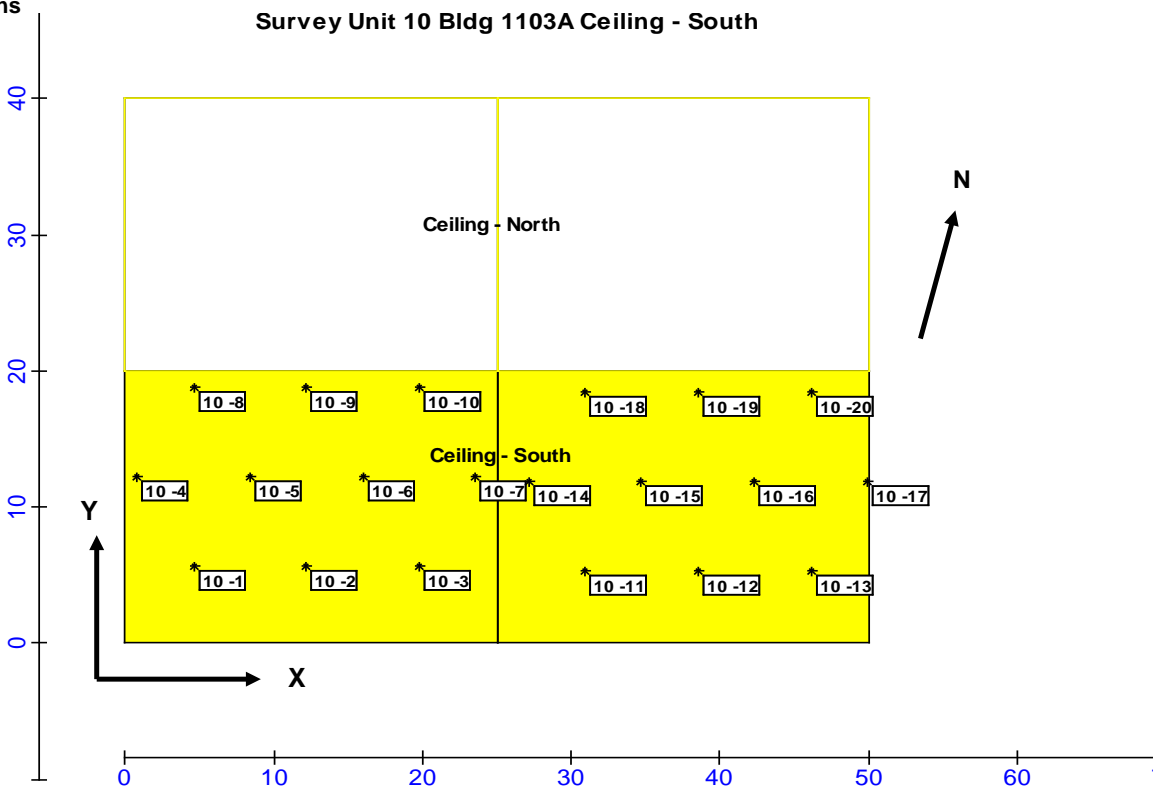
### APG Bldg 1103A Project - FSS Survey Unit Descriptions

Survey Unit ID	Structure	Survey Unit Description	Horiz N-S (ft)	Horiz E-W (ft)	Wall Ht Low (ft)	Wall Ht High (ft)	Surface Area (ft <sup>2</sup> )	Surface Area (m <sup>2</sup> )	MARSSIM Class
1	North Area 1103A	BRL12 Yard					5950	552.8	1
2	South Area	Large Vault Yard					7719	717.1	1
3	East Area	Asphalt East Parking Lot					4650	432.0	2
4	Perimeter Area	North, West, South Border					12500	1161.3	2
5	1103A	Floor North	19.34	48.75	n/a	n/a	942.8	87.6	1
6	1103A	Floor South	19.34	48.75	n/a	n/a	942.8	87.6	1
7	1103A	Interior Walls N & E	38.67	48.75	10	12	923.0	85.7	1
8	1103A	Interior Walls W & S	38.67	48.75	10	12	923.0	85.7	1
9	1103A	Ceiling North	20	50	n/a	n/a	1000.0	92.9	1
10	1103A	Ceiling South	20	50	n/a	n/a	1000.0	92.9	1
11	1103A	Exterior Wall - South	0	50	10	12	550.0	51.1	1
12	1103A	Exterior Walls - N, E & W	40	50	10	12	1350.0	125.4	2
12A	1103A	Entrance Room Interior	9	4.5	8.6	n/a	313.2	29.1	1
12B	1103A	Entrance Room Exterior	9	4.5	8.6	n/a	272.7	25.3	2
13	1103A	Roof	40	50	n/a	n/a	2000.0	185.8	2
14	1103A	Former Shop Area Floor							1
15	BRL12	Floor	39.4	20	0		788.0	73.2	1
19	BRL12 N Vault	Interior Fl, N & E Walls	12.2	20	12		630.4	58.6	1
19A	BRL12 N Vault	Interior Ceil, W & S Walls	12.2	20	12		630.4	58.6	1
19B	BRL12 N Vault	Roof & Exterior Walls	12.2	20	12		1212.0	112.6	2
20	BRL12 S Vault	Interior Surfaces	12.2	20	12		1260.8	117.1	2
20A	BRL12 S Vault	Roof & Exterior Walls	12.2	20	12		1212.0	112.6	2
23	Freestanding Vault	Fl, N & E Walls	20	20	15		1000.0	92.9	1
24	Freestanding Vault	Ceil, W & S Walls	20	20	15		1000.0	92.9	1
25	Freestanding Vault	ext Walls & roof	20	20	15		1600.0	148.6	1*

## Aberdeen Proving Ground - Building 1103A Final Status Survey Results

APG Building 1103A - FSS Fixed Alpha Measurement Locations

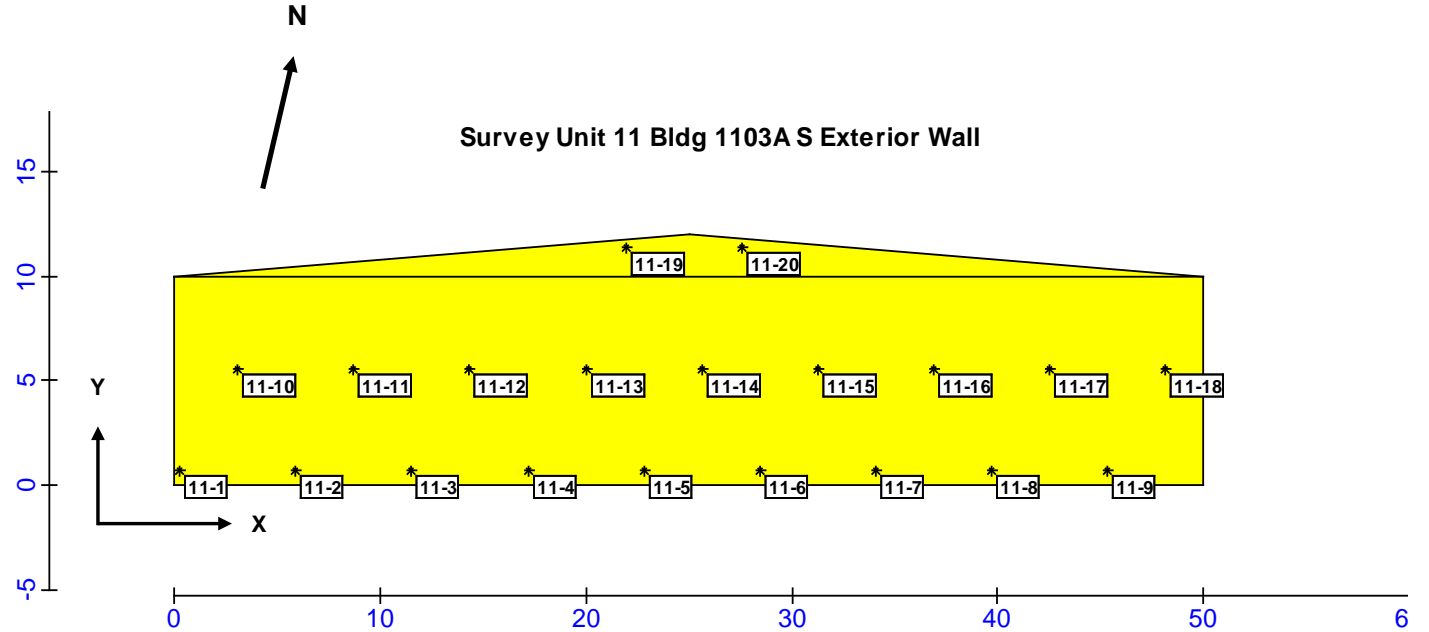
Measurement No.	Location	Dist. East (X Coord. ft.)	Dist. North (Y Coord. ft.)
10 -1	Ceiling	4.6	5.7
10 -2	Ceiling	12.2	5.7
10 -3	Ceiling	19.8	5.7
10 -4	Ceiling	0.8	12.3
10 -5	Ceiling	8.4	12.3
10 -6	Ceiling	16.0	12.3
10 -7	Ceiling	23.6	12.3
10 -8	Ceiling	4.6	18.8
10 -9	Ceiling	12.2	18.8
10 -10	Ceiling	19.8	18.8
10 -11	Ceiling	30.9	5.3
10 -12	Ceiling	38.5	5.3
10 -13	Ceiling	46.1	5.3
10 -14	Ceiling	27.1	11.9
10 -15	Ceiling	34.7	11.9
10 -16	Ceiling	42.3	11.9
10 -17	Ceiling	49.9	11.9
10 -18	Ceiling	30.9	18.5
10 -19	Ceiling	38.5	18.5
10 -20	Ceiling	46.1	18.5



## Aberdeen Proving Ground - Building 1103A Final Status Survey Results

### APG Building 1103A - FSS Fixed Alpha Measurement Locations

Measure ment No.	Location	Dist up Wall Y coord (ft)	DistEast X coord (ft)
11-1	S Wall	0.7	0.3
11-2	S Wall	0.7	5.9
11-3	S Wall	0.7	11.5
11-4	S Wall	0.7	17.2
11-5	S Wall	0.7	22.8
11-6	S Wall	0.7	28.4
11-7	S Wall	0.7	34.1
11-8	S Wall	0.7	39.7
11-9	S Wall	0.7	45.3
11-10	S Wall	5.6	3.1
11-11	S Wall	5.6	8.7
11-12	S Wall	5.6	14.4
11-13	S Wall	5.6	20
11-14	S Wall	5.6	25.6
11-15	S Wall	5.6	31.3
11-16	S Wall	5.6	36.9
11-17	S Wall	5.6	42.5
11-18	S Wall	5.6	48.2
11-19	S Wall	11.4	21.9
11-20	S Wall	11.4	27.6

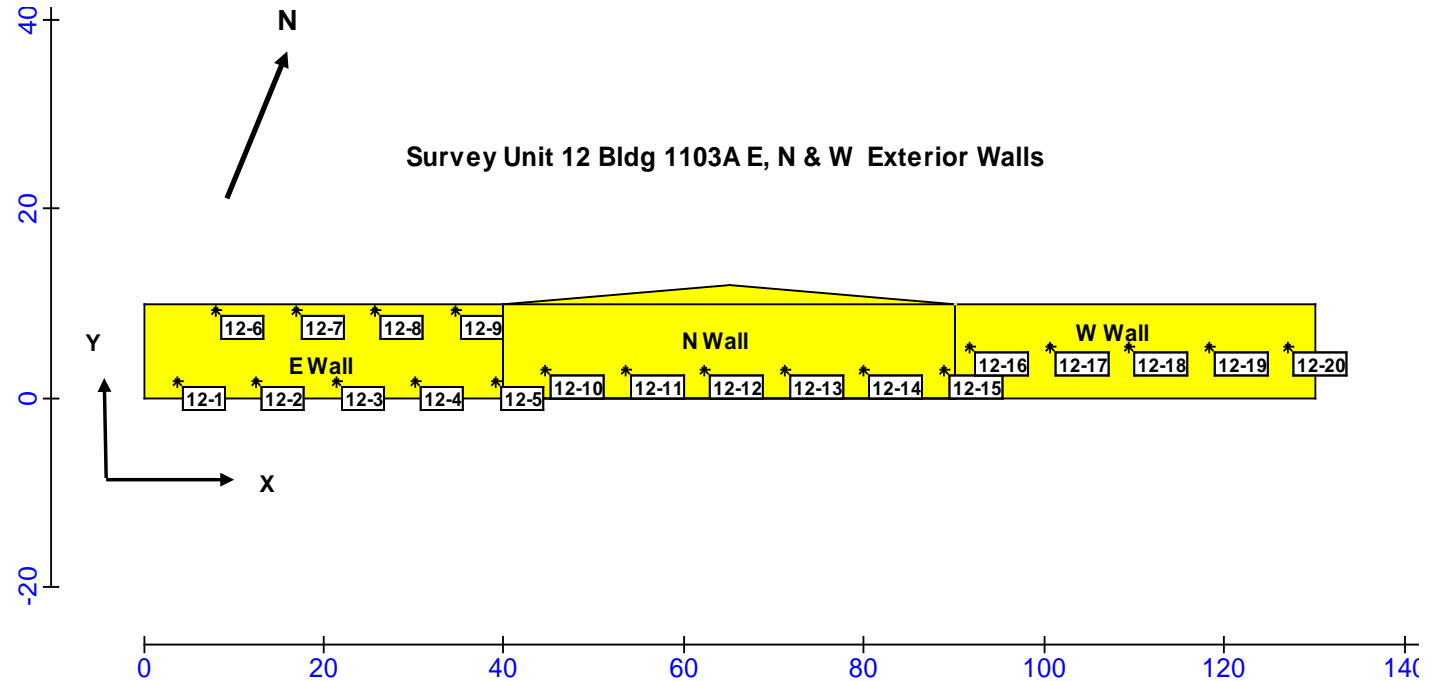


Area: Area 4

## Aberdeen Proving Ground - Building 1103A Final Status Survey Results

**APG Building 1103A - FSS Fixed Alpha Measurement Locations**

Measure ment No.	Location	Dist X coord (ft)	Dist up Wall Y coord (ft)
12-1	E Wall	3.7	1.8
12-2	E Wall	12.5	1.8
12-3	E Wall	21.3	1.8
12-4	E Wall	30.2	1.8
12-5	E Wall	39.0	1.8
12-6	E Wall	8.1	9.4
12-7	E Wall	16.9	9.4
12-8	E Wall	25.8	9.4
12-9	E Wall	34.6	9.4
12-10	N Wall	44.6	3.0
12-11	N Wall	53.5	3.0
12-12	N Wall	62.3	3.0
12-13	N Wall	71.1	3.0
12-14	N Wall	79.9	3.0
12-15	N Wall	88.8	3.0
12-16	W Wall	91.7	5.5
12-17	W Wall	100.6	5.5
12-18	W Wall	109.4	5.5
12-19	W Wall	118.2	5.5
12-20	W Wall	127.1	5.5



