

Freq: 950 kHz - Class: B
Latitude: 40-09-15 N / Longitude: 075-22-10 W
Power: 21 kW - RMS: 1587.35 mV/m @1km
Towers: 4 - # Augs: 1
Licensed - Dashed Lines

Freq: 950 kHz - Class: B
Latitude: 39-58-28 N / Longitude: 075-16-19 W
Power: 0.65 kW - RMS: 250.972 mV/m @1km
Towers: 3 - Proposed - Solid Lines

**PRESENT & PROPOSED
NIGHTTIME INTERFERENCE FREE &
5.0 mV/m CONTOUR**

BROADCAST TECHNICAL CONSULTANTS

- Licensed - 3.17 mV/m
- Proposed - 3.58 mV/m
- 5.0 mV/m
- Philadelphia, Pennsylvania

Scale 1:750,000

A horizontal number line is shown with tick marks at 0, 10, 20, and 30. The unit is labeled 'km' at the right end. The segment between 10 and 20 is shaded with a light gray background.

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EXHIBIT #1A
MINOR CHANGE APPLICATION
FAMILY STATIONS, INC.
WKDN AM RADIO STATION
has: 950 kHz - 21.0/43.0 kW - DA2
req: 950 kHz - 0.65/43.0 kW - DA2
PHILADELPHIA, PENNSYLVANIA
October 2017

WKDN - PHILADELPHIA, PA

Freq: 950 kHz - Class: B

Latitude: 39-58-28 N / Longitude: 075-16-19 W

Power: 0.65 kW - RMS: 250.972 mV/m @1km

Towers: 3

PROPOSED 1.0 V/m CONTOUR

GRAHAM BROCK, INC.

BROADCAST TECHNICAL CONSULTANTS

EXHIBIT #1B
MINOR CHANGE APPLICATION
FAMILY STATIONS, INC.
WKDN AM RADIO STATION
has: 950 kHz - 21.0/43.0 kW - DA2
req: 950 kHz - 0.65/43.0 kW - DA2
PHILADELPHIA, PENNSYLVANIA
October 2017

2010 Census Population Within 1.0 V/m Contour:
1,403 Persons
0.3% of 491,743 Persons Within 25 mV/m Contour

1000 mV/m

Scale 1:24,000

0 0.33 0.67 1.0 km

WKDN - PHILADELPHIA, PA

Freq: 950 kHz - Class: B

Latitude: 40-09-15 N / Longitude: 075-22-10 W

Power: 21 kW - RMS: 1587.35 mV/m @1km

Towers: 4 - # Augs: 1

PRESENT 1.0 V/m CONTOUR

GRAHAM BROCK, INC.

BROADCAST TECHNICAL CONSULTANTS

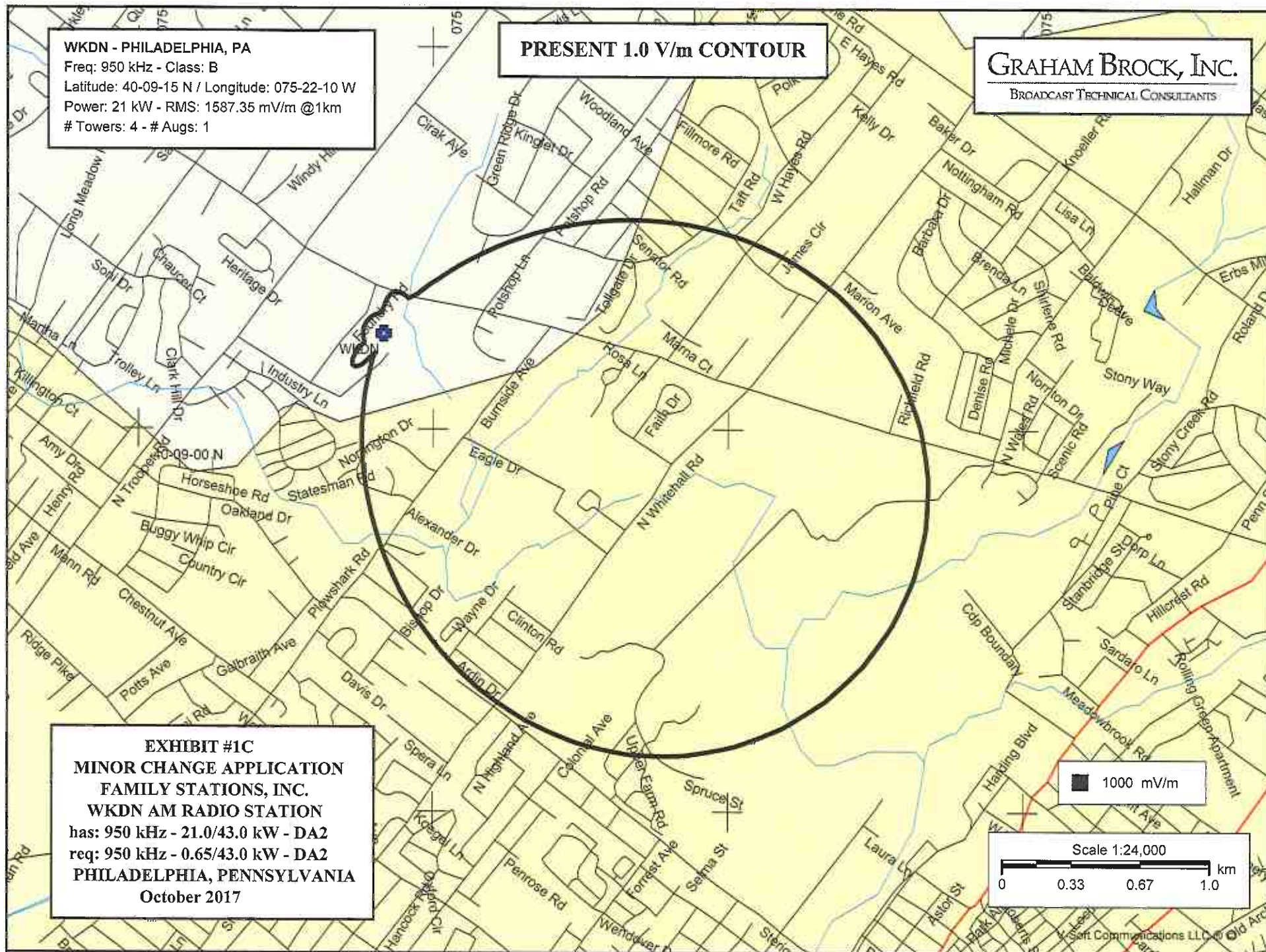


EXHIBIT #1C

MINOR CHANGE APPLICATION

FAMILY STATIONS, INC.

WKDN AM RADIO STATION

has: 950 kHz - 21.0/43.0 kW - DA2

req: 950 kHz - 0.65/43.0 kW - DA2

PHILADELPHIA, PENNSYLVANIA

October 2017

MINOR CHANGE APPLICATION
FAMILY STATIONS, INC.
WKDN AM RADIO STATION
has: 950 kHz - 21.0/43.0 kW - DA2
req: 950 kHz - 0.65/43.0 kW - DA2
PHILADELPHIA, PENNSYLVANIA
October 2017

EXHIBIT #1D

Proposed Nighttime Service Contours

North Latitude: 39° 58' 28"
West Longitude: 75° 16' 19"

Azimuth	Radiation (mV/m at one km)	Distances to Contours in Kilometers :			
		Contour levels in mV/m.			
		1000.000	25.000	5.000	* 3.577
0.0	87.04	0.10	2.72	9.16	11.35
5.0	109.62	0.11	3.30	10.64	13.06
10.0	134.61	0.13	3.89	12.08	14.73
15.0	161.46	0.16	4.49	13.47	16.32
20.0	189.48	0.18	5.08	14.79	17.81
25.0	217.93	0.21	5.64	16.00	19.19
30.0	246.03	0.24	6.17	17.11	20.44
35.0	273.00	0.26	6.65	18.10	21.56
40.0	298.16	0.28	7.08	18.97	22.54
45.0	320.95	0.30	7.45	19.72	23.38
50.0	340.95	0.32	7.77	20.35	24.09
55.0	357.92	0.34	8.04	20.87	24.66
60.0	371.79	0.35	8.25	21.27	25.12
65.0	382.66	0.36	8.41	21.59	25.48
70.0	390.76	0.37	8.53	21.82	25.74
75.0	396.41	0.37	8.61	21.98	25.92
80.0	400.02	0.38	8.67	22.08	26.03
85.0	402.04	0.38	8.69	22.14	26.09
90.0	402.89	0.38	8.71	22.16	26.12
95.0	402.99	0.38	8.71	22.16	26.12
100.0	402.70	0.38	8.70	22.15	26.11
105.0	402.30	0.38	8.70	22.14	26.10
110.0	402.00	0.38	8.69	22.14	26.09
115.0	401.92	0.38	8.69	22.13	26.09
120.0	402.10	0.38	8.70	22.14	26.09
125.0	402.46	0.38	8.70	22.15	26.10
130.0	402.85	0.38	8.71	22.29	26.25
135.0	403.02	0.38	8.71	22.54	26.50
140.0	402.66	0.38	8.70	22.73	26.69
145.0	401.40	0.38	8.69	22.86	26.82
150.0	398.79	0.38	8.65	22.94	26.89
155.0	394.41	0.37	8.58	22.96	26.90
160.0	387.83	0.37	8.49	22.92	26.84
165.0	378.66	0.36	8.35	22.81	26.69
170.0	366.61	0.35	8.17	22.63	26.46
175.0	351.51	0.33	7.94	22.38	26.15

Ground Conductivity : FCC M-3

* - Nighttime Interference Free Contour

MINOR CHANGE APPLICATION
FAMILY STATIONS, INC.
WKDN AM RADIO STATION
has: 950 kHz - 21.0/43.0 kW - DA2
req: 950 kHz - 0.65/43.0 kW - DA2
PHILADELPHIA, PENNSYLVANIA
October 2017