Area: Area 6

X Coord	Y Coord	Label	Value	Type	Historical
3.7	1.8	12-1		Systeme	
12.5	1.8	12-2		Systeme	

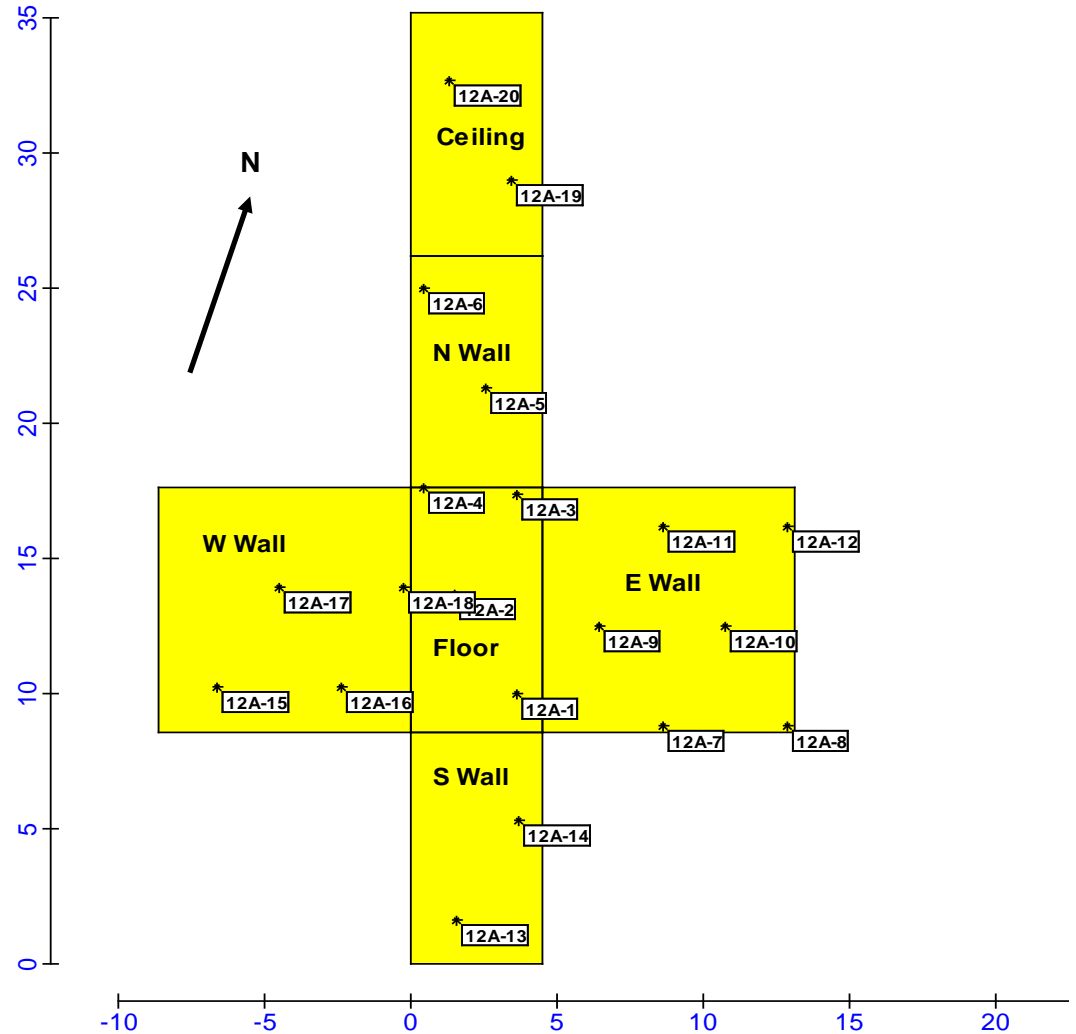
## Aberdeen Proving Ground - Building 1103A Final Status Survey Results

### FSS Fixed Alpha Measurement Locations

Measure ment No.	Location	2D X Coord. (ft)	2 D Y Coord. (ft)	3D Dist E X coord (ft)	3D Dist N Y coord (ft)	3D Dist Height Z coord (ft)
12A-1	Floor	3.6	10.0	3.6	10.0	0.0
12A-2	Floor	1.5	13.7	1.5	13.7	0.0
12A-3	Floor	3.6	17.4	3.6	17.4	0.0
12A-4	N Wall	0.5	17.6	0.5	17.6	0.0
12A-5	N Wall	2.6	21.3	2.6	17.6	3.7
12A-6	N Wall	0.5	25.0	0.5	17.6	7.4
12A-7	E Wall	8.6	8.9	4.5	0.3	4.1
12A-8	E Wall	12.8	8.9	4.5	0.3	8.3
12A-9	E Wall	6.5	12.5	4.5	3.9	2.0
12A-10	E Wall	10.7	12.5	4.5	3.9	6.2
12A-11	E Wall	8.6	16.2	4.5	7.6	4.1
12A-12	E Wall	12.8	16.2	4.5	7.6	8.3
12A-13	S Wall	1.5	1.6	1.5	0.0	1.6
12A-14	S Wall	3.7	5.3	3.7	0.0	5.3
12A-15	W Wall	-6.6	10.3	0.0	1.7	2.0
12A-16	W Wall	-2.4	10.3	0.0	1.7	6.2
12A-17	W Wall	-4.5	13.9	0.0	5.3	4.1
12A-18	W Wall	-0.2	13.9	0.0	5.3	8.4
12A-19	Ceiling	3.5	29.0	3.5	2.8	8.6
12A-20	Ceiling	1.3	32.7	1.3	6.5	8.6

Translation Rules From 2D to 3D Coordinates for Survey Unit 12A			
Surface	3D X	3D Y	3D Z
Floor	2DX	2DY	0
N. Wall	2DX	17.6	2DY-17.6
E. Wall	4.5	2DY-8.6	2DX-4.5
S. Wall	2DX	0	2DY
W. Wall	0	2DY-8.6	8.6+2DX
Ceiling	2DX	2DY-26.2	8.6

### Survey Unit 12A - Bldg 1103A Entrance Room Interior



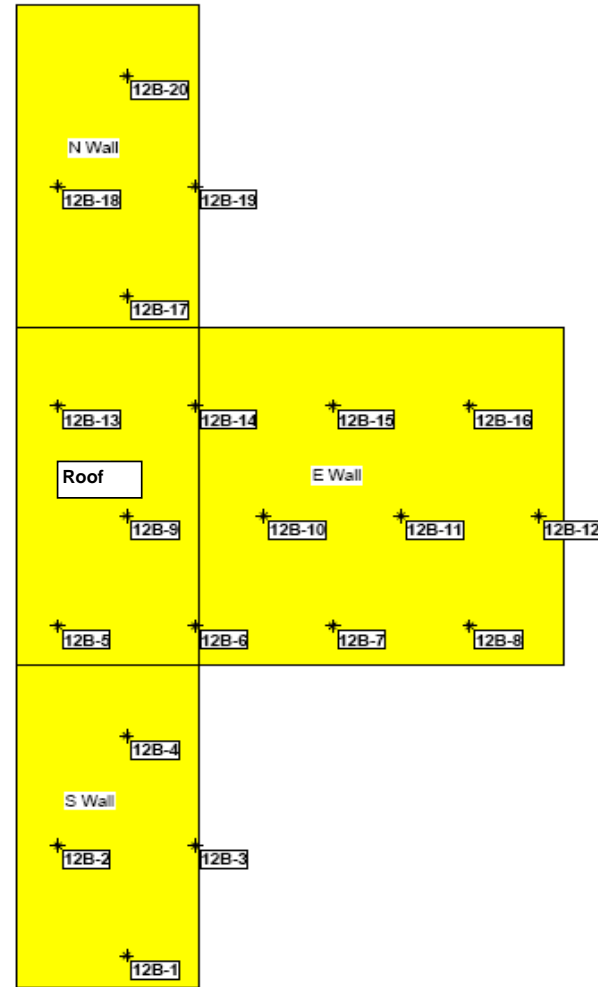
## Aberdeen Proving Ground - Building 1103A Final Status Survey Results

FSS Fixed Alpha Measurement Locations

Measure ment No.	Location	Dist. North	Dist. East	Dist. Up Wall
12B-1	S Wall	x	2.7	0.8
12B-2	S Wall	x	1.0	3.8
12B-3	S Wall	x	4.4	3.8
12B-4	S Wall	x	2.7	6.7
12B-5	Roof	1.0	1.0	x
12B-6	Roof	1.0	4.4	x
12B-7	E Wall	1.0	x	5.7
12B-8	E Wall	1.0	x	2.3
12B-9	Roof	4.0	2.7	x
12B-10	E Wall	4.0	x	7.0
12B-11	E Wall	4.0	x	3.6
12B-12	E Wall	4.0	x	0.2
12B-13	Roof	6.9	1.0	x
12B-14	Roof	6.9	4.4	x
12B-15	E Wall	6.9	x	5.3
12B-16	E Wall	6.9	x	1.9
12B-17	N Wall	x	2.7	7.8
12B-18	N Wall	x	1.0	4.8
12B-19	N Wall	x	4.4	4.8
12B-20	N Wall	x	2.7	1.9



Survey Unit 12B Entry Room Exterior (1103A)

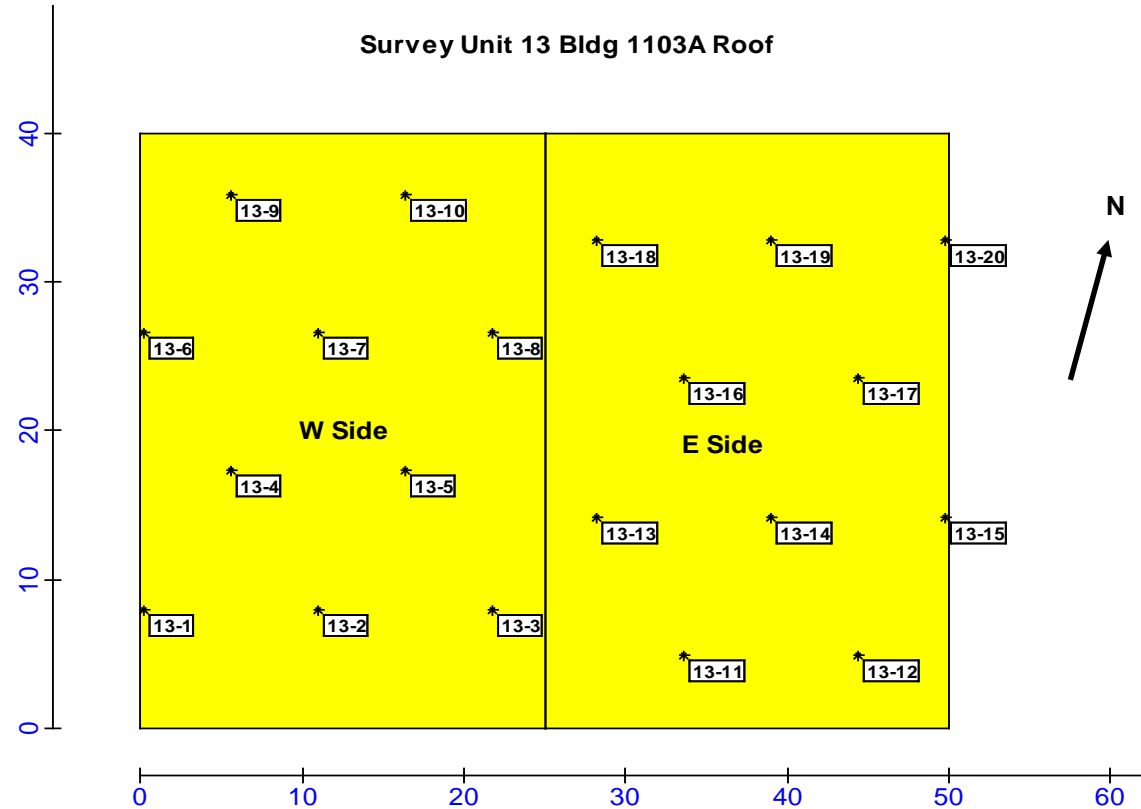




## Aberdeen Proving Ground - Building 1103A Final Status Survey Results

APG Building 1103A - FSS Fixed Alpha Measurement Locations

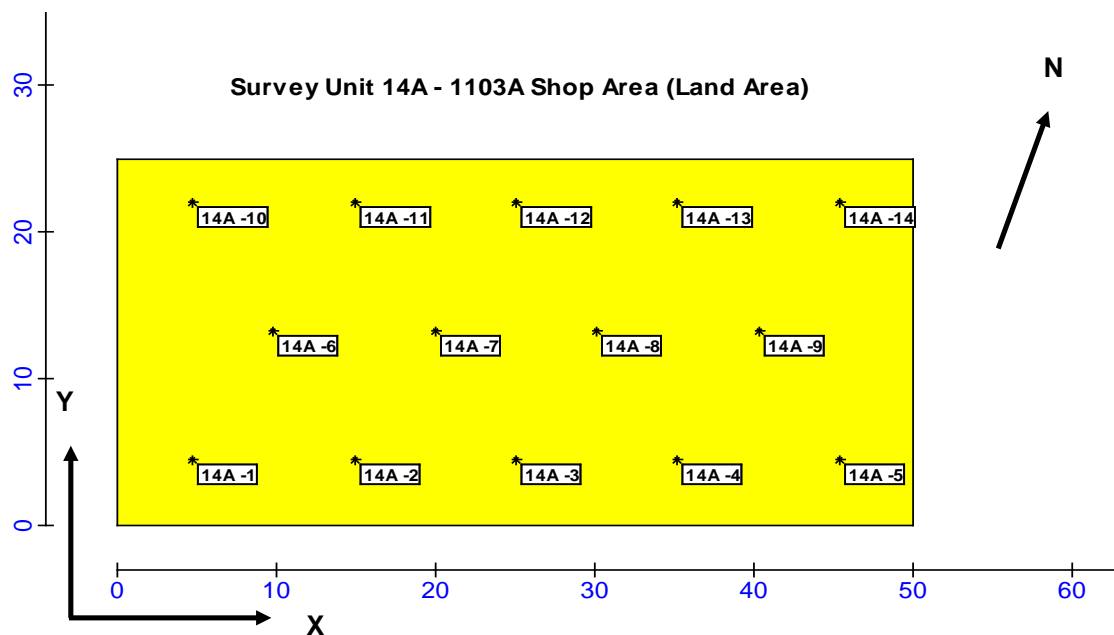
Measure ment No.	Location	Dist. East (X Coord. ft.)	Dist North (Y Coord. ft.)	Dist up Wall (Z coord ft.)
13-1	Roof	0.3	8	n/a
13-2	Roof	11	8	n/a
13-3	Roof	21.8	8	n/a
13-4	Roof	5.6	17.3	n/a
13-5	Roof	16.4	17.3	n/a
13-6	Roof	0.3	26.6	n/a
13-7	Roof	11	26.6	n/a
13-8	Roof	21.8	26.6	n/a
13-9	Roof	5.6	35.9	n/a
13-10	Roof	16.4	35.9	n/a
13-11	Roof	33.6	4.9	n/a
13-12	Roof	44.4	4.9	n/a
13-13	Roof	28.2	14.2	n/a
13-14	Roof	39	14.2	n/a
13-15	Roof	49.7	14.2	n/a
13-16	Roof	33.6	23.5	n/a
13-17	Roof	44.4	23.5	n/a
13-18	Roof	28.2	32.8	n/a
13-19	Roof	39	32.8	n/a
13-20	Roof	49.7	32.8	n/a



## Aberdeen Proving Ground - Building 1103A Final Status Survey Results

### APG Building 1103 A Project - FSS Outdoor Area Sampling & Measurement Locations

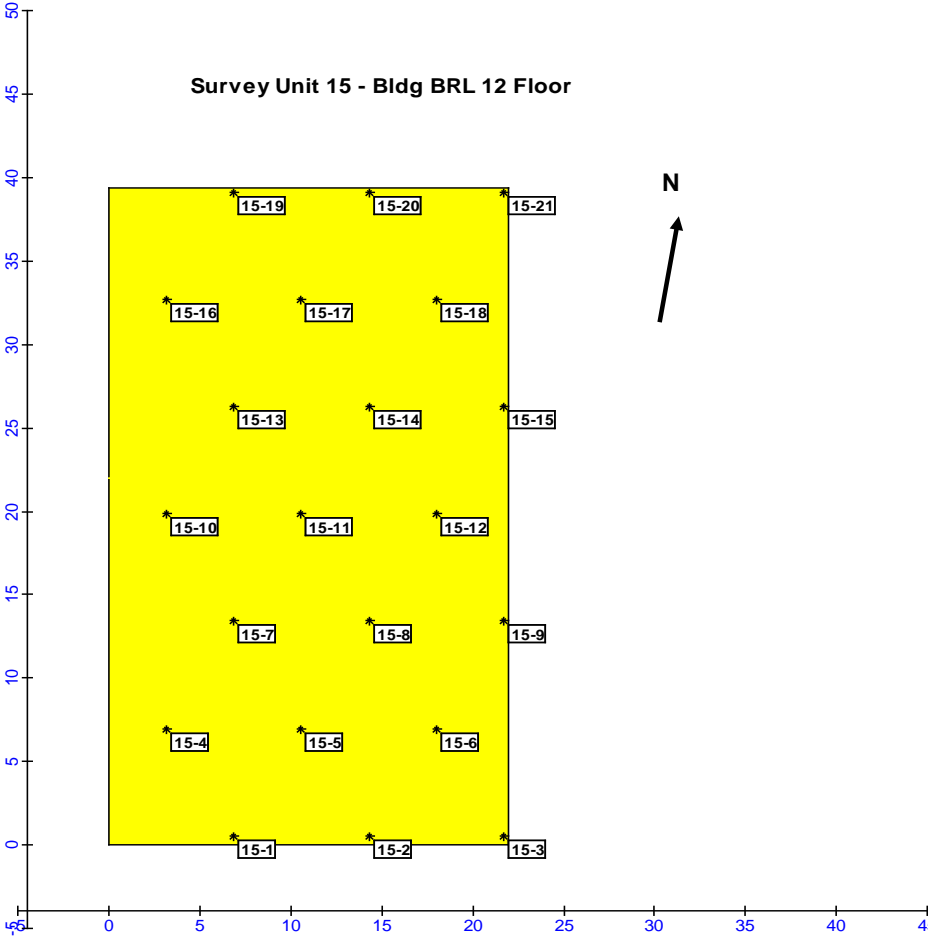
Measure ment No.	Location	Dist. East (X Coord. ft.)	Dist North (Y Coord. ft.)
14A -1	Ground	4.8	4.5
14A -2	Ground	14.9	4.5
14A -3	Ground	25.1	4.5
14A -4	Ground	35.2	4.5
14A -5	Ground	45.4	4.5
14A -6	Ground	9.9	13.3
14A -7	Ground	20	13.3
14A -8	Ground	30.2	13.3
14A -9	Ground	40.3	13.3
14A -10	Ground	4.8	22.1
14A -11	Ground	14.9	22.1
14A -12	Ground	25.1	22.1
14A -13	Ground	35.2	22.1
14A -14	Ground	45.4	22.1



Aberdeen Proving Ground - Building 1103A Final Status Survey Results

APG Building BRL12 - FSS Fixed Alpha Measurement Locations

Measurement No.	Location	Dist. East (X Coord. ft.)	Dist North (Y Coord. ft.)	Dist up Wall (Z coord ft.)
15-1	Floor	6.8	0.6	n/a
15-2	Floor	14.3	0.6	n/a
15-3	Floor	21.7	0.6	n/a
15-4	Floor	3.1	7	n/a
15-5	Floor	10.6	7	n/a
15-6	Floor	18	7	n/a
15-7	Floor	6.8	13.4	n/a
15-8	Floor	14.3	13.4	n/a
15-9	Floor	21.7	13.4	n/a
15-10	Floor	3.1	19.9	n/a
15-11	Floor	10.6	19.9	n/a
15-12	Floor	18	19.9	n/a
15-13	Floor	6.8	26.3	n/a
15-14	Floor	14.3	26.3	n/a
15-15	Floor	21.7	26.3	n/a
15-16	Floor	3.1	32.7	n/a
15-17	Floor	10.6	32.7	n/a
15-18	Floor	18	32.7	n/a
15-19	Floor	6.8	39.2	n/a
15-20	Floor	14.3	39.2	n/a
15-21	Floor	21.7	39.2	n/a



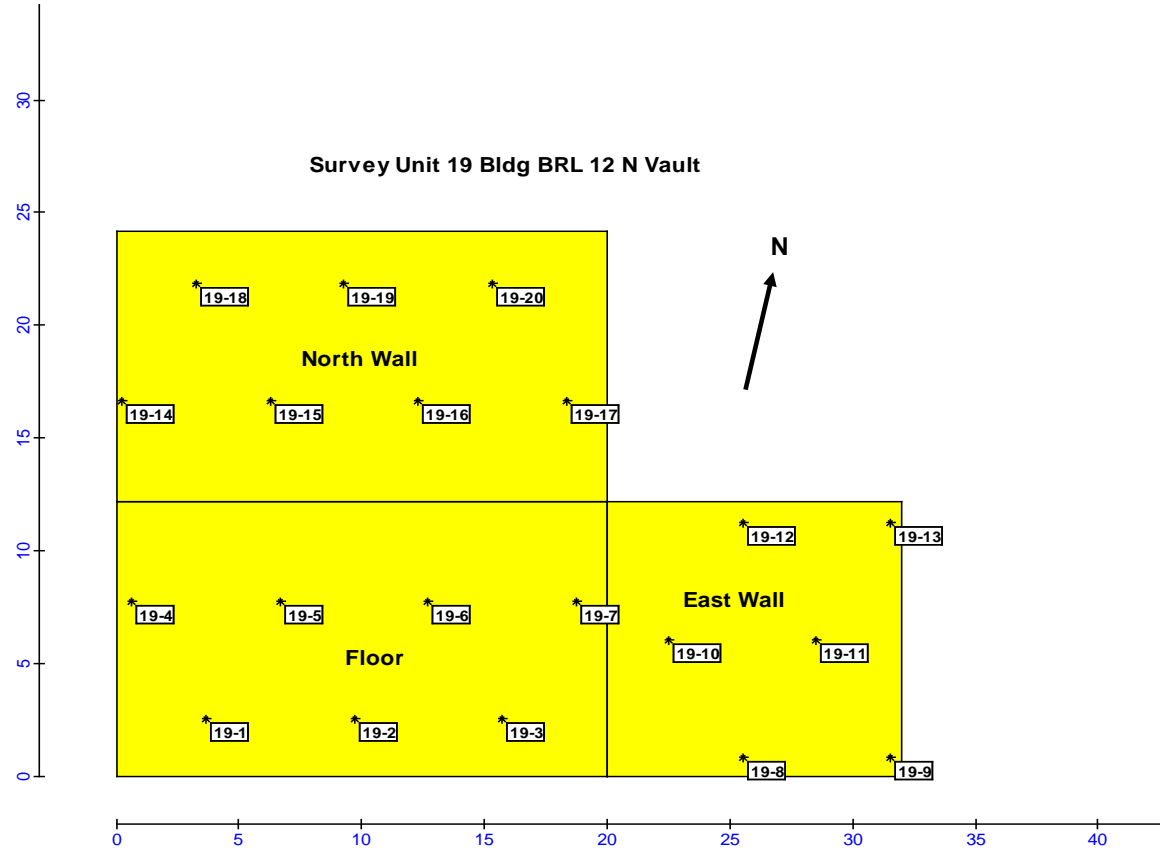
## Aberdeen Proving Ground - Building 1103A Final Status Survey Results

### APG Building BRL12, N Vault - FSS Fixed Alpha Measurement Locations

Measurement No.	Location	2D X Coord. (ft)	2D Y Coord. (ft)	3D Dist E X coord (ft)	3D Dist N Y coord (ft)	3D Dist up Wall Z coord (ft)
19-1	Floor	3.7	2.5	3.7	2.5	0
19-2	Floor	9.7	2.5	9.7	2.5	0
19-3	Floor	15.7	2.5	15.7	2.5	0
19-4	Floor	0.7	7.8	0.7	7.8	0
19-5	Floor	6.7	7.8	6.7	7.8	0
19-6	Floor	12.7	7.8	12.7	7.8	0
19-7	Floor	18.7	7.8	18.7	7.8	0
19-8	E Wall	25.5	0.8	20	0.8	5.5
19-9	E Wall	31.6	0.8	20	0.8	11.6
19-10	E Wall	22.5	6	20	6	2.5
19-11	E Wall	28.5	6	20	6	8.5
19-12	E Wall	25.5	11.3	20	11.3	5.5
19-13	E Wall	31.6	11.3	20	11.3	11.6
19-14	N Wall	0.2	16.6	0.2	12.2	4.4
19-15	N Wall	6.3	16.6	6.3	12.2	4.4
19-16	N Wall	12.3	16.6	12.3	12.2	4.4
19-17	N Wall	18.3	16.6	18.3	12.2	4.4
19-18	N Wall	3.2	21.9	3.2	12.2	9.7
19-19	N Wall	9.3	21.9	9.3	12.2	9.7
19-20	N Wall	15.3	21.9	15.3	12.2	9.7

Translation Rules From 2D to 3D  
Coordinates for Survey Unit 19

Surface	3D X	3D Y	3D Z
Floor	2DX	2DY	0
E Wall	20	2DY	2DX-20
N Wall	2DX	12.2	2DY-12.2