EXHIBIT #1D (continued)

Proposed Nighttime Service Contours

North Latitude: 39° 58' 28"
West Longitude: 75° 16' 19"

Azimuth	Radiation (mV/m at one km)	Distances to Contours in Kilometers :				
		Contour levels in mV/m.				
		1000.000	25.000	5.000	*	3.577
180.0	333.31	0.32	7.65	22.04		25.75
185.0	312.15	0.30	7.31	21.64		25.26
190.0	288.35	0.28	6.91	21.17		24.70
195.0	262.39	0.25	6.46	20.68		24.09
200.0	234.88	0.22	5.96	20.19		23.46
205.0	206.55	0.20	5.42	17.58		22.42
210.0	178.18	0.17	4.85	14.27		17.51
215.0	150.54	0.15	4.25	12.93		15.69
220.0	124.36	0.12	3.65	11.51		14.07
225.0	100.27	0.10	3.06	10.05		12.38
230.0	78.77	0.10	2.50	8.57		10.67
235.0	60.18	0.10	1.98	7.12		8.96
240.0	44.68	0.10	1.53	5.75		7.31
245.0	32.34	0.10	1.14	4.50		5.80
250.0	23.07	0.10	0.83	3.44		4.49
255.0	16.74	0.10	0.62	2.63		3.48
260.0	13.02	0.10	0.49	2.13		2.83
265.0	11.29	0.10	0.42	1.88		2.51
270.0	10.69	0.10	0.40	1.79		2.39
275.0	10.53	0.10	0.40	1.76		2.36
280.0	10.50	0.10	0.39	1.76		2.36
285.0	10.50	0.10	0.39	1.76		2.36
290.0	10.50	0.10	0.39	1.76		2.36
295.0	10.50	0.10	0.39	1.76		2.36
300.0	10.50	0.10	0.39	1.76		2.36
305.0	10.50	0.10	0.39	1.76		2.36
310.0	10.51	0.10	0.39	1.76		2.36
315.0	10.56	0.10	0.40	1.77		2.37
320.0	10.84	0.10	0.41	1.81		2.42
325.0	11.80	0.10	0.44	1.95		2.60
330.0	14.23	0.10	0.53	2.29		3.04
335.0	18.93	0.10	0.69	2.92		3.84
340.0	26.42	0.10	0.94	3.83		4.98
345.0	36.90	0.10	1.28	4.98		6.38
350.0	50.50	0.10	1.70	6.29		7.96
355.0	67.25	0.10	2.19	7.70		9.64

Ground Conductivity : FCC M-3

* - Nighttime Interference Free Contour

MINOR CHANGE APPLICATION
FAMILY STATIONS, INC.
WKDN AM RADIO STATION
has: 950 kHz - 21.0/43.0 kW - DA2
req: 950 kHz - 0.65/43.0 kW - DA2
PHILADELPHIA, PENNSYLVANIA
October 2017

EXHIBIT #1E

Present Nighttime Service Contours

North Latitude: 40° 09' 15"
West Longitude: 75° 22' 10"

Azimuth	Radiation (mV/m at one km)	Distances to Contours in Kilometers :		
		Contour levels in mV/m.		
		1000.000	5.000	* 3.171
0.0	136.32	0.13	12.18	15.88
5.0	171.48	0.17	13.96	18.01
10.0	203.23	0.20	15.39	19.70
15.0	222.46	0.21	16.19	20.65
20.0	221.57	0.21	16.15	20.61
25.0	221.93	0.21	16.16	20.63
30.0	221.43	0.21	16.14	20.60
35.0	217.56	0.21	15.99	20.41
40.0	261.69	0.25	17.70	22.43
45.0	407.47	0.38	22.29	27.81
50.0	635.92	0.59	27.67	34.11
55.0	906.58	0.82	32.59	39.90
60.0	1201.82	1.06	36.98	45.06
65.0	1511.29	1.31	40.87	49.70
70.0	1824.62	1.55	44.34	53.83
75.0	2131.91	1.78	47.39	57.49
80.0	2424.33	2.00	50.06	60.70
85.0	2694.41	2.19	52.36	63.46
90.0	2936.28	2.36	54.30	65.81
95.0	3145.56	2.50	55.90	67.74
100.0	3319.28	2.62	57.19	69.29
105.0	3455.56	2.71	58.17	70.48
110.0	3553.36	2.77	58.86	71.31
115.0	3612.18	2.81	59.27	71.80
120.0	3631.80	2.82	59.40	71.97
125.0	3612.18	2.81	59.27	71.80
130.0	3553.36	2.77	58.86	71.31
135.0	3455.56	2.71	58.17	70.48
140.0	3319.28	2.62	57.19	69.29
145.0	3145.56	2.50	55.90	67.74
150.0	2936.28	2.36	54.86	66.37
155.0	2694.41	2.19	53.46	64.57
160.0	2424.33	2.00	51.69	62.33
165.0	2131.91	1.78	49.55	59.65
170.0	1824.62	1.55	47.04	56.53
175.0	1511.29	1.31	44.01	52.83

Ground Conductivity : FCC M-3

* - Nighttime Interference Free Contour

MINOR CHANGE APPLICATION
FAMILY STATIONS, INC.
WKDN AM RADIO STATION
has: 950 kHz - 21.0/43.0 kW - DA2
req: 950 kHz - 0.65/43.0 kW - DA2
PHILADELPHIA, PENNSYLVANIA
October 2017

EXHIBIT #1E (continued)

North Latitude: 40° 09' 15"
West Longitude: 75° 22' 10"

Azimuth	Radiation (mV/m at one km)	Distances to Contours in Kilometers :		
		Contour levels in mV/m.		
		1000.000	5.000	* 3.171
180.0	1201.82	1.06	39.79	47.88
185.0	906.58	0.82	32.59	42.33
190.0	635.92	0.59	27.67	34.11
195.0	400.00	0.38	22.08	27.57
200.0	211.22	0.20	15.73	20.10
205.0	106.11	0.10	10.42	13.76
210.0	136.37	0.13	12.18	15.88
215.0	191.45	0.18	14.87	19.10
220.0	220.66	0.21	16.11	20.56
225.0	222.46	0.21	16.19	20.65
230.0	203.23	0.20	15.39	19.70
235.0	171.48	0.17	13.96	18.01
240.0	136.32	0.13	12.18	15.88
245.0	106.68	0.10	10.45	13.80
250.0	89.45	0.10	9.33	12.43
255.0	84.88	0.10	9.01	12.04
260.0	86.27	0.10	9.11	12.16
265.0	87.51	0.10	9.20	12.27
270.0	86.77	0.10	9.15	12.20
275.0	85.30	0.10	9.04	12.08
280.0	85.20	0.10	9.04	12.07
285.0	87.52	0.10	9.20	12.27
290.0	91.40	0.10	9.46	12.59
295.0	94.87	0.10	9.70	12.88
300.0	96.24	0.10	9.79	12.99
305.0	94.87	0.10	9.70	12.88
310.0	91.40	0.10	9.46	12.59
315.0	87.52	0.10	9.20	12.27
320.0	85.20	0.10	9.04	12.07
325.0	85.30	0.10	9.04	12.08
330.0	86.77	0.10	9.15	12.20
335.0	87.51	0.10	9.20	12.27
340.0	86.27	0.10	9.11	12.16
345.0	84.88	0.10	9.01	12.04
350.0	89.45	0.10	9.33	12.43
355.0	106.68	0.10	10.45	13.80

Ground Conductivity : FCC M-3

* - Nighttime Interference Free Contour

MINOR CHANGE APPLICATION
FAMILY STATIONS, INC.
WKDN AM RADIO STATION
has: 950 kHz - 21.0/43.0 kW - DA2
req: 950 kHz - 0.65/43.0 kW - DA2
PHILADELPHIA, PENNSYLVANIA
October 2017