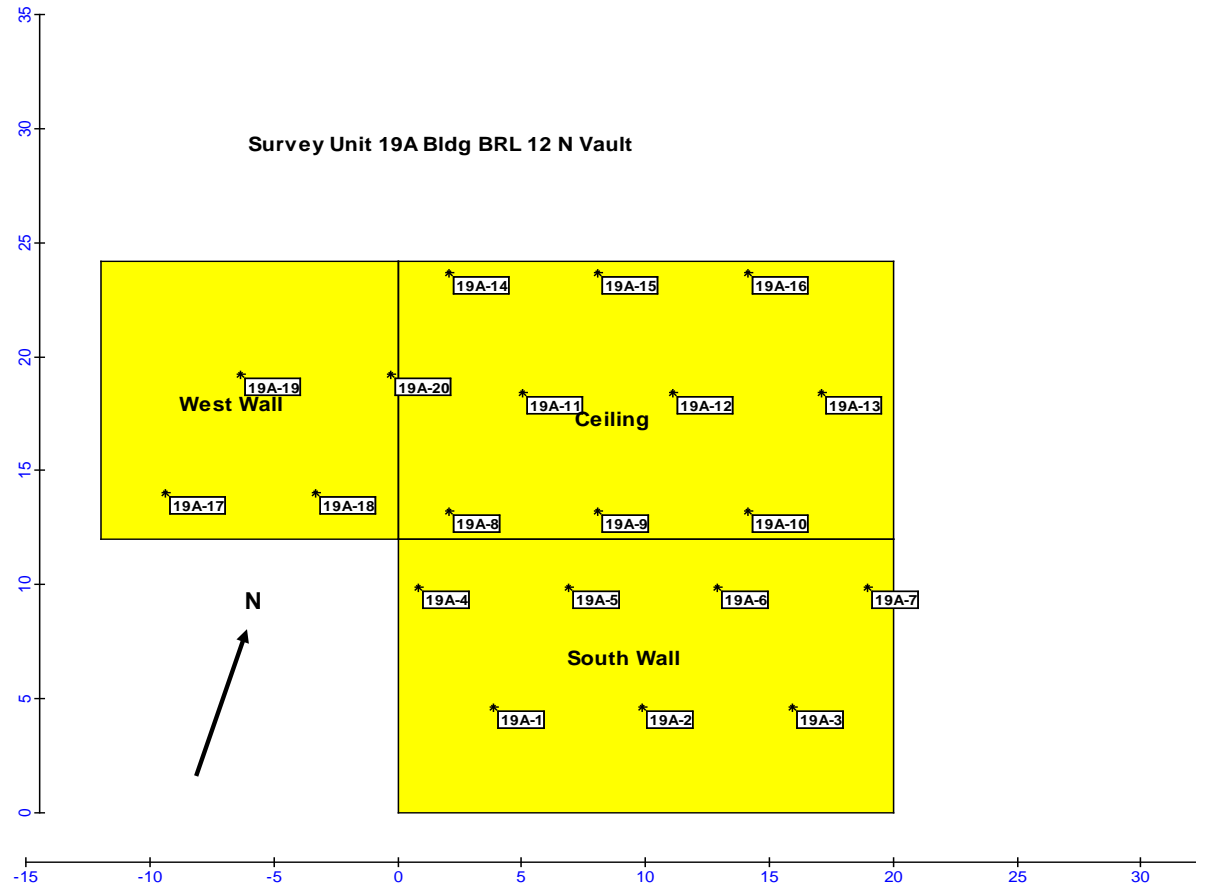
Aberdeen Proving Ground - Building 1103A Final Status Survey Results

FSS Fixed Alpha Measurement Locations

Measurement No.	Location	2D X Coord. (ft)	2D Y Coord. (ft)	3D Dist E X coord (ft)	3D Dist N Y coord (ft)	3D Dist Height Z coord (ft)
19A-1	S Wall	3.9	4.6	3.9	0	4.6
19A-2	S Wall	9.9	4.6	9.9	0	4.6
19A-3	S Wall	15.9	4.6	15.9	0	4.6
19A-4	S Wall	0.8	9.9	0.8	0	9.9
19A-5	S Wall	6.9	9.9	6.9	0	9.9
19A-6	S Wall	12.9	9.9	12.9	0	9.9
19A-7	S Wall	18.9	9.9	18.9	0	9.9
19A-8	Ceiling	2	13.2	2	1.2	12
19A-9	Ceiling	8.1	13.2	8.1	1.2	12
19A-10	Ceiling	14.1	13.2	14.1	1.2	12
19A-11	Ceiling	5.1	18.5	5.1	6.5	12
19A-12	Ceiling	11.1	18.5	11.1	6.5	12
19A-13	Ceiling	17.1	18.5	17.1	6.5	12
19A-14	Ceiling	2	23.7	2	11.7	12
19A-15	Ceiling	8.1	23.7	8.1	11.7	12
19A-16	Ceiling	14.1	23.7	14.1	11.7	12
19A-17	W Wall	-9.4	14	0	2	2.6
19A-18	W Wall	-3.3	14	0	2	8.7
19A-19	W Wall	-6.3	19.2	0	7.2	5.7
19A-20	W Wall	-0.3	19.2	0	7.2	11.7

Translation Rules From 2D to 3D Coordinates for Survey Unit 19A

Surface	3D X	3D Y	3D Z
S Wall	2DX	0	2DY
Ceiling	2DX	2DY-12	12
W Wall	0	2DY-12	12+2Dx



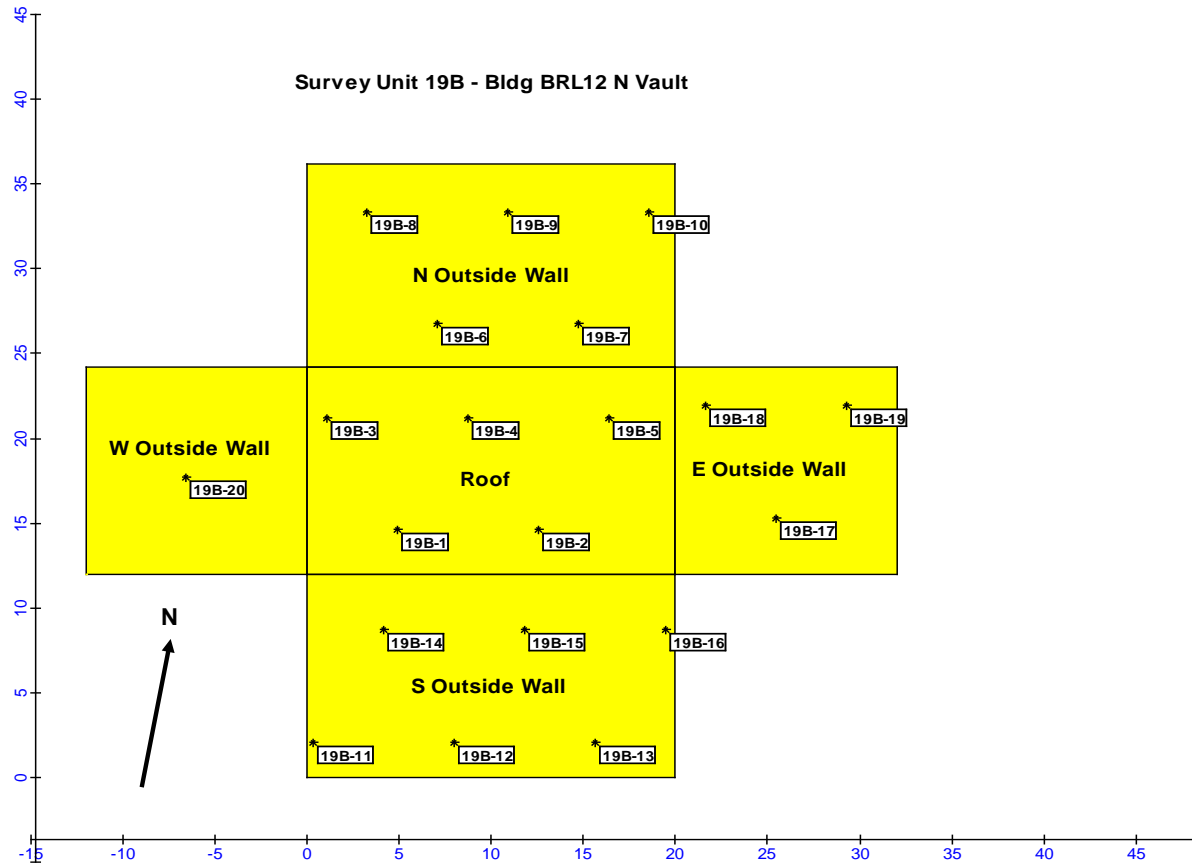
## Aberdeen Proving Ground - Building 1103A Final Status Survey Results

### FSS Fixed Alpha Measurement Locations

Measurement No.	Location	2D X Coord. (ft)	2D Y Coord. (ft)	3D Dist E X coord (ft)	3D Dist N Y coord (ft)	3D Dist Height Z coord (ft)
19B-1	Roof	6	27.3	6	15.3	12
19B-2	Roof	15.4	27.3	15.4	15.3	12
19B-3	Roof	9.1	33.4	9.1	21.4	12
19B-4	Roof	18.5	33.4	18.5	21.4	12
19B-5	Roof	4.4	41.5	4.4	29.5	12
19B-6	N Wall	7.1	26.8	7.1	12.2	9.4
19B-7	N Wall	14.7	26.8	14.7	12.2	9.4
19B-8	N Wall	3.2	33.4	3.2	12.2	2.8
19B-9	N Wall	10.9	33.4	10.9	12.2	2.8
19B-10	N Wall	18.6	33.4	18.6	12.2	2.8
19B-11	S Wall	0.3	2.1	0.3	0	2.1
19B-12	S Wall	8	2.1	8	0	2.1
19B-13	S Wall	15.7	2.1	15.7	0	2.1
19B-14	S Wall	4.2	8.7	4.2	0	8.7
19B-15	S Wall	11.8	8.7	11.8	0	8.7
19B-16	S Wall	19.5	8.7	19.5	0	8.7
19B-17	E Wall	25.5	15.3	20	3.3	6.5
19B-18	E Wall	21.7	22	20	10	10.3
19B-19	E Wall	29.3	22	20	10	2.7
19B-20	W Wall	-6.6	17.7	0	5.7	5.4

Translation Rules From 2D to 3D  
Coordinates for Survey Unit 19B

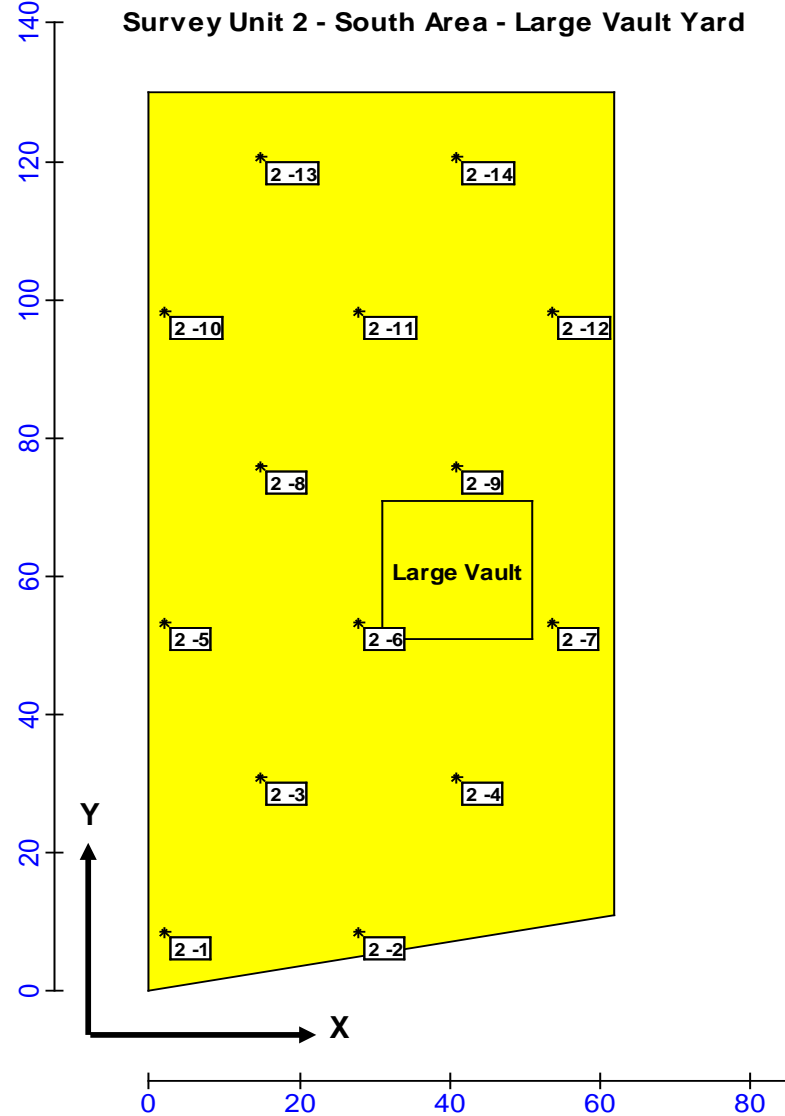
Translation Rules from 2D to 3D Coordinates			
Surface	3D X	3D Y	3D Z
Roof	2DX	2DY-12	12
N. Wall	2DX	12.2	36.2-2DY
S. Wall	2DX	0	2DY



## Aberdeen Proving Ground - Building 1103A Final Status Survey Results

### APG Building 1103 A Project - FSS Outdoor Area Sampling & Measurement Locations

Measurement No.	Location	Dist. East (X Coord. ft.)	Dist North (Y Coord. ft.)
2-1	Ground	1.9	8.6
2-2	Ground	27.8	8.6
2-3	Ground	14.9	31.1
2-4	Ground	40.7	31.1
2-5	Ground	1.9	53.5
2-6	Ground	27.8	53.5
2-7	Ground	53.7	53.5
2-8	Ground	14.9	75.9
2-9	Ground	40.7	75.9
2-10	Ground	1.9	98.3
2-11	Ground	27.8	98.3
2-12	Ground	53.7	98.3
2-13	Ground	14.9	120.7
2-14	Ground	40.7	120.7