EXHIBIT #1F

ID Stations Study at 39 58 28 N, 75 16 19 W, Search Distance = 10 km

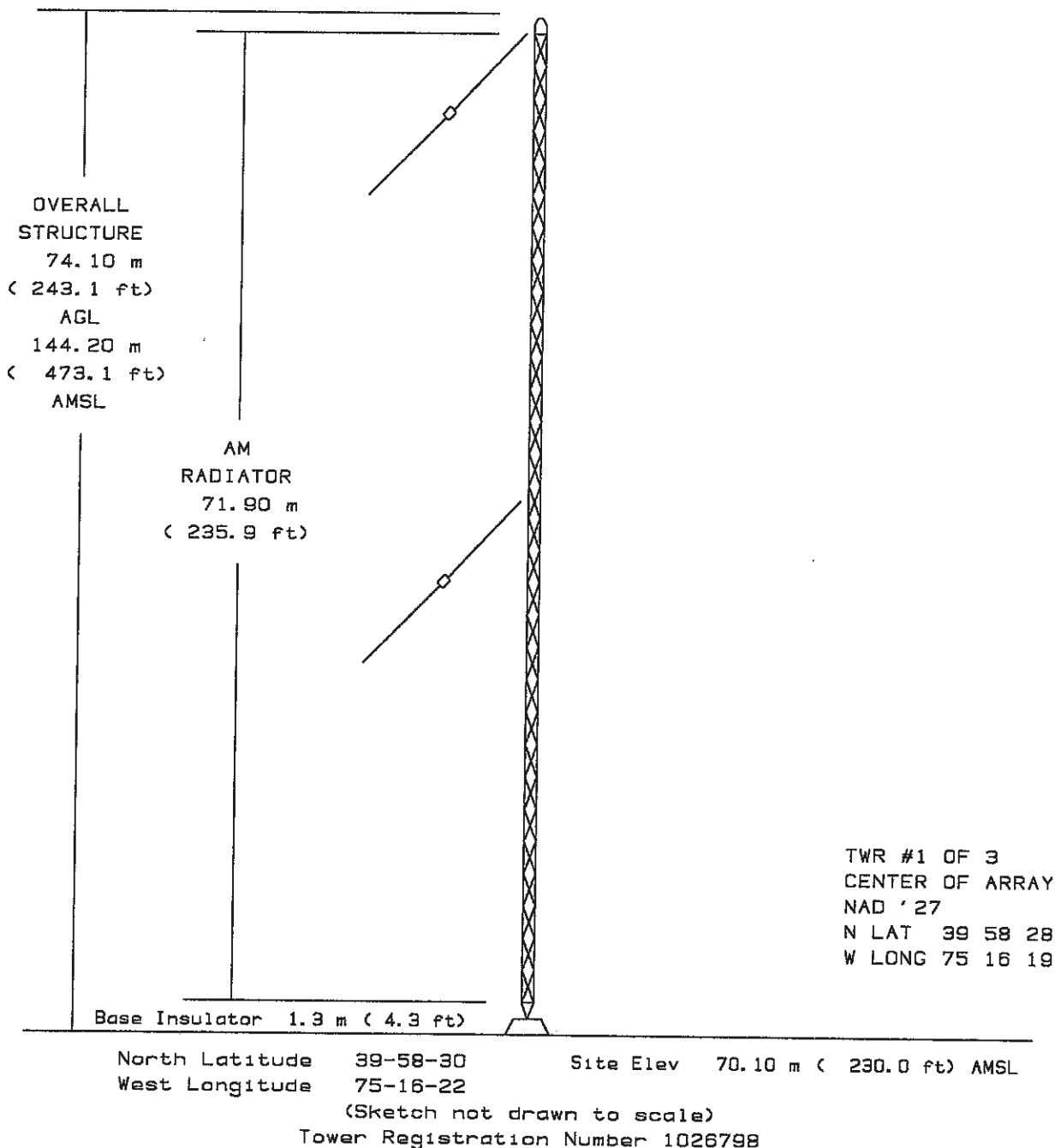
Call	Service	City	State	Chan.	Power	Coordinates		Dist-km	Azimuth	File Number
AM										
WKDN	D	PHILADELPHIA	PA	950	0043.000kW	395828N	751619W	000.0	000.0	BML20120921AFA
WDAS	D	PHILADELPHIA	PA	1480	0005.000kW	395953N	751243W	005.8	062.8	BL
WDAS-N	N	PHILADELPHIA	PA	1480	0001.000kW	395953N	751243W	005.8	062.8	BL
WHAT	U	PHILADELPHIA	PA	1340	0001.000kW	400006N	751235W	006.1	060.3	BL
WURD	D	PHILADELPHIA	PA	900	0001.000kW	395502N	751318W	007.7	146.0	BL20041122AJS
WURD-N	N	PHILADELPHIA	PA	900	0000.105kW	395502N	751318W	007.7	146.0	BL20041122AJS
WNWR	D	PHILADELPHIA	PA	1540	0050.000kW	400246N	751415W	008.5	020.2	BMLT20120724AFT
WNWR	D	PHILADELPHIA	PA	1540	0050.000kW	400246N	751409W	008.5	021.1	BP20161215ABM
WNWR-N	N	PHILADELPHIA	PA	1540	0000.250kW	400246N	751409W	008.5	021.1	BP20161215ABM
FM										
WHHS	M	Havertown	PA	260D	0000.010kW	395859N	751810W	002.8	290.0	BLED20051007ABO
W236CL	X	Philadelphia	PA	236D	0000.007kW	395654N	751309W	005.4	122.8	BLFT20161228AAZ
WPBB	M	Philadelphia	PA	201D	0000.010kW	395653N	751309W	005.4	123.1	BLED20170802ABB
W241CH	X	Philadelphia	PA	241D	0000.250kW	400013N	751208W	006.8	061.3	BPFT20170616AAU
W241CH	X	Philadelphia	PA	241D	0000.099kW	400013N	751208W	006.8	061.3	BLFT20170425AAD
W297AD	X	Philadelphia	PA	297D	0000.020kW	395736N	751127W	007.1	103.1	BLFT20080616AAO
WKDU	M	Philadelphia	PA	219A	0000.800kW	395736N	751127W	007.1	103.1	BLED19960326KA
WBEB	M	Philadelphia	PA	266B	0014.000kW	400219N	751414W	007.7	022.5	BMLH20160603AAO
WXPB	M	Philadelphia	PA	203B	0002.650kW	400219N	751414W	007.7	022.5	BLED20140401AGY
WXTU	M	Philadelphia	PA	223B	0015.000kW	400219N	751414W	007.7	022.5	BLH20031017ACG
W213CA	X	Narberth	PA	213D	0000.080kW	400228N	751438W	007.8	017.9	BNPFT20000118AEF
WBENFM	M	Philadelphia	PA	239B	0008.900kW	400221N	751413W	007.8	022.5	BLH19991122ABE
WMGK	M	Philadelphia	PA	275B	0008.900kW	400221N	751413W	007.8	022.5	BMLH20001030AAV
WREF	M	Philadelphia	PA	283B	0011.500kW	400230N	751424W	007.9	020.0	BMLH20090513AAG
496222	X	Shawmont	PA	217D	0000.010kW	400230N	751424W	007.9	020.0	RNPFT20000418AAH
WDASFM	M	Philadelphia	PA	287B	0016.500kW	400230N	751424W	007.9	020.0	BLH19930208KK
WHYYFM	M	Philadelphia	PA	215B	0013.500kW	400230N	751424W	007.9	020.0	BMLH20040817AAX
WRNB	M	Media	PA	262B	0017.000kW	400236N	751433W	008.1	018.1	BLH20030424ABN
WRTI	M	Philadelphia	PA	211B	0007.700kW	400230N	751411W	008.1	022.0	BLED20100927AHC
WPHFM	M	Jenkintown	PA	280A	0000.270kW	400230N	751411W	008.1	022.0	BLH20070111AAX
WGL	M	Philadelphia	PA	251B	0009.600kW	400230N	751411W	008.1	022.0	BMLH20110422AAL
WIP-FM	M	Philadelphia	PA	231B	0009.600kW	400230N	751411W	008.1	022.0	BLH20070529ADN
WTDYFM	M	Philadelphia	PA	243B	0009.600kW	400230N	751411W	008.1	022.0	BLH20070622ADS
WIOQ	M	Philadelphia	PA	271B	0027.000kW	400237N	751432W	008.1	018.2	BMLH19980922KB
WUSL	M	Philadelphia	PA	255B	0027.000kW	400237N	751432W	008.1	018.2	BLH19980922KE
WXVU	M	Villanova	PA	206A	0000.100kW	400158N	752015W	008.6	319.3	BLED19970211KA
W235AP	X	Radnor	PA	237D	0000.084kW	400158N	752015W	008.6	319.3	BPFT20160127ADQ
W249CU	X	Philadelphia	PA	273D	0000.099kW	395659N	751014W	009.1	107.6	BMPFT20160927ADK
WMMR	M	Philadelphia	PA	227B	0016.500kW	395709N	751005W	009.2	105.4	BMLH20061205ADU
WPPZFM	M	Pennsauken	NJ	300A	0000.780kW	395709N	751005W	009.2	105.4	BLH20050622AAL
W285FF	X	Philadelphia	PA	285D	0000.099kW	395705N	750938W	009.9	105.1	BLFT20170228AAN
W246AQ	X	Collingswood	NJ	246D	0000.010kW	395705N	750938W	009.9	105.1	BLFT19990414TC
WQEW-L	L	Philadelphia	PA	253L1	0000.077kW	395914N	750925W	009.9	081.7	BMLP20170208AIC
WJYN-L	L	North Philade	PA	253L1	0000.100kW	395914N	750924W	009.9	081.7	BLL20170824ABM

MINOR CHANGE APPLICATION
FAMILY STATIONS, INC.
WKDN AM RADIO STATION
has: 950 kHz - 21.0/43.0 kW - DA2
req: 950 kHz - 0.65/43.0 kW - DA2
PHILADELPHIA, PENNSYLVANIA
October 2017

EXHIBIT #1F continued)