Area: Area 8

X Coord	Y Coord	Label	Value	Type	Historical
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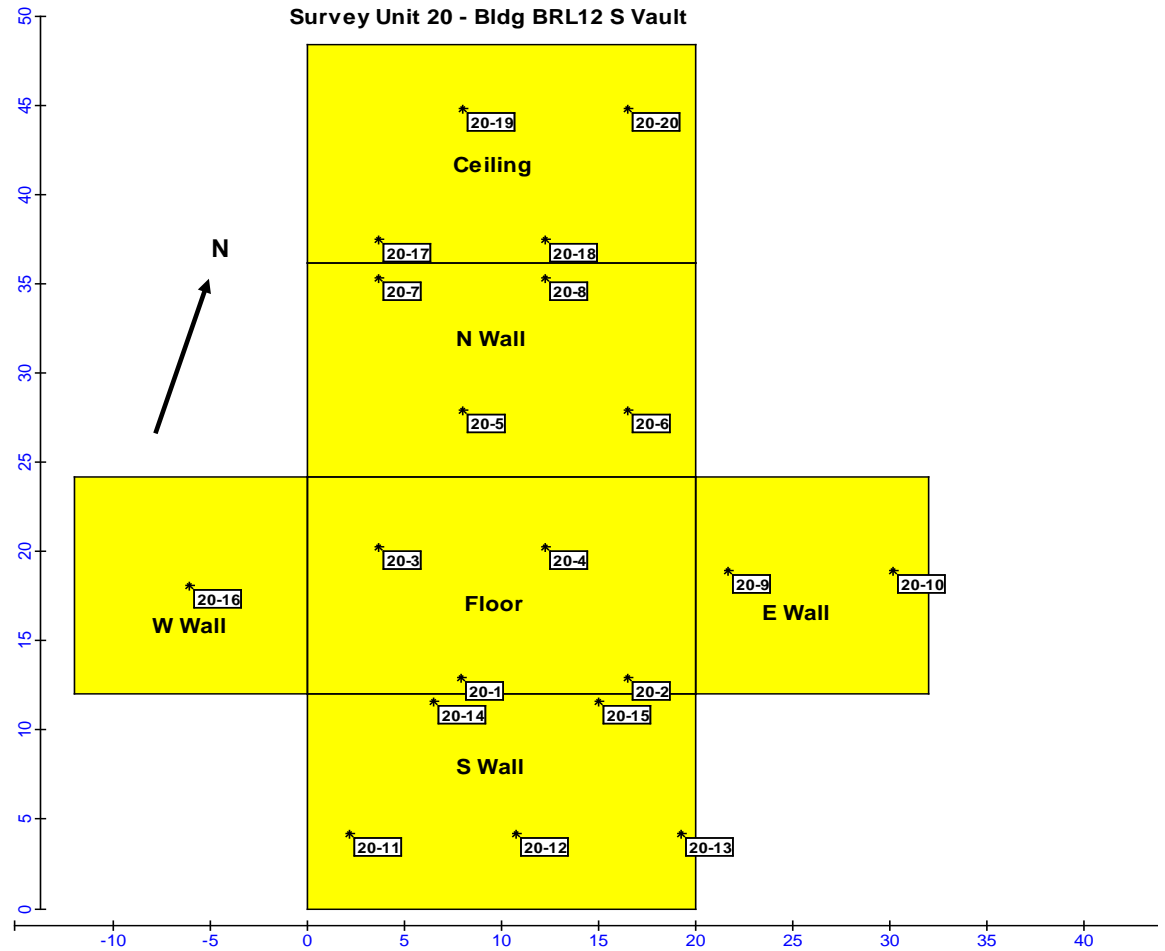
## Aberdeen Proving Ground - Building 1103A Final Status Survey Results

### FSS Fixed Alpha Measurement Locations

Measurement No.	Location	2D X Coord. (ft)	2D Y Coord. (ft)	3D Dist E X coord (ft)	3D Dist N Y coord (ft)	3D Dist Height Z coord (ft)
20-1	Floor	8	12.9	8	12.9	0
20-2	Floor	16.5	12.9	16.5	12.9	0
20-3	Floor	3.7	20.3	3.7	20.3	0
20-4	Floor	12.2	20.3	12.2	20.3	0
20-5	N Wall	8	27.9	8	12.2	8.3
20-6	N Wall	16.5	27.9	16.5	12.2	8.3
20-7	N Wall	3.7	35.3	3.7	12.2	0.9
20-8	N Wall	12.3	35.3	12.3	12.2	0.9
20-9	E Wall	21.6	19	20	7	10.6
20-10	E Wall	30.2	19	20	7	2
20-11	S Wall	2.2	4.2	2.2	0	4.2
20-12	S Wall	10.7	4.2	10.7	0	4.2
20-13	S Wall	19.3	4.2	19.3	0	4.2
20-14	S Wall	6.5	11.6	6.5	0	11.6
20-15	S Wall	15	11.6	15	0	11.6
20-16	W Wall	-6	18.1	0	6.1	6
20-17	Ceiling	3.7	37.5	3.7	10.9	12
20-18	Ceiling	12.2	37.5	12.2	10.9	12
20-19	Ceiling	8	44.9	8	3.5	12
20-20	Ceiling	16.5	44.9	16.5	3.5	12

Translation Rules From 2D to 3D  
Coordinates for Survey Unit 19B

Surface	3D X	3D Y	3D Z
Floor	2DX	2DY	0
N. Wall	2DX	12.2	36.2-2DY
E. Wall	20	2DY-12	32-2-DX
S. Wall	2DX	0	2DY
W. Wall	0	2DY-12	12+2DX
Ceiling	2DX	48.4-2DY	12





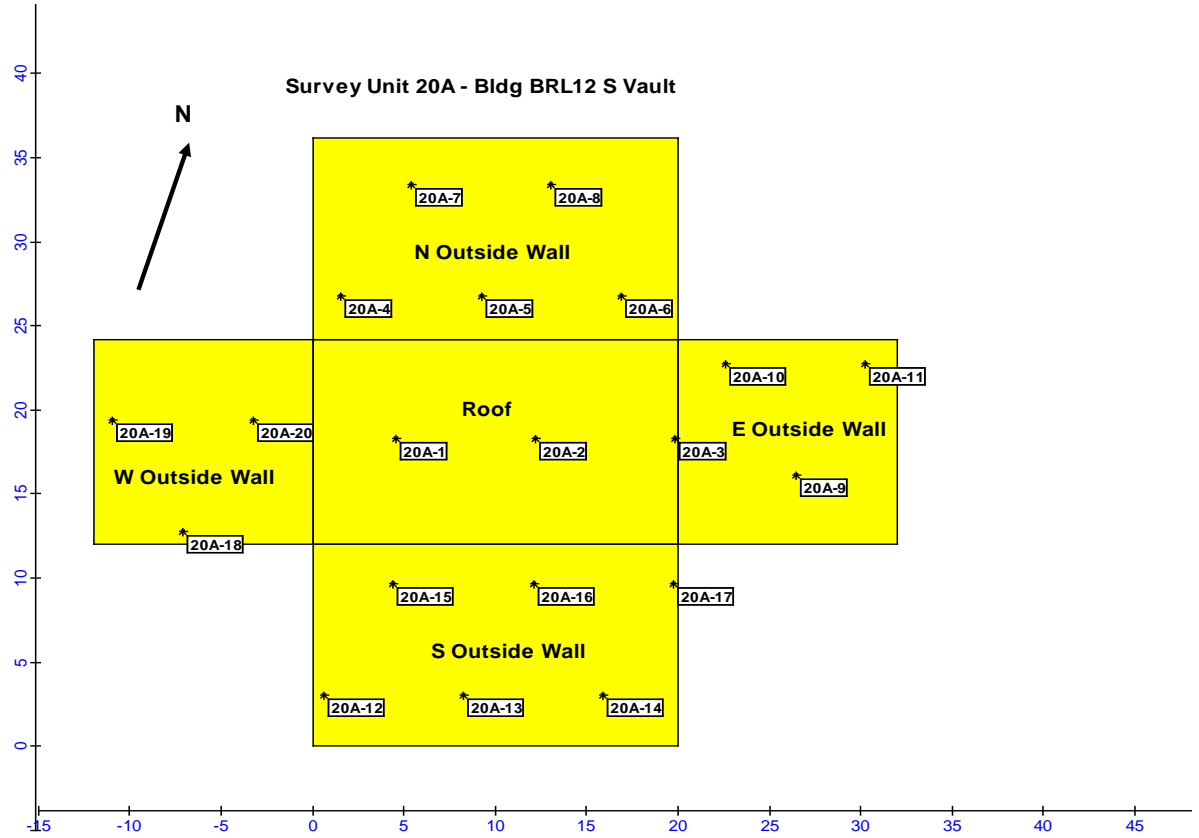
## Aberdeen Proving Ground - Building 1103A Final Status Survey Results

### FSS Fixed Alpha Measurement Locations

Measurement No.	Location	2D X Coord. (ft)	2D Y Coord. (ft)	3D Dist E X coord (ft)	3D Dist N Y coord (ft)	3D Dist Height Z coord (ft)
20A-1	Roof	4.5	18.3	4.5	6.3	12
20A-2	Roof	12.2	18.3	12.2	6.3	12
20A-3	Roof	19.9	18.3	19.9	6.3	12
20A-4	N Wall	1.6	26.7	1.6	12.2	9.5
20A-5	N Wall	9.2	26.7	9.2	12.2	9.5
20A-6	N Wall	16.9	26.7	16.9	12.2	9.5
20A-7	N Wall	5.4	33.4	5.4	12.2	2.8
20A-8	N Wall	13.1	33.4	13.1	12.2	2.8
20A-9	E Wall	26.4	16.1	20	4.1	5.6
20A-10	E Wall	22.6	22.7	20	10.7	9.4
20A-11	E Wall	30.3	22.7	20	10.7	1.7
20A-12	S Wall	0.6	3	0.6	0	3
20A-13	S Wall	8.3	3	8.3	0	3
20A-14	S Wall	15.9	3	15.9	0	3
20A-15	S Wall	4.4	9.7	4.4	0	9.7
20A-16	S Wall	12.1	9.7	12.1	0	9.7
20A-17	S Wall	19.8	9.7	19.8	0	9.7
20A-18	W Wall	-7.1	12.8	0	0.8	4.9
20A-19	W Wall	-10.9	19.4	0	7.4	1.1
20A-20	W Wall	-3.3	19.4	0	7.4	8.7

Translation Rules From 2D to 3D  
Coordinates for Survey Unit 19B

Surface	3D X	3D Y	3D Z
Roof	2DX	2DY-12	20
N. Wall	2DX	12.2	36.2-2DY
E. Wall	20	2DY-12	32-2-DX

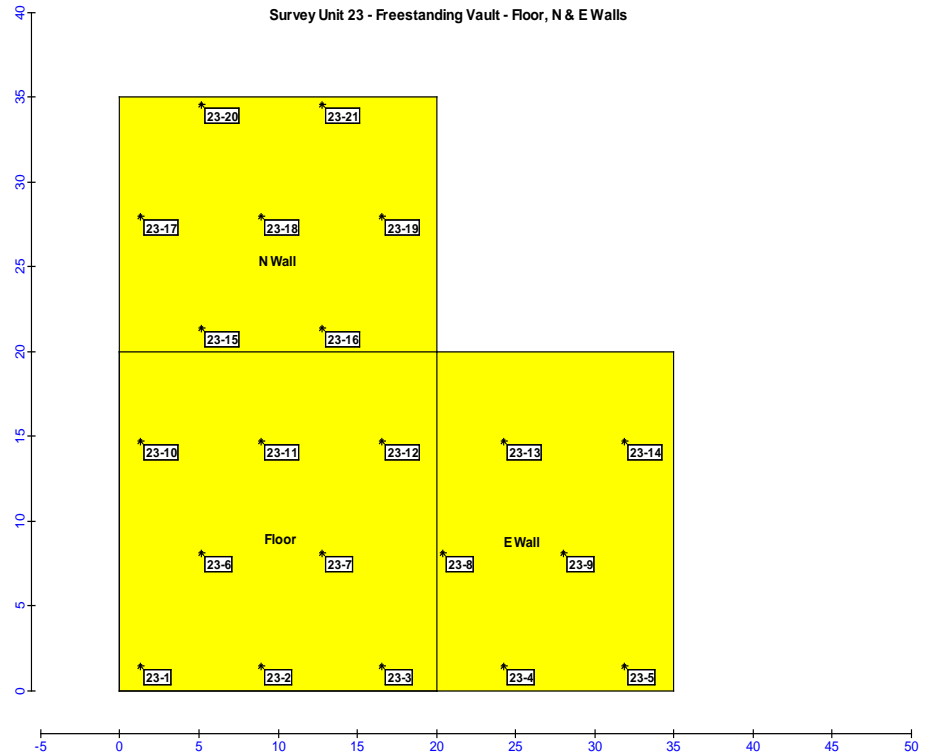


## Aberdeen Proving Ground - Building 1103A Final Status Survey Results

Measurement No.	Location	Dist. East (ft)	Dist. North (ft)	Dist. Up Wall (ft)
23-4	East Wall	n/a	1.5	4.2
23-5	East Wall	n/a	1.5	11.9
23-8	East Wall	n/a	8.1	0.4
23-9	East Wall	n/a	8.1	8
23-13	East Wall	n/a	14.7	4.2
23-14	East Wall	n/a	14.7	11.9
23-1	Floor	1.3	1.5	n/a
23-2	Floor	8.9	1.5	n/a
23-3	Floor	16.6	1.5	n/a
23-6	Floor	5.1	8.1	n/a
23-7	Floor	12.8	8.1	n/a
23-10	Floor	1.3	14.7	n/a
23-11	Floor	8.9	14.7	n/a
23-12	Floor	16.6	14.7	n/a
23-15	North Wall	5.1	n/a	1.4
23-16	North Wall	12.8	n/a	1.4
23-17	North Wall	1.3	n/a	8
23-18	North Wall	8.9	n/a	8
23-19	North Wall	16.6	n/a	8
23-20	North Wall	5.1	n/a	14.6
23-21	North Wall	12.8	n/a	14.6

### LOCATIONS FOR FIXED ALPHAS

### SU-23 - LARGE VAULT, Part 1

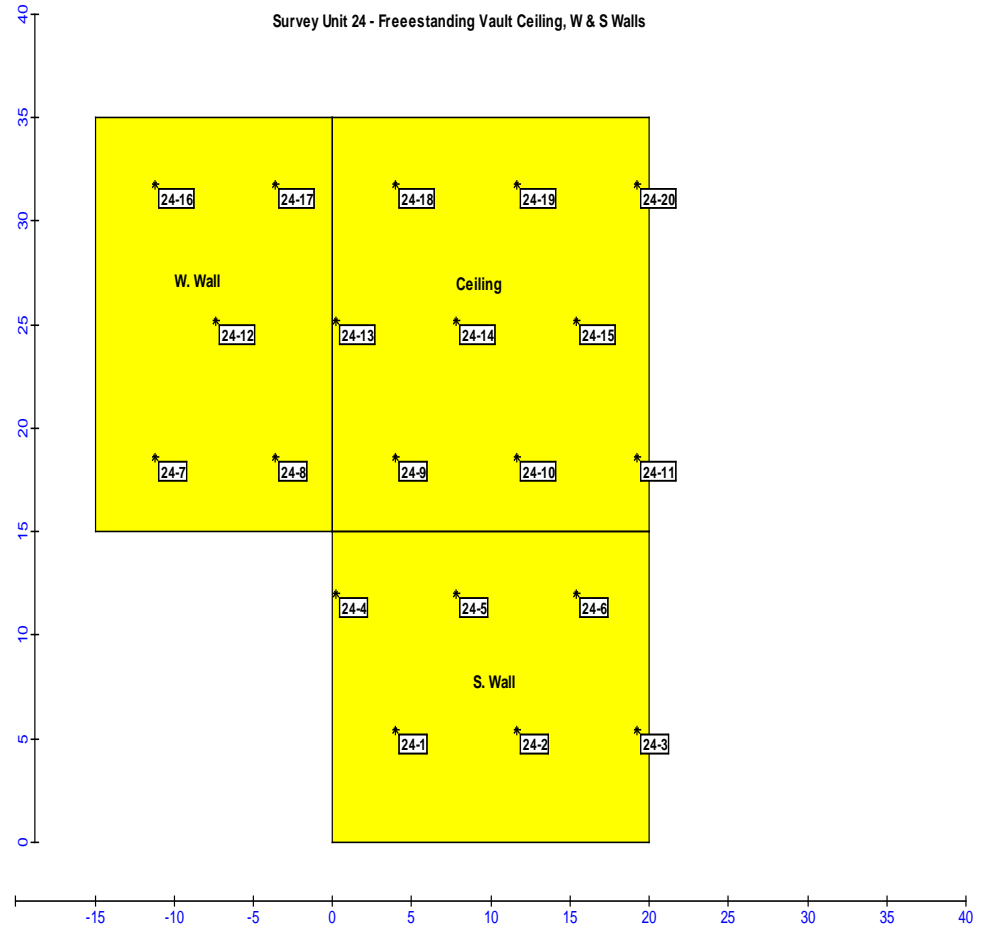


Aberdeen Proving Ground - Building 1103A Final Status Survey Results

Measurement No.	Location	Dist. East (ft)	Dist. North (ft)	Dist. Up Wall (ft)
24-9	Ceiling	4.0	3.6	n/a
24-10	Ceiling	11.6	3.6	n/a
24-11	Ceiling	19.2	3.6	n/a
24-13	Ceiling	0.2	10.2	n/a
24-14	Ceiling	7.8	10.2	n/a
24-15	Ceiling	15.4	10.2	n/a
24-18	Ceiling	4.0	16.8	n/a
24-19	Ceiling	11.6	16.8	n/a
24-20	Ceiling	19.2	16.8	n/a
24-1	South Wall	4.0	n/a	5.5
24-2	South Wall	11.6	n/a	5.5
24-3	South Wall	19.2	n/a	5.5
24-4	South Wall	0.2	n/a	12.0
24-5	South Wall	7.8	n/a	12.0
24-6	South Wall	15.4	n/a	12.0
24-7	West Wall	n/a	3.6	3.8
24-8	West Wall	n/a	3.6	11.4
24-12	West Wall	n/a	10.2	7.6
24-16	West Wall	n/a	16.8	3.8
24-17	West Wall	n/a	16.8	11.4

LOCATIONS FOR FIXED ALPHAS

SU-24 - LARGE VAULT, Part 2

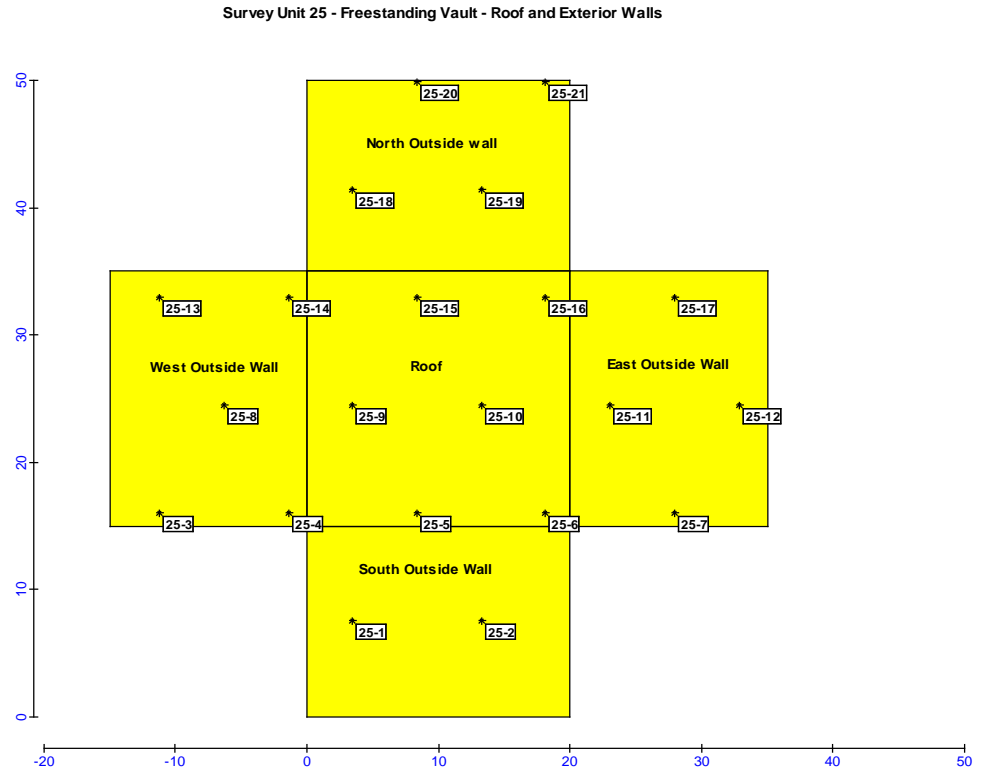


**Aberdeen Proving Ground - Building 1103A Final Status Survey Results**

Measurement No.	Location	Dist. East (ft)	Dist. North (ft)	Dist. Up Wall (ft)
25-7	E. Wall	n/a	1.0	7.1
25-11	E. Wall	n/a	9.5	12.0
25-12	E. Wall	n/a	9.5	2.2
25-17	E. Wall	n/a	18.0	7.1
25-18	N. Wall	3.5	n/a	8.5
25-19	N. Wall	13.3	n/a	8.5
25-20	N. Wall	8.4	n/a	0.1
25-21	N. Wall	18.2	n/a	0.1
25-5	Roof	8.4	1.0	n/a
25-6	Roof	18.2	1.0	n/a
25-9	Roof	3.5	9.5	n/a
25-10	Roof	13.3	9.5	n/a
25-15	Roof	8.4	18.0	n/a
25-16	Roof	18.2	18.0	n/a
25-1	S. Wall	3.5	n/a	7.6
25-2	S. Wall	13.3	n/a	7.6
25-3	W. Wall	n/a	1.0	3.8
25-4	W. Wall	n/a	1.0	13.6
25-8	W. Wall	n/a	9.5	8.7
25-13	W. Wall	n/a	18.0	3.8
25-14	W. Wall	n/a	18.0	13.6

**LOCATIONS FOR FIXED ALPHAS**

**SU-25 - LARGE VAULT, Part 3**



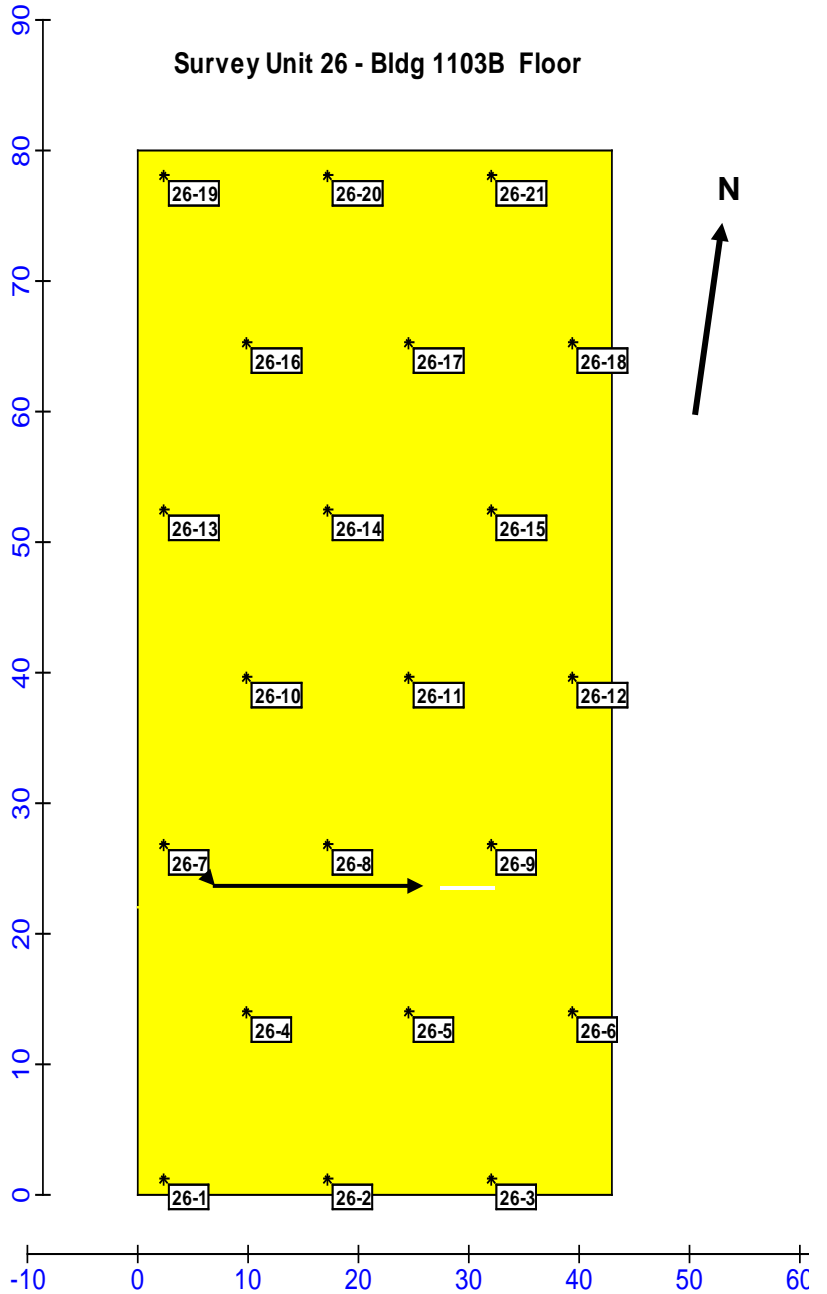
# Aberdeen Proving Ground - Building 1103A Final Status Survey Results

## APG Building 1103 A Project - FSS Fixed Alpha Measurement Locations

	Location	Dist. East (X Coord. ft.)	Dist North (Y Coord. ft.)
26-1	Floor	2.5	1.1
26-2	Floor	17.3	1.1
26-3	Floor	32.1	1.1
26-4	Floor	9.9	13.9
26-5	Floor	24.7	13.9
26-6	Floor	39.5	13.9
26-7	Floor	2.5	26.7
26-8	Floor	17.3	26.7
26-9	Floor	32.1	26.7
26-10	Floor	9.9	39.6
26-11	Floor	24.7	39.6
26-12	Floor	39.5	39.6
26-13	Floor	2.5	52.4
26-14	Floor	17.3	52.4
26-15	Floor	32.1	52.4
26-16	Floor	9.9	65.2
26-17	Floor	24.7	65.2
26-18	Floor	39.5	65.2
26-19	Floor	2.5	78
26-20	Floor	17.3	78
26-21	Floor	32.1	78

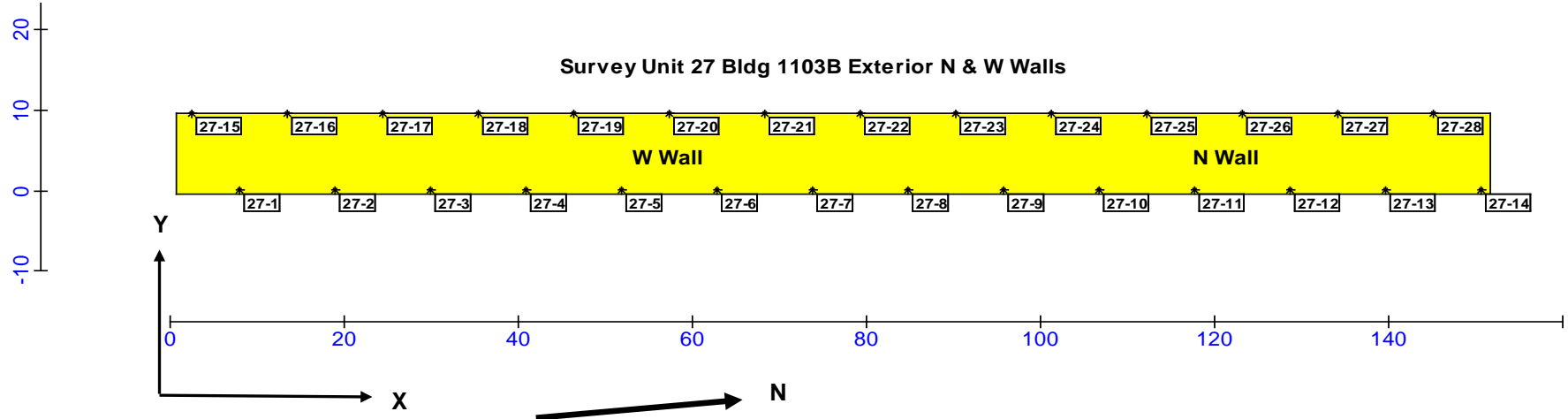
Area: Area 4

X Coord	Y Coord	Label
2.5	1.1	26-1
17.3	1.1	26-2
32.1	1.1	26-3
9.9	13.9	26-4
24.7	13.9	26-5
39.5	13.9	26-6
2.5	26.7	26-7
17.3	26.7	26-8
32.1	26.7	26-9
9.9	39.6	26-10
24.7	39.6	26-11
39.5	39.6	26-12
2.5	52.4	26-13
17.3	52.4	26-14
32.1	52.4	26-15
9.9	65.2	26-16
24.7	65.2	26-17
39.5	65.2	26-18
2.5	78	26-19
17.3	78	26-20
32.1	78	26-21