ID Stations Study at 39 58 28 N, 75 16 19 W, Search Distance = 10 km

Call	Service	City	State	Chan.	Power	Coordinates	Dist-km	Azimuth	File Number
TV									
WELL-L G		Philadelphia	PA	30 D	0010.000kW	400219N 751414W	007.7	022.5	BLDTL20100208AAC
WEFG-L G		Philadelphia	PA	48 D	0010.000kW	400219N 751414W	007.7	022.5	BLDTL20131212ABH
WTXF-TV X		Philadelphia	PA	42 1C	0530.000kW	400226N 751419W	007.9	021.1	BXLCDDT20091201AG
WTXF-TV X		Philadelphia	PA	42 1C	0530.000kW	400226N 751419W	007.9	021.1	BXPDDT20090603AB
WTXF-D T		Philadelphia	PA	42 1C	0620.000kW	400226N 751419W	007.9	021.1	BLCDT20120511ADN
WUVP-D T		Vineland	NJ	17 1C	0645.000kW	400230N 751423W	008.0	020.1	BLANK0000024815
WHYY-D T		Wilmington	DE	12 1E	0030.000kW	400230N 751423W	008.0	020.1	BLEDDT20110907ADS
WPHL-D T		Philadelphia	PA	17 1C	0645.000kW	400230N 751423W	008.0	020.1	BLCDT20090918ABV
WPVI-D T		Philadelphia	PA	06 1C	0062.900kW	400233N 751433W	008.0	018.3	BPCDDT20120604AEC
WFMZTV D		Allentown	PA	46 1C	0001.800kW	400233N 751433W	008.0	018.3	BLANK0000001524
KYW-DT T		Philadelphia	PA	26 1C	0790.000kW	400233N 751433W	008.0	018.3	BLCDT20111123OFS
WPVI-D T		Philadelphia	PA	06 1C	0034.000kW	400233N 751433W	008.0	018.3	BLCDT20111019ACJ
KYW-DT T		Philadelphia	PA	30 1C	0960.000kW	400233N 751433W	008.0	018.3	BLANK0000024874
WFMZTV G		Philadelphia	PA	45 C	0000.170kW	400233N 751433W	008.0	018.3	BLCDT20111123OFS
WPSG-D T		Philadelphia	PA	33 1C	0880.000kW	400233N 751433W	008.0	018.3	BLANK0000024876
WFMZTV G		Philadelphia	PA	47 C	0000.200kW	400233N 751432W	008.0	018.5	BDRTCT20090604AB
WZPA-L G		Philadelphia	PA	33 D	0003.000kW	400227N 751411W	008.0	022.3	BLDTL20120615AAK
WZPA-L G		Philadelphia	PA	33 D	0003.000kW	400227N 751411W	008.0	022.3	BDFTCT20100915A
WTVE-D T		Reading	PA	25 1C	0126.000kW	400230N 751413W	008.0	021.7	BLCDT20081117ADZ
WTVE D		Reading	PA	25 1C	0126.000kW	400230N 751413W	008.0	021.7	BLCDT20100405ABM
WZPA-L G		Philadelphia	PA	02 D	0000.300kW	400230N 751412W	008.0	021.9	BMPDVL20100322AB
W36DO- G		Darby	PA	36	0001.200kW	400230N 751412W	008.0	021.9	BLDTT20110711ACA
W36DO- G		Darby	PA	11	0001.000kW	400230N 751412W	008.0	021.9	BDISDVL20130208A
WDUM-L G		Springville	NJ	16	0005.000kW	400230N 751411W	008.1	022.0	BLANK0000004382
WYBE-D T		Philadelphia	PA	35 1E	0450.000kW	400230N 751411W	008.1	022.0	BLEDDT20091222ARE
WPPA-C F		Philadelphia	PA	28	0005.700kW	400230N 751411W	008.1	022.0	BLANK0000001669
WPPX-D T		Wilmington	DE	31 1C	0200.000kW	400230N 751411W	008.1	022.0	BLCDT20031203AFL
WPHA-C F		Philadelphia	PA	24ND	0015.000kW	400230N 751411W	008.1	022.0	BLDTA20130920ADK
WPSG-D T		Philadelphia	PA	32 1C	0800.000kW	400230N 751411W	008.1	022.0	BLANK0000001047
WCAU-D T		Philadelphia	PA	34 1C	0700.000kW	400230N 751411W	008.1	022.0	BLCDT20090914AAX
KJWP-D T		Wilmington	DE	02 1C	0009.360kW	400230N 751411W	008.1	022.0	BLCDT20131129A1H
WDUM-L X		Springville	NJ	41Z	0140.000kW	400230N 751411W	008.1	022.0	BLTTTL20041117ACS
WGTW-D T		Burlington	NJ	27 1C	0160.000kW	400230N 751411W	008.1	022.0	BLCDT20060105AAR
WDUM-L G		Springville	NJ	16	0005.000kW	400230N 751411W	008.1	022.0	BDISDVL20130618A
WUVP-D T		Vineland	NJ	29 1C	0335.000kW	400230N 751411W	008.1	022.0	BLCDT20090923ADS
W36DO- G		Darby	PA	14	0005.000kW	400230N 751410W	008.1	022.2	BDISDVL20130710A
WCAU X		Philadelphia	PA	34 1C	0739.000kW	400231N 751412W	008.1	021.8	BXPDDT20100921AA
WCAU X		Philadelphia	PA	34 1C	0739.000kW	400231N 751412W	008.1	021.8	BXLCDDT20120802AA
WTXF-TV X		Philadelphia	PA	42 1C	1000.000kW	400329N 751421W	009.7	016.7	BXPDDT20080429AA
WTXF-TV X		Philadelphia	PA	42 1C	0150.000kW	400329N 751421W	009.7	016.7	BXPDDT20080416AA
WTXF-TV X		Philadelphia	PA	42 1C	1000.000kW	400329N 751421W	009.7	016.7	BXLCDDT20090608AB



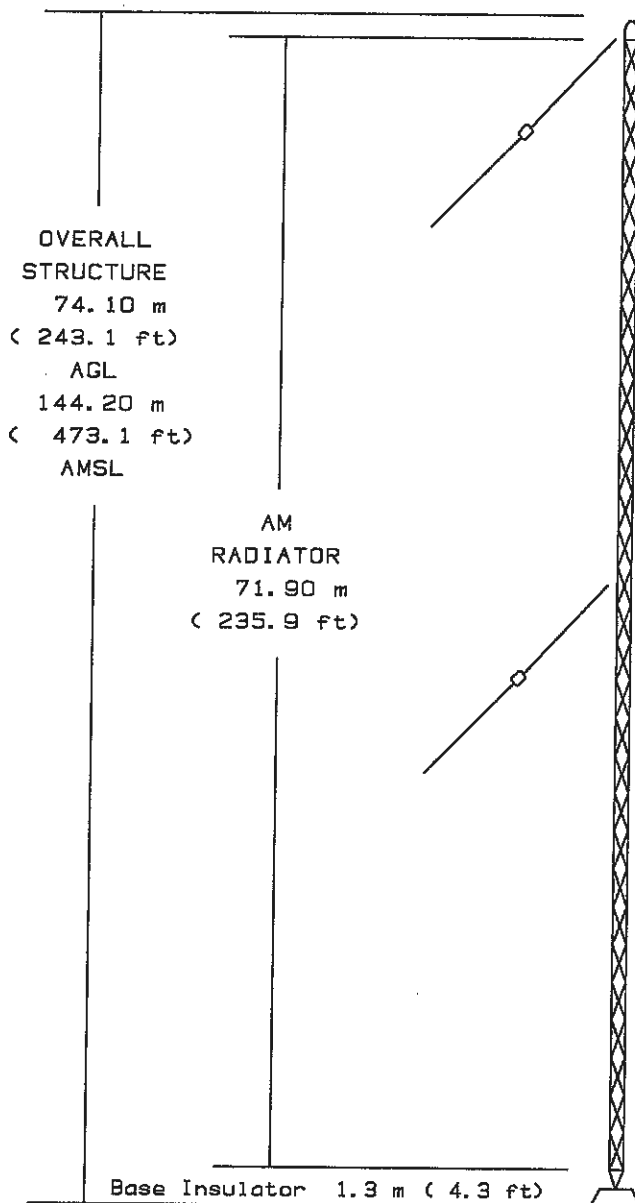
VERTICAL PLAN SKETCH

SITE ELEVATION - 70 m (230 ft) AMSL
TOP OF STRUCTURE - 74 m (243 ft) AGL
144 m (473 ft) AMSL
AM Radiator - 72 m (236 ft)

FIGURES ROUNDED TO NEAREST METER (FOOT).

EXHIBIT #1G1
MINOR CHANGE APPLICATION
FAMILY STATIONS, INC.
WKDN AM RADIO STATION
has: 950 kHz - 21.0/43.0 kW - DA2
req: 950 kHz - 0.65/43.0 kW - DA2
PHILADELPHIA, PENNSYLVANIA
October 2017

GRAHAM BROCK, INC.
BROADCAST TECHNICAL CONSULTANTS



TWR #2 OF 3
CENTER OF ARRAY
NAD '27
N LAT 39 58 28
W LONG 75 16 19

North Latitude 39-58-29
West Longitude 75-16-19

Site Elev 70.10 m (230.0 ft) AMSL

(Sketch not drawn to scale)
Tower Registration Number 1026797

VERTICAL PLAN SKETCH

SITE ELEVATION - 70 m (230 ft) AMSL

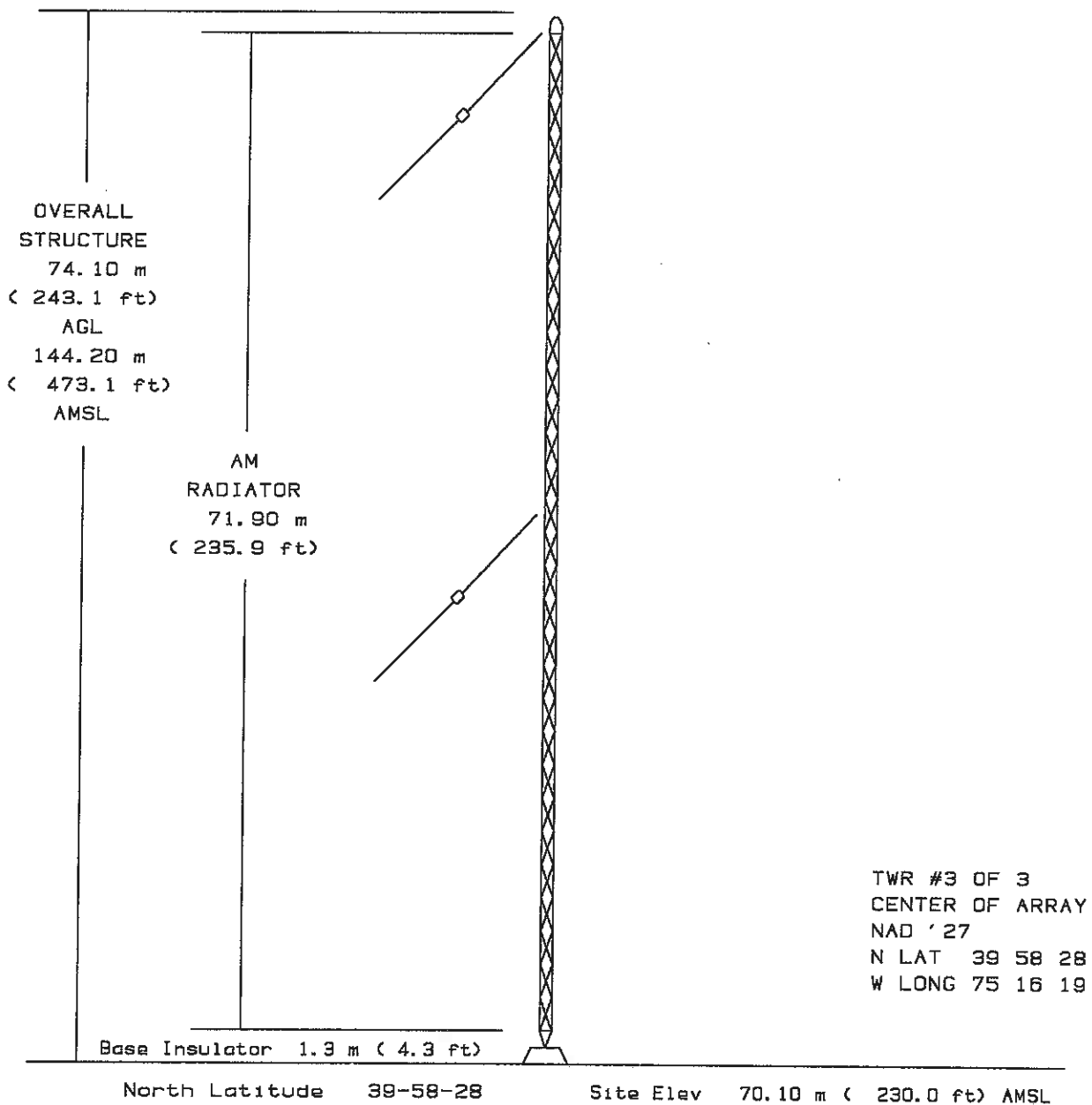
TOP OF STRUCTURE - 74 m (243 ft) AGL
144 m (473 ft) AMSL

AM Radiator - 72 m (236 ft)

FIGURES ROUNDED TO NEAREST METER (FOOT).

EXHIBIT #1G2
MINOR CHANGE APPLICATION
FAMILY STATIONS, INC.
WKDN AM RADIO STATION
has: 950 kHz - 21.0/43.0 kW - DA2
req: 950 kHz - 0.65/43.0 kW - DA2
PHILADELPHIA, PENNSYLVANIA
October 2017

GRAHAM BROCK, INC.
BROADCAST TECHNICAL CONSULTANTS



(Sketch not drawn to scale)
Tower Registration Number 1026796

VERTICAL PLAN SKETCH

SITE ELEVATION - 70 m (230 ft) AMSL
TOP OF STRUCTURE - 74 m (243 ft) AGL
144 m (473 ft) AMSL
AM Radiator - 72 m (236 ft)

FIGURES ROUNDED TO NEAREST METER (FOOT).

EXHIBIT #1G3
MINOR CHANGE APPLICATION
FAMILY STATIONS, INC.
WKDN AM RADIO STATION
has: 950 kHz - 21.0/43.0 kW - DA2
req: 950 kHz - 0.65/43.0 kW - DA2
PHILADELPHIA, PENNSYLVANIA
October 2017

GRAHAM BROCK, INC.
BROADCAST TECHNICAL CONSULTANTS

Registration 1026798

EXHIBIT #1H1
MINOR CHANGE APPLICATION
FAMILY STATIONS, INC.
WKDN AM RADIO STATION
has: 950 kHz - 21.0/43.0 kW - DA2
req: 950 kHz - 0.65/43.0 kW - DA2
PHILADELPHIA, PENNSYLVANIA
October 2017

Registration Detail

Reg Number	1026798	Status	Constructed
File Number	A0928302	Constructed	01/01/1935
EMI	No	Dismantled	
NEPA	No		

Antenna Structure

Structure Type 3TA3 - Antenna Tower Array - 1st N = # towers 2nd N =

Location (in NAD83 Coordinates)

Lat/Long	39-58-30.0 N 075-16-21.0 W	Address	TWR 3 - 7701 BROOKHAVEN RD
City, State	PHILADELPHIA , PA		
Zip	19151	County	PHILADELPHIA
Center of AM Array	39-58-28.0 N 075-16-19.0 W	Position of Tower in Array	

Heights (meters)

Elevation of Site Above Mean Sea Level	Overall Height Above Ground (AGL)
70.1	74.1
Overall Height Above Mean Sea Level	Overall Height Above Ground w/o Appurtenances
144.2	73.2

Painting and Lighting Specifications

None

FAA Notification

FAA Study	97-AEA-2326-OE	FAA Issue Date	09/12/1997
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Owner & Contact Information

FRN	0001545607	Owner Entity Type	Corporation
-----	------------	-------------------	-------------

Owner

FAMILY STATIONS, INC.
112 NORTH ELM STREET
SHENANDOAH , IA 51601

P: (712)246-5151
F: (712)246-5152
E: JBURKHISER@FAMILYRADIO.ORG

Contact

BURKHISER , JENNIFER D
Attention To: JENNIFER BURKHISER
112 NORTH ELM STREET
SHENANDOAH , IA 51601

P: (712)246-5151
F: (712)246-5152
E: JBURKHISER@FAMILYRADIO.ORG

Last Action Status

Status	Constructed	Received	12/09/2014
Purpose	Admin Update	Entered	12/09/2014
Mode	Interactive		

Related Applications

12/09/2014	A0928302 - Admin Update (AU)
12/21/2012	A0808781 - Change Owner (OC)

06/28/2007 A0553116 - Admin Update (AU)

Related applications (4)

Comments

Comments

03/10/2000 CORRECTED REFERENCED FAA STUDY # AND CENTERPOINT LONGITUDE FROM 075-16-29W BASED ON NEW FAA CLEARANCE AND LICENSE APPLICATION BL-971023KE.

History

Date

Event

12/10/2014	Registration Printed
12/09/2014	ASR Application receipt email sent: Tower email
12/09/2014	Administrative Update Received

All History (10)

Automated Letters

12/10/2014	Authorization, Reference
12/22/2012	Authorization, Reference
12/22/2012	Ownership Change, Reference 737978

All letters (4)

Registration 1026797

EXHIBIT #1H2
MINOR CHANGE APPLICATION
FAMILY STATIONS, INC.
WKDN AM RADIO STATION
has: 950 kHz - 21.0/43.0 kW - DA2
req: 950 kHz - 0.65/43.0 kW - DA2
PHILADELPHIA, PENNSYLVANIA
October 2017

Registration Detail

Reg Number	1026797	Status	Constructed
File Number	A0928303	Constructed	01/01/1935
EMI	No	Dismantled	
NEPA	No		

Antenna Structure

Structure Type 3TA2 - Antenna Tower Array - 1st N = # towers 2nd N =

Location (in NAD83 Coordinates)

Lat/Long	39-58-29.0 N 075-16-18.0 W	Address	TWR 2 - 7701 BROOKHAVEN RD
City, State	PHILADELPHIA , PA		
Zip	19151	County	PHILADELPHIA
Center of AM Array	39-58-28.0 N 075-16-19.0 W	Position of Tower in Array	

Heights (meters)

Elevation of Site Above Mean Sea Level	Overall Height Above Ground (AGL)
70.1	74.1
Overall Height Above Mean Sea Level	Overall Height Above Ground w/o Appurtenances
144.2	73.2

Painting and Lighting Specifications

FAA Chapters 3, 4, 5, 9
Paint and Light in Accordance with FAA Circular Number 70/7460-1G

FAA Notification

FAA Study	97-AEA-2326-OE	FAA Issue Date	09/12/1997
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Owner & Contact Information

FRN	0001545607	Owner Entity Type	Corporation
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Owner

FAMILY STATIONS, INC. 112 NORTH ELM STREET SHENANDOAH , IA 51601	P: (712)246-5151 F: (712)246-5152 E: JBURKHISER@FAMILYRADIO.ORG
--	---

Contact

BURKHISER , JENNIFER D Attention To: JENNIFER BURKHISER 112 NORTH ELM STREET SHENANDOAH , IA 51601	P: (712)246-5151 F: (712)246-5152 E: JBURKHISER@FAMILYRADIO.ORG
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Last Action Status

Status	Constructed	Received	12/09/2014
Purpose	Admin Update	Entered	12/09/2014
Mode	Interactive		

Related Applications

12/09/2014	A0928303 - Admin Update (AU)
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12/21/2012 A0808780 - Change Owner (OC)

06/28/2007 A0553115 - Admin Update (AU)

Related applications (4)

Comments

Comments

10/14/1998 CORRECTED REFERENCE FAA STUDY # AND CENTERPOINT LONGITUDE FROM 075-16-29W BASED ON NEW FAA CLEARANCE AND LICENSE APPLICATION BL-971023KE.

History

Date

Event

12/10/2014

Registration Printed

12/09/2014

ASR Application receipt email sent: Tower email

12/09/2014

Administrative Update Received

All History (9)

Automated Letters

12/10/2014

Authorization, Reference

12/22/2012

Authorization, Reference

12/22/2012

Ownership Change, Reference 737977

All letters (4)

Registration 1026796

EXHIBIT #1H3
MINOR CHANGE APPLICATION
FAMILY STATIONS, INC.
WKDN AM RADIO STATION
has: 950 kHz - 21.0/43.0 kW - DA2
req: 950 kHz - 0.65/43.0 kW - DA2
PHILADELPHIA, PENNSYLVANIA
October 2017

Registration Detail

Reg Number 1026796
File Number A0928304
EMI No
NEPA No

Status Constructed
Constructed 01/01/1935
Dismantled

Antenna Structure

Structure Type 3TA1 - Antenna Tower Array - 1st N = # towers 2nd N =

Location (in NAD83 Coordinates)

Lat/Long 39-58-28.0 N 075-16-15.0 W
City, State PHILADELPHIA , PA
Zip 19151
Center of 39-58-28.0 N 075-16-19.0 W
AM Array

Address TWR 1 - 7701 BROOKHAVEN RD
County PHILADELPHIA
Position of Tower
in Array

Heights (meters)

Elevation of Site Above Mean Sea Level
70.1
Overall Height Above Mean Sea Level
144.2

Overall Height Above Ground (AGL)
74.1
Overall Height Above Ground w/o Appurtenances
73.2

Painting and Lighting Specifications

None

FAA Notification

FAA Study 97-AEA-2326-OE

FAA Issue Date 09/12/1997

Owner & Contact Information

FRN 0001545607

Owner Entity Corporation
Type

Owner

FAMILY STATIONS, INC.
112 NORTH ELM STREET
SHENANDOAH , IA 51601

P: (712)246-5151
F: (712)246-5152
E: JBURKHISER@FAMILYRADIO.ORG

Contact

BURKHISER , JENNIFER D
Attention To: JENNIFER BURKHISER
112 NORTH ELM STREET
SHENANDOAH , IA 51601

P: (712)246-5151
F: (712)246-5152
E: JBURKHISER@FAMILYRADIO.ORG

Last Action Status

Status Constructed
Purpose Admin Update
Mode Interactive

Received 12/09/2014
Entered 12/09/2014

Related Applications

12/09/2014 A0928304 - Admin Update (AU)
12/21/2012 A0808779 - Change Owner (OC)

06/28/2007 A0553114 - Admin Update (AU)

Related applications (4)

Comments

Comments

03/10/2000 CORRECTED REFERENCED FAA STUDY # & CENTERPOINT LONGITUDE FROM 075-16-29W BASED ON NEW FAA CLEARANCE AND LICENSE APPLICATION BL-971023KE.