## Aberdeen Proving Ground - Building 1103A Final Status Survey Results

APG Building 1103 A Project - FSS Fixed Alpha Measurement Locations



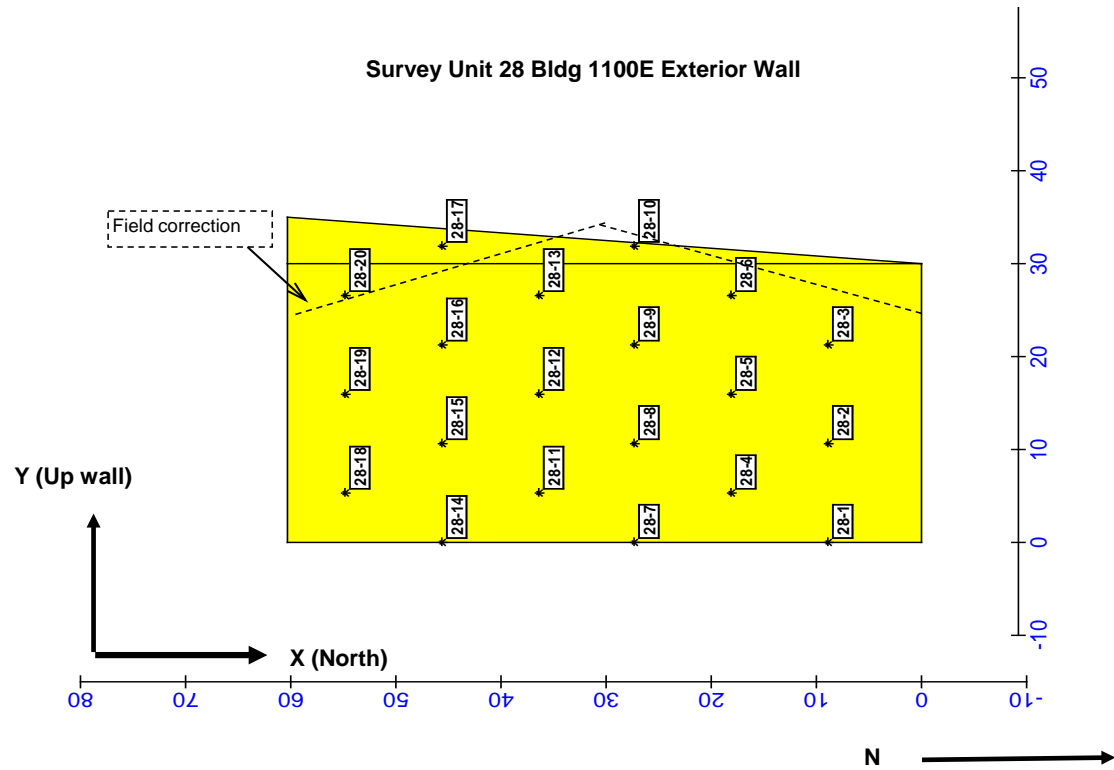
Measurement No.	Location	X Coord. (ft.)	Y Up Wall Coord. (ft.)
27-1	Wall	7.9	0.1
27-2	Wall	18.9	0.1
27-3	Wall	29.9	0.1
27-4	Wall	40.9	0.1
27-5	Wall	51.9	0.1
27-6	Wall	62.8	0.1
27-7	Wall	73.8	0.1
27-8	Wall	84.8	0.1
27-9	Wall	95.8	0.1
27-10	Wall	106.8	0.1
27-11	Wall	117.7	0.1
27-12	Wall	128.7	0.1
27-13	Wall	139.7	0.1
27-14	Wall	150.7	0.1

Measurement No.	Location	X Coord. (ft.)	Y Up Wall Coord. (ft.)
27-15	Wall	2.4	9.6
27-16	Wall	13.4	9.6
27-17	Wall	24.4	9.6
27-18	Wall	35.4	9.6
27-19	Wall	46.4	9.6
27-20	Wall	57.3	9.6
27-21	Wall	68.3	9.6
27-22	Wall	79.3	9.6
27-23	Wall	90.3	9.6
27-24	Wall	101.3	9.6
27-25	Wall	112.3	9.6
27-26	Wall	123.2	9.6
27-27	Wall	134.2	9.6
27-28	Wall	145.2	9.6

## Aberdeen Proving Ground - Building 1103A Final Status Survey Results

### APG Building 1103 A Project - FSS Fixed Alpha Measurement Locations

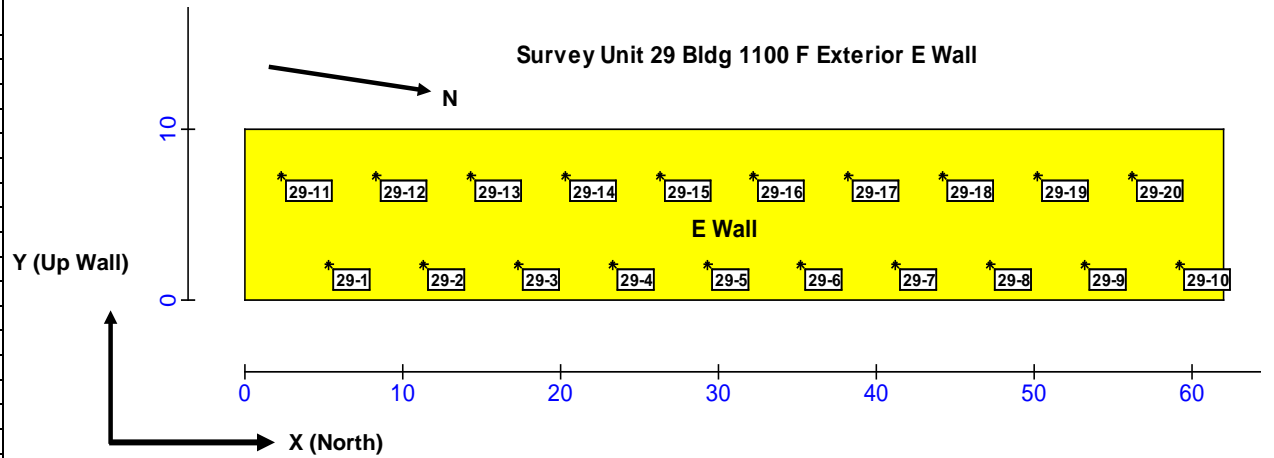
Measurement No.	Location	Dist Up Wall (Y Coord. ft.)	Dist. North (X Coord. ft.)
28-1	E Wall	0.1	8.8
28-2	E Wall	10.7	8.8
28-3	E Wall	21.4	8.8
28-4	E Wall	5.4	18
28-5	E Wall	16.1	18
28-6	E Wall	26.7	18
28-7	E Wall	0.1	27.2
28-8	E Wall	10.7	27.2
28-9	E Wall	21.4	27.2
28-10	E Wall	32	27.2
28-11	E Wall	5.4	36.4
28-12	E Wall	16.1	36.4
28-13	E Wall	26.7	36.4
28-14	E Wall	0.1	45.6
28-15	E Wall	10.7	45.6
28-16	E Wall	21.4	45.6
28-17	E Wall	32	45.6
28-18	E Wall	5.4	54.8
28-19	E Wall	16.1	54.8
28-20	E Wall	26.7	54.8



## Aberdeen Proving Ground - Building 1103A Final Status Survey Results

### APG Building 1103 A Project - FSS Fixed Alpha Measurement Locations

Measurement No.	Location	Dist. North (X Coord. ft.)	Dist Up Wall (Y Coord. ft.)
29-1	E Wall	5.3	2.1
29-2	E Wall	11.3	2.1
29-3	E Wall	17.3	2.1
29-4	E Wall	23.3	2.1
29-5	E Wall	29.3	2.1
29-6	E Wall	35.2	2.1
29-7	E Wall	41.2	2.1
29-8	E Wall	47.2	2.1
29-9	E Wall	53.2	2.1
29-10	E Wall	59.2	2.1
29-11	E Wall	2.3	7.3
29-12	E Wall	8.3	7.3
29-13	E Wall	14.3	7.3
29-14	E Wall	20.3	7.3
29-15	E Wall	26.3	7.3
29-16	E Wall	32.3	7.3
29-17	E Wall	38.2	7.3
29-18	E Wall	44.2	7.3
29-19	E Wall	50.2	7.3
29-20	E Wall	56.2	7.3





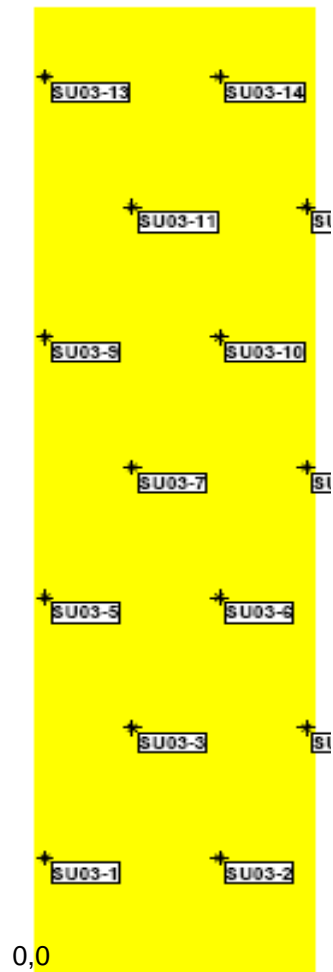
## Aberdeen Proving Ground - Building 1103A Final Status Survey Results

### APG Building 1103 A Project - FSS Outdoor Area Sampling & Measurement Locations

Measurement No.	Location	Dist. East (X Coord. ft.)	Dist North (Y Coord. ft.)
3-1	Ground	1.1	14.2
3-2	Ground	19.8	14.2
3-3	Ground	10.5	30.4
3-4	Ground	29.2	30.4
3-5	Ground	1.1	46.6
3-6	Ground	19.8	46.6
3-7	Ground	10.5	62.8
3-8	Ground	29.2	62.8
3-9	Ground	1.1	79.0
3-10	Ground	19.8	79.0
3-11	Ground	10.5	95.2
3-12	Ground	29.2	95.2
3-13	Ground	1.1	111.4
3-14	Ground	19.8	111.4

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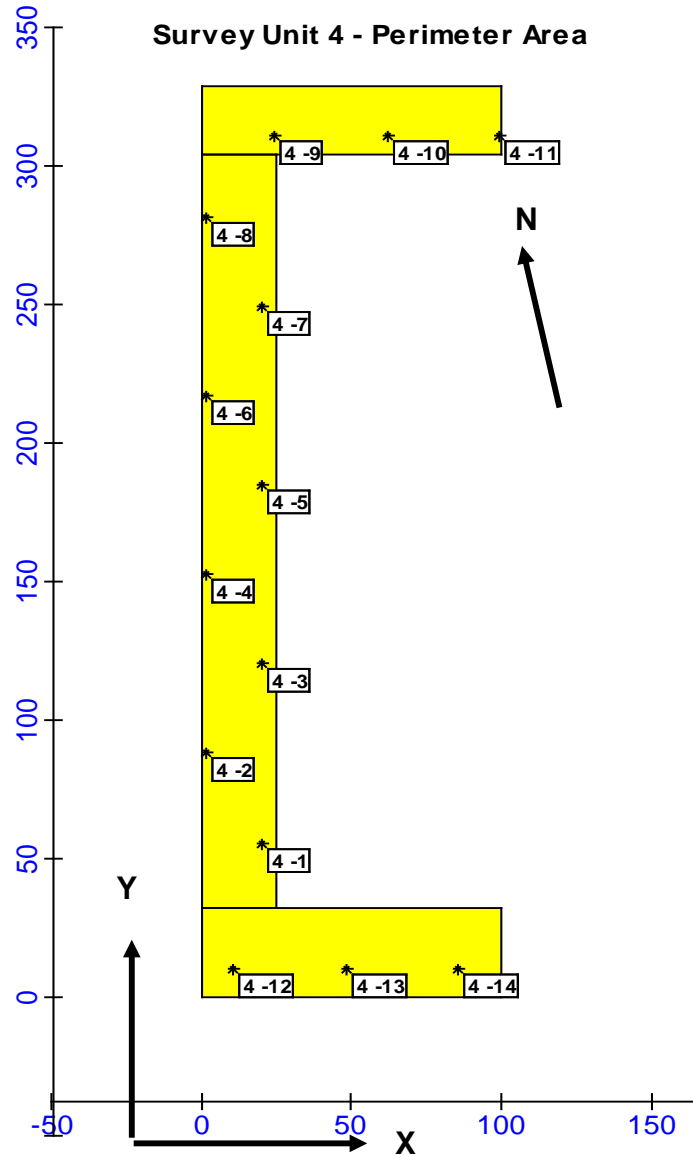
### Survey Unit 03. E



## Aberdeen Proving Ground - Building 1103A Final Status Survey Results

### APG Building 1103 A Project - FSS Outdoor Area Sampling & Measurement Locations

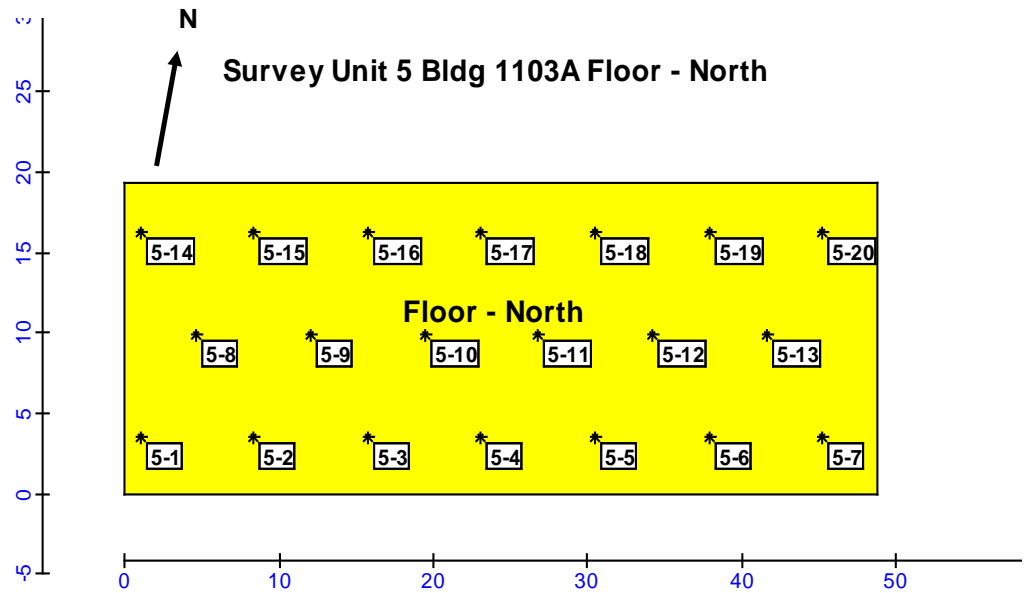
Measurement No.	Location	Dist. East (X Coord. ft.)	Dist North (Y Coord. ft.)
4 -1	Ground	20.2	55.6
4 -2	Ground	1.6	87.9
4 -3	Ground	20.2	120.2
4 -4	Ground	1.6	152.4
4 -5	Ground	20.2	184.7
4 -6	Ground	1.6	217.0
4 -7	Ground	20.2	249.2
4 -8	Ground	1.6	281.5
4 -9	Ground	24.6	311.0
4 -10	Ground	61.9	311.0
4 -11	Ground	99.2	311.0
4 -12	Ground	10.9	10.3
4 -13	Ground	48.1	10.3
4 -14	Ground	85.4	10.3