History

Date

Event

12/10/2014	Registration Printed
12/09/2014	ASR Application receipt email sent: Tower email
12/09/2014	Administrative Update Received

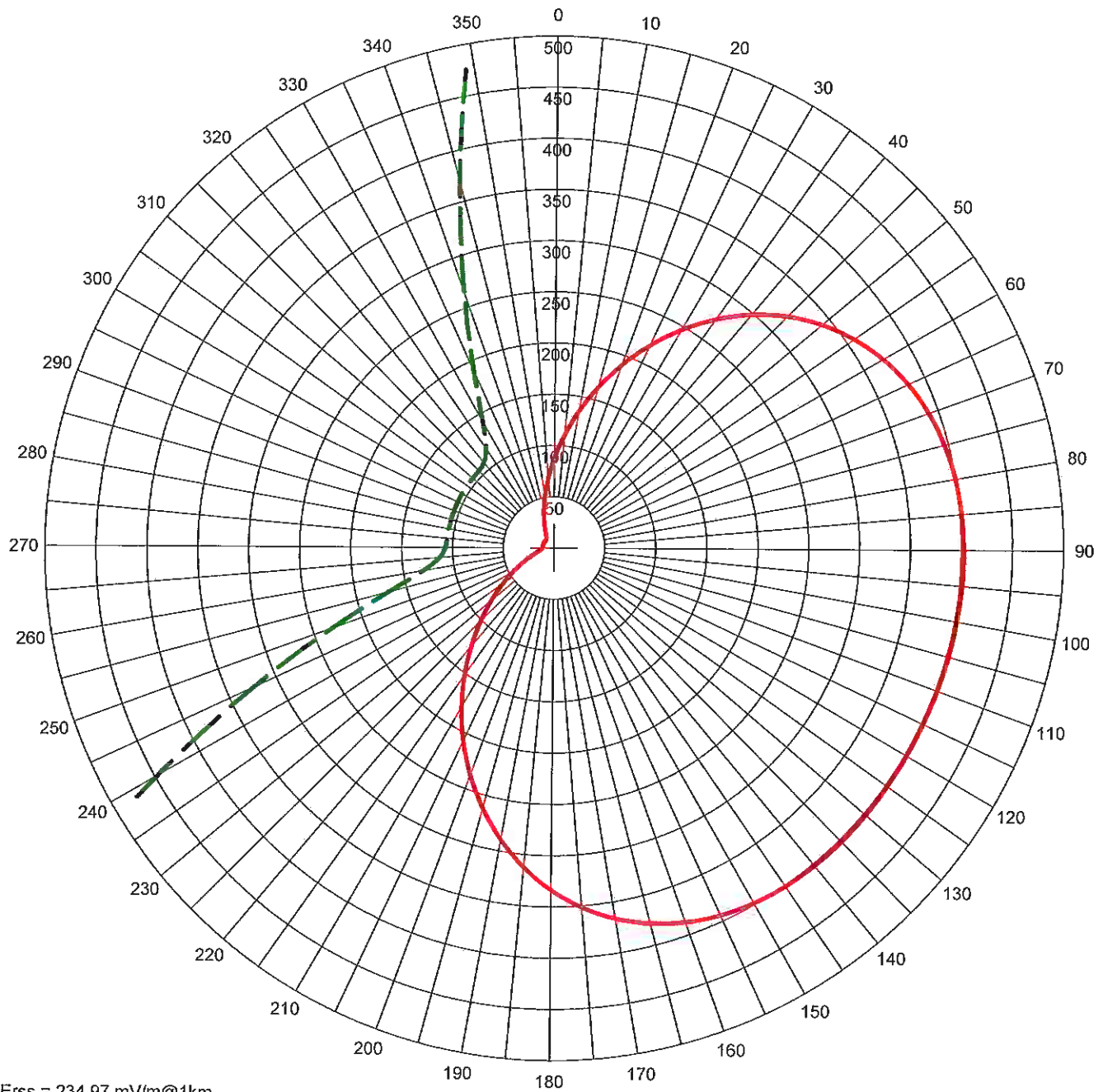
All History (10)

Automated Letters

12/10/2014	Authorization, Reference
12/22/2012	Authorization, Reference
12/22/2012	Ownership Change, Reference 737976

All letters (4)

WKDN AM Nighttime Directional Pattern - Exhibit #111



Erss = 234.97 mV/m@1km
 Theo RMS: 250.972 mV/m@1km
 Std RMS: 263.73 mV/m@1km
 Q: 10.0 mV/m@1km

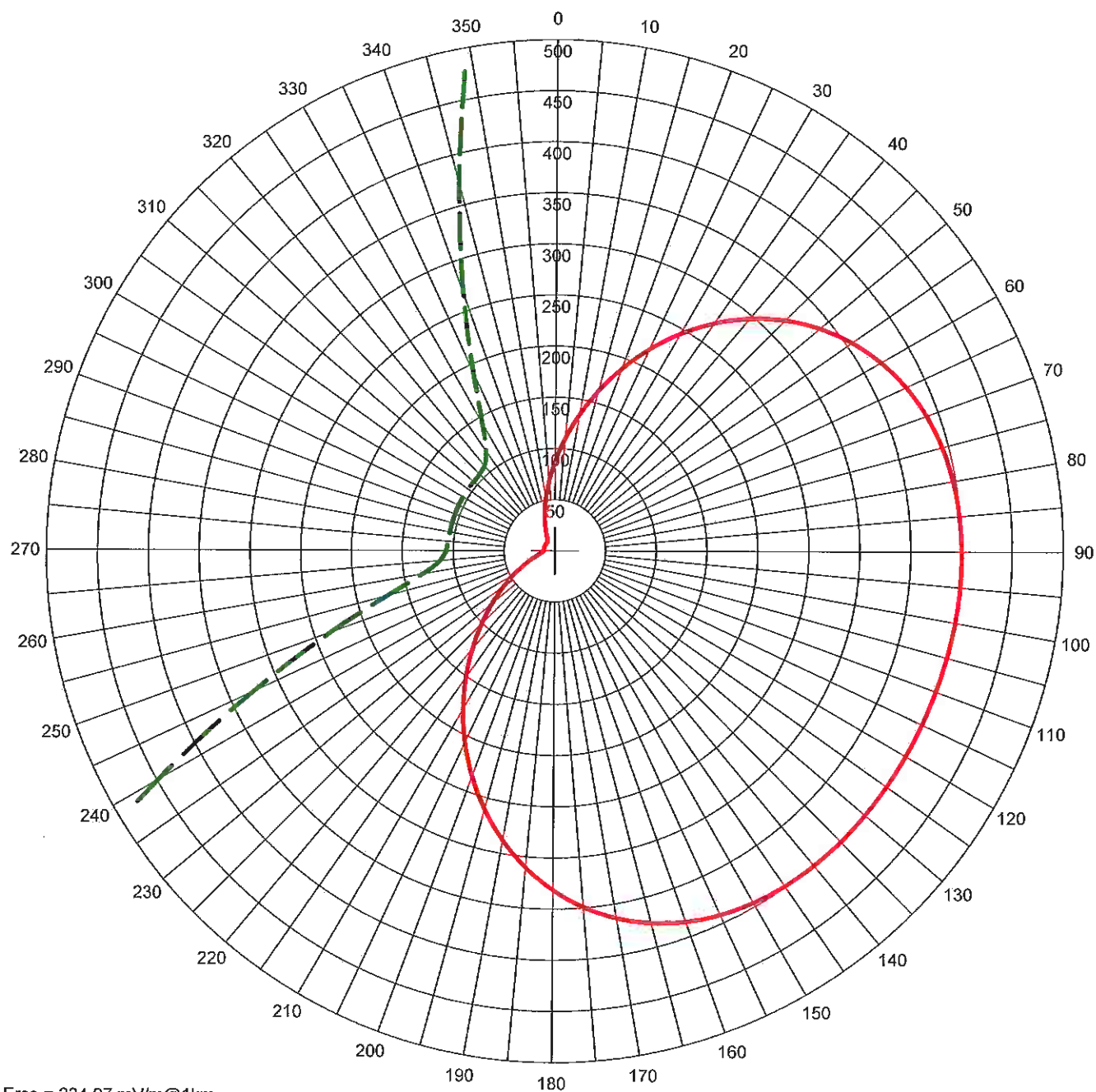
Standard Horizontal Plane Pattern

— Pattern (mV/m @ 1km)
 - - - Pattern X10

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Switch	TL Switch	A (deg)	B (deg)	C (deg)	D (deg)
1	0.500	87.0	0.0	0.0	82.0	0	0	0.0	0.0	0.0	0.0
2	1.000	0.0	93.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0
3	0.500	-87.0	186.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0

Call: WKDN
 Freq: 950 kHz
 PHILADELPHIA, PA, US
 Hours: N
 Lat: 39-58-28 N
 Lng: 075-16-19 W
 Power: 0.65 kW
 Theo RMS: 250.97 mV/m@1km
 @ 0.65 kW

WKDN AM Nighttime Directional Pattern - Exhibit #112



Erss = 234.97 mV/m@1km
 Theo RMS: 250.972 mV/m@1km
 Std RMS: 263.73 mV/m@1km
 Q: 10.0 mV/m@1km

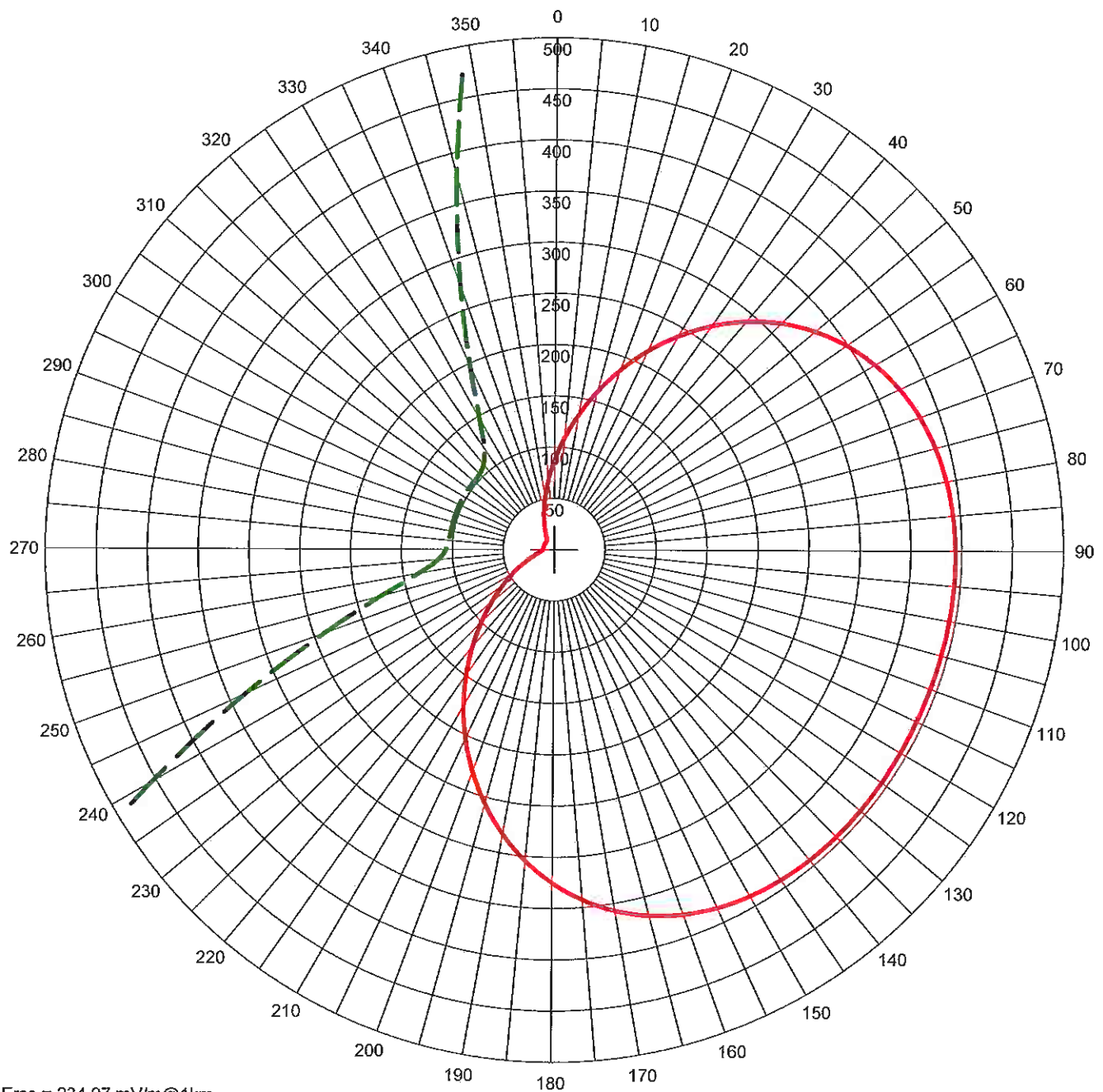
Standard Pattern at Theta = 5.00 Degrees

— Pattern (mV/m @ 1km)
 - - - Pattern X10

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Switch	TL Switch	A (deg)	B (deg)	C (deg)	D (deg)
1	0.500	87.0	0.0	0.0	82.0	0	0	0.0	0.0	0.0	0.0
2	1.000	0.0	93.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0
3	0.500	-87.0	186.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0

Call: WKDN
 Freq: 950 kHz
 PHILADELPHIA, PA, US
 Hours: N
 Lat: 39-58-28 N
 Lng: 075-16-19 W
 Power: 0.65 kW
 Theo RMS: 250.97 mV/m@1km
 @ 0.65 kW

WKDN AM Nighttime Directional Pattern - Exhibit #113



Erss = 234.97 mV/m@1km
 Theo RMS: 250.972 mV/m@1km
 Std RMS: 263.73 mV/m@1km
 Q: 10.0 mV/m@1km

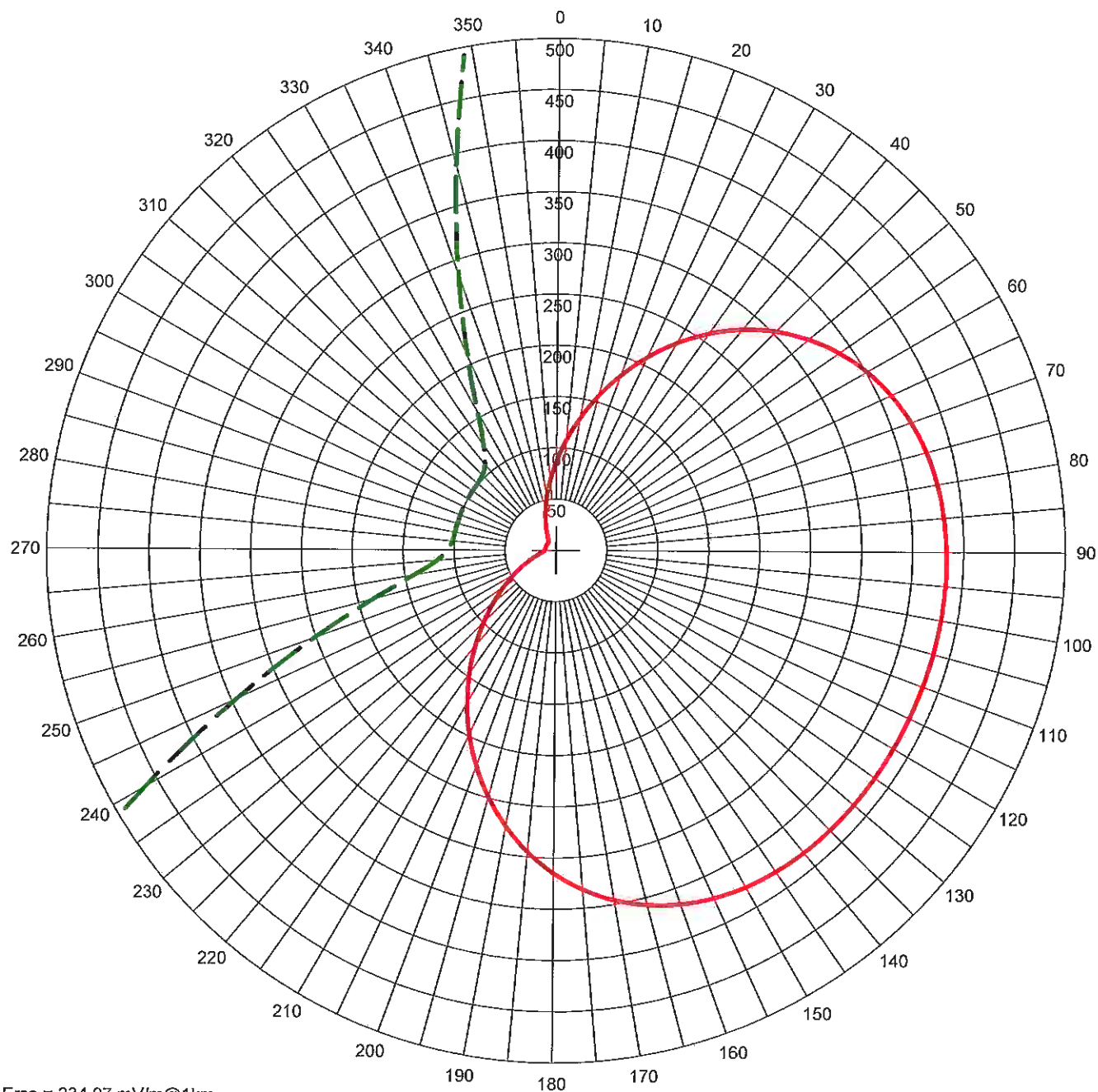
Standard Pattern at Theta = 10.00 Degrees

— Pattern (mV/m @ 1km)
 - - - Pattern X10

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Switch	TL Switch	A (deg)	B (deg)	C (deg)	D (deg)
1	0.500	87.0	0.0	0.0	82.0	0	0	0.0	0.0	0.0	0.0
2	1.000	0.0	93.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0
3	0.500	-87.0	186.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0

Call: WKDN
 Freq: 950 kHz
 PHILADELPHIA, PA, US
 Hours: N
 Lat: 39-58-28 N
 Lng: 075-16-19 W
 Power: 0.65 kW
 Theo RMS: 250.97 mV/m@1km
 @ 0.65 kW