## Aberdeen Proving Ground - Building 1103A Final Status Survey Results

APG Building 1103A - FSS Fixed Alpha Measurement Locations

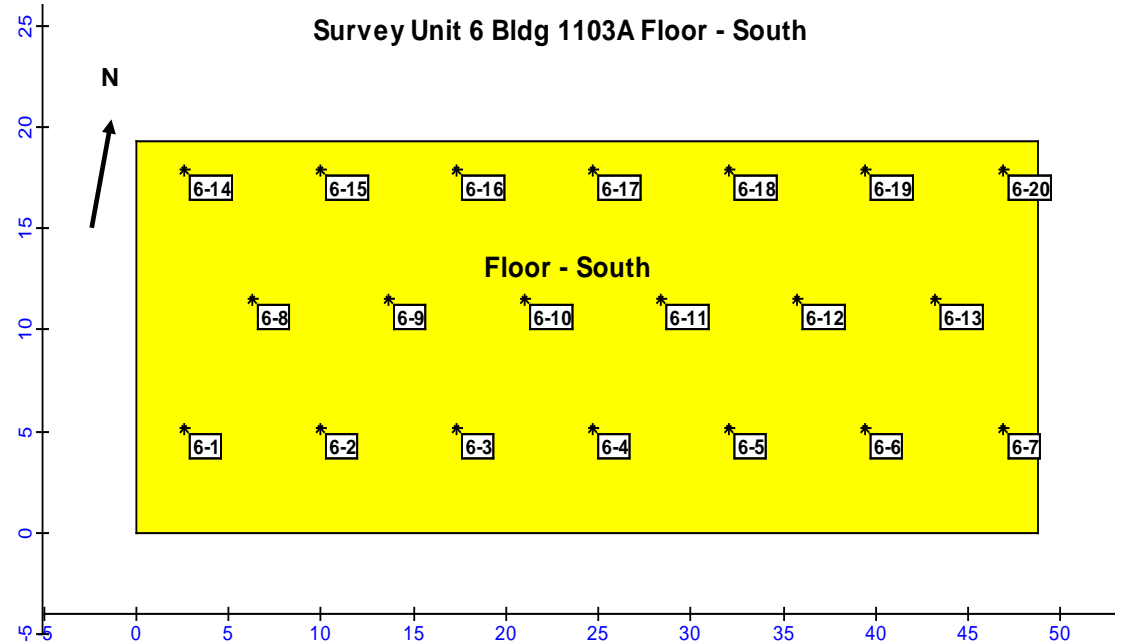
Measurement No.	Location	Dist. East (X Coord. ft.)	Dist North (Y Coord. ft.)	Dist up Wall (Z coord ft.)
5-1	Floor	1	3.5	n/a
5-2	Floor	8.4	3.5	n/a
5-3	Floor	15.7	3.5	n/a
5-4	Floor	23.1	3.5	n/a
5-5	Floor	30.5	3.5	n/a
5-6	Floor	37.9	3.5	n/a
5-7	Floor	45.2	3.5	n/a
5-8	Floor	4.7	9.9	n/a
5-9	Floor	12	9.9	n/a
5-10	Floor	19.4	9.9	n/a
5-11	Floor	26.8	9.9	n/a
5-12	Floor	34.2	9.9	n/a
5-13	Floor	41.6	9.9	n/a
5-14	Floor	1	16.3	n/a
5-15	Floor	8.4	16.3	n/a
5-16	Floor	15.7	16.3	n/a
5-17	Floor	23.1	16.3	n/a
5-18	Floor	30.5	16.3	n/a
5-19	Floor	37.9	16.3	n/a
5-20	Floor	45.2	16.3	n/a



## Aberdeen Proving Ground - Building 1103A Final Status Survey Results

APG Building 1103A - FSS Fixed Alpha Measurement Locations

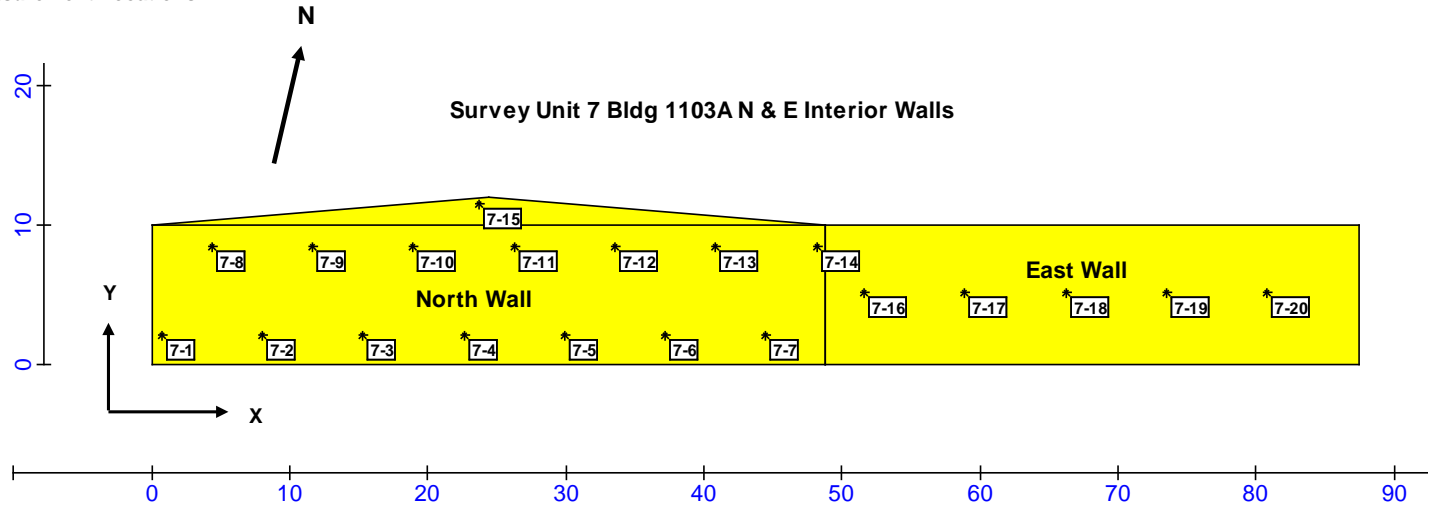
Measurement No.	Location	Dist. East (X Coord. ft.)	Dist North (Y Coord. ft.)	Dist up Wall (Z coord ft.)
6-1	Floor	2.6	5.1	n/a
6-2	Floor	10	5.1	n/a
6-3	Floor	17.3	5.1	n/a
6-4	Floor	24.7	5.1	n/a
6-5	Floor	32.1	5.1	n/a
6-6	Floor	39.5	5.1	n/a
6-7	Floor	46.8	5.1	n/a
6-8	Floor	6.3	11.5	n/a
6-9	Floor	13.6	11.5	n/a
6-10	Floor	21	11.5	n/a
6-11	Floor	28.4	11.5	n/a
6-12	Floor	35.8	11.5	n/a
6-13	Floor	43.2	11.5	n/a
6-14	Floor	2.6	17.9	n/a
6-15	Floor	10	17.9	n/a
6-16	Floor	17.3	17.9	n/a
6-17	Floor	24.7	17.9	n/a
6-18	Floor	32.1	17.9	n/a
6-19	Floor	39.5	17.9	n/a
6-20	Floor	46.8	17.9	n/a



## Aberdeen Proving Ground - Building 1103A Final Status Survey Results

APG Building 1103A - FSS Fixed Alpha Measurement Locations

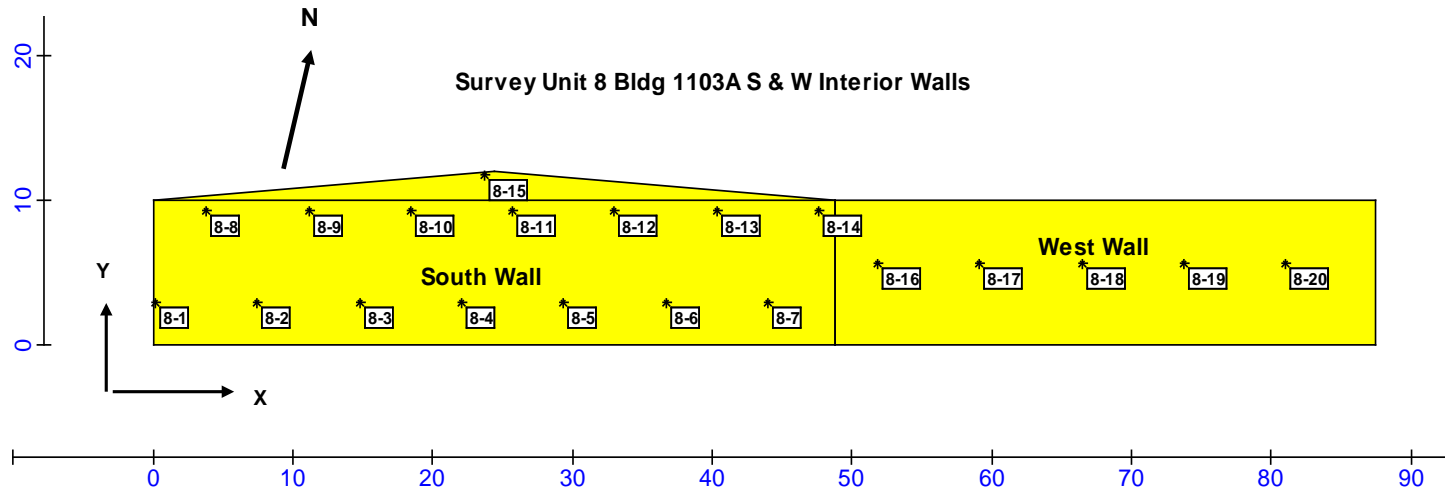
Measure ment No.	Location	Dist E X coord (ft)	Dist up Wall Y coord (ft)
7-1	N Wall	0.7	2.2
7-2	N Wall	8	2.2
7-3	N Wall	15.3	2.2
7-4	N Wall	22.6	2.2
7-5	N Wall	29.9	2.2
7-6	N Wall	37.2	2.2
7-7	N Wall	44.5	2.2
7-8	N Wall	4.4	8.5
7-9	N Wall	11.7	8.5
7-10	N Wall	19	8.5
7-11	N Wall	26.3	8.5
7-12	N Wall	33.6	8.5
7-13	N Wall	40.9	8.5
7-14	N Wall	48.2	8.5
7-15	N Wall	23.8	11.6
7-16	E Wall	51.6	5.2
7-17	E Wall	58.9	5.2
7-18	E Wall	66.2	5.2
7-19	E Wall	73.5	5.2
7-20	E Wall	80.8	5.2



## Aberdeen Proving Ground - Building 1103A Final Status Survey Results

APG Building 1103A - FSS Fixed Alpha Measurement Locations

Measure ment No.	Location	Dist E X coord (ft)	Dist up Wall Y coord (ft)
8-1	S Wall	0.2	2.9
8-2	S Wall	7.5	2.9
8-3	S Wall	14.8	2.9
8-4	S Wall	22.1	2.9
8-5	S Wall	29.4	2.9
8-6	S Wall	36.7	2.9
8-7	S Wall	44.0	2.9
8-8	S Wall	3.8	9.3
8-9	S Wall	11.1	9.3
8-10	S Wall	18.4	9.3
8-11	S Wall	25.7	9.3
8-12	S Wall	33.0	9.3
8-13	S Wall	40.3	9.3
8-14	S Wall	47.6	9.3
8-15	S Wall	23.7	11.8
8-16	W Wall	51.9	5.6
8-17	W Wall	59.2	5.6
8-18	W Wall	66.5	5.6
8-19	W Wall	73.8	5.6
8-20	W Wall	81.1	5.6



## Aberdeen Proving Ground - Building 1103A Final Status Survey Results

APG Building 1103A - FSS Fixed Alpha Measurement Locations

Measurement No.	Location	Dist. East (X Coord. ft.)	Dist North (Y Coord. ft.)
9 -1	Ceiling	28.0	21.2
9 -2	Ceiling	35.6	21.2
9 -3	Ceiling	43.2	21.2
9 -4	Ceiling	31.8	27.8
9 -5	Ceiling	39.4	27.8
9 -6	Ceiling	47.0	27.8
9 -7	Ceiling	28.0	34.4
9 -8	Ceiling	35.6	34.4
9 -9	Ceiling	43.2	34.4
9 -10	Ceiling	0.7	22.1
9 -11	Ceiling	8.3	22.1
9 -12	Ceiling	15.9	22.1
9 -13	Ceiling	23.5	22.1
9 -14	Ceiling	4.5	28.7
9 -15	Ceiling	12.1	28.7
9 -16	Ceiling	19.7	28.7
9 -17	Ceiling	0.7	35.3
9 -18	Ceiling	8.3	35.3
9 -19	Ceiling	15.9	35.3
9 -20	Ceiling	23.5	35.3