WKDN AM Nighttime Directional Pattern - Exhibit #114



Erss = 234.97 mV/m@1km
 Theo RMS: 250.972 mV/m@1km
 Std RMS: 263.73 mV/m@1km
 Q: 10.0 mV/m@1km

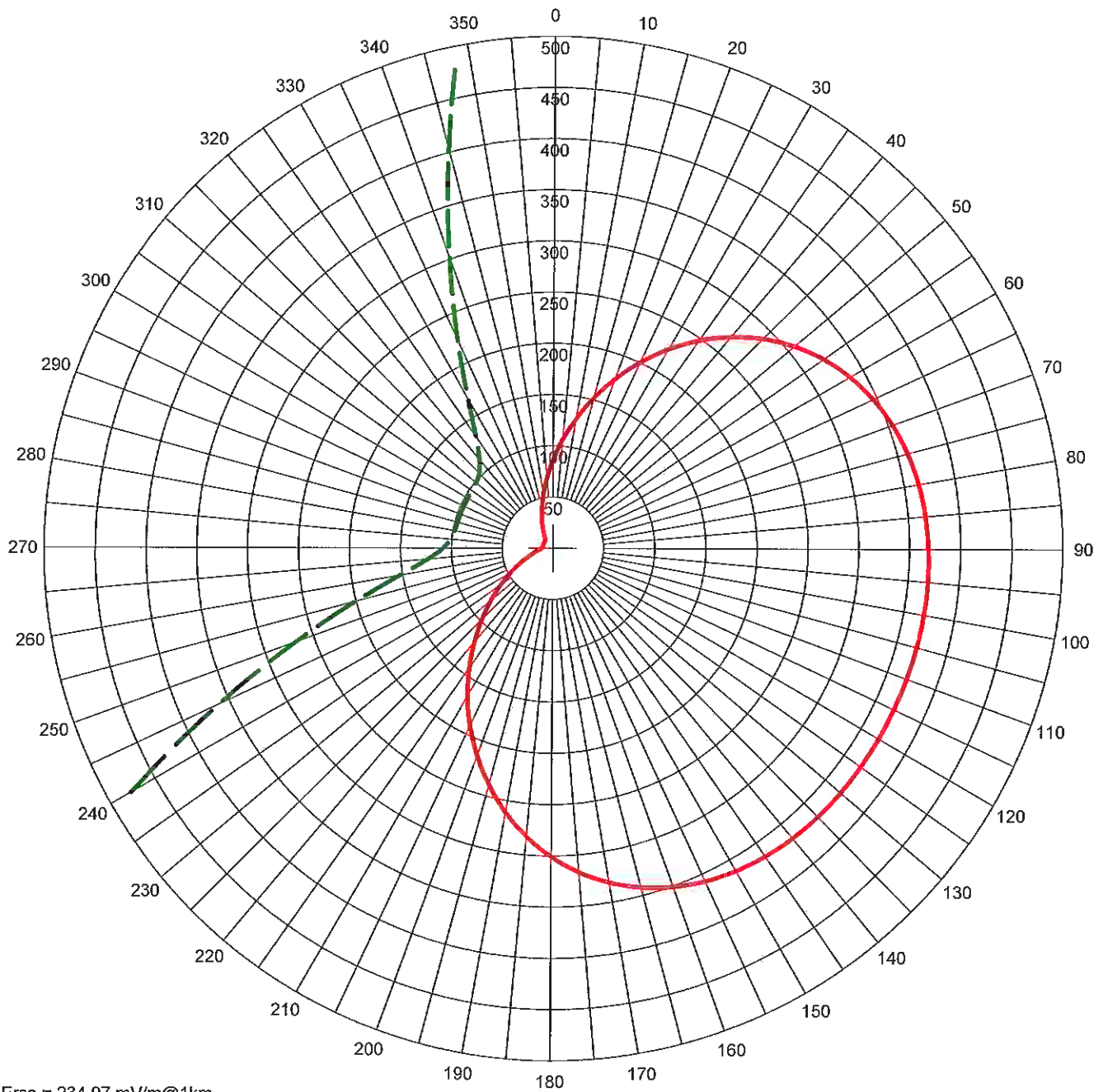
Standard Pattern at Theta = 15.00 Degrees

— Pattern (mV/m @ 1km)
 - - - Pattern X10

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Switch	TL Switch	A (deg)	B (deg)	C (deg)	D (deg)
1	0.500	87.0	0.0	0.0	82.0	0	0	0.0	0.0	0.0	0.0
2	1.000	0.0	93.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0
3	0.500	-87.0	186.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0

Call: WKDN
 Freq: 950 kHz
 PHILADELPHIA, PA, US
 Hours: N
 Lat: 39-58-28 N
 Lng: 075-16-19 W
 Power: 0.65 kW
 Theo RMS: 250.97 mV/m@1km
 @ 0.65 kW

WKDN AM Nighttime Directional Pattern - Exhibit #115



Erss = 234.97 mV/m@1km
 Theo RMS: 250.972 mV/m@1km
 Std RMS: 263.73 mV/m@1km
 Q: 10.0 mV/m@1km

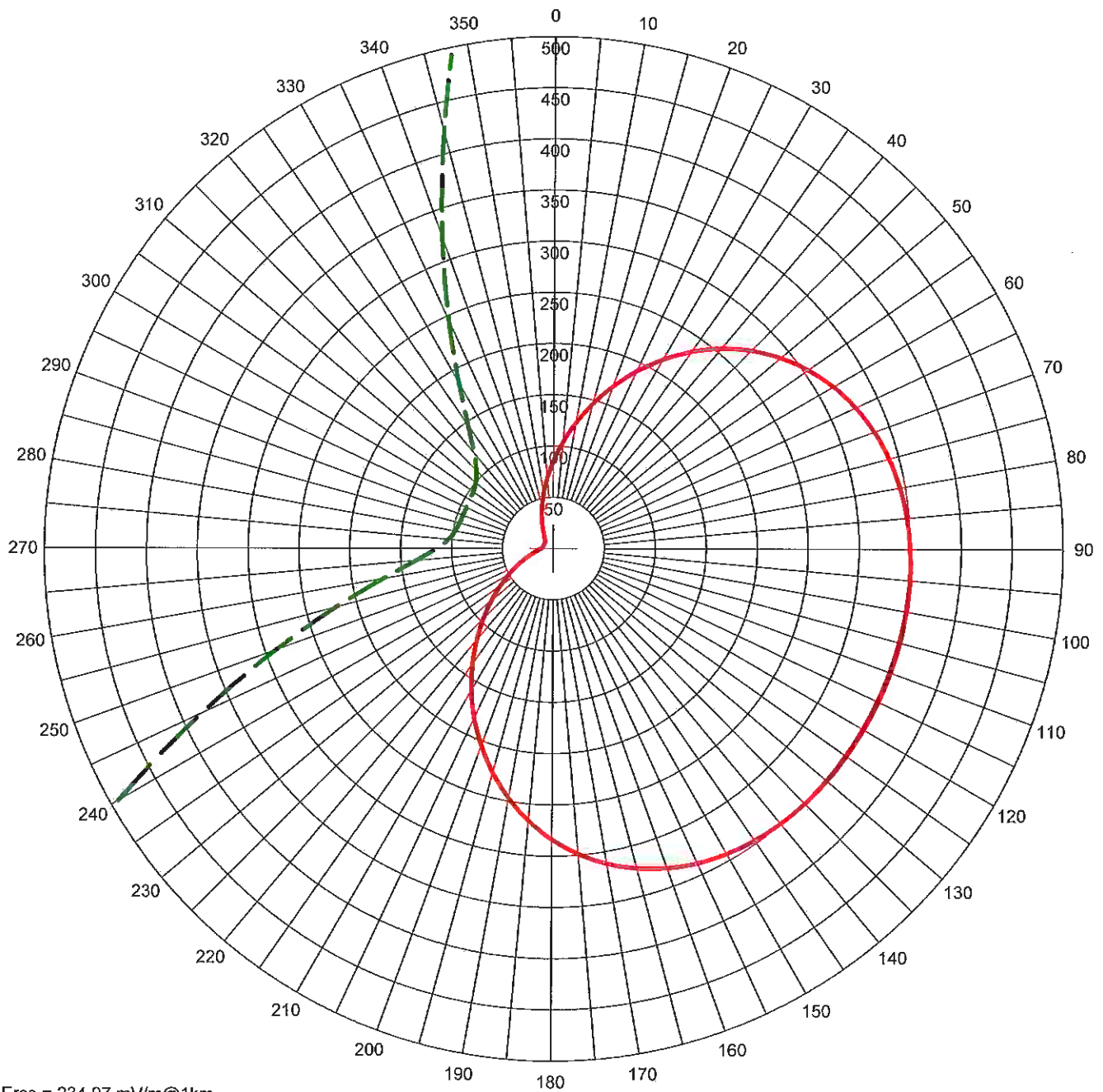
Standard Pattern at Theta = 20.00 Degrees

— Pattern (mV/m @ 1km)
 - - - Pattern X10

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Switch	TL Switch	A (deg)	B (deg)	C (deg)	D (deg)
1	0.500	87.0	0.0	0.0	82.0	0	0	0.0	0.0	0.0	0.0
2	1.000	0.0	93.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0
3	0.500	-87.0	186.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0

Call: WKDN
 Freq: 950 kHz
 PHILADELPHIA, PA, US
 Hours: N
 Lat: 39-58-28 N
 Lng: 075-16-19 W
 Power: 0.65 kW
 Theo RMS: 250.97 mV/m@1km
 @ 0.65 kW

WKDN AM Nighttime Directional Pattern - Exhibit #11I6



Erss = 234.97 mV/m@1km
 Theo RMS: 250.972 mV/m@1km
 Std RMS: 263.73 mV/m@1km
 Q: 10.0 mV/m@1km

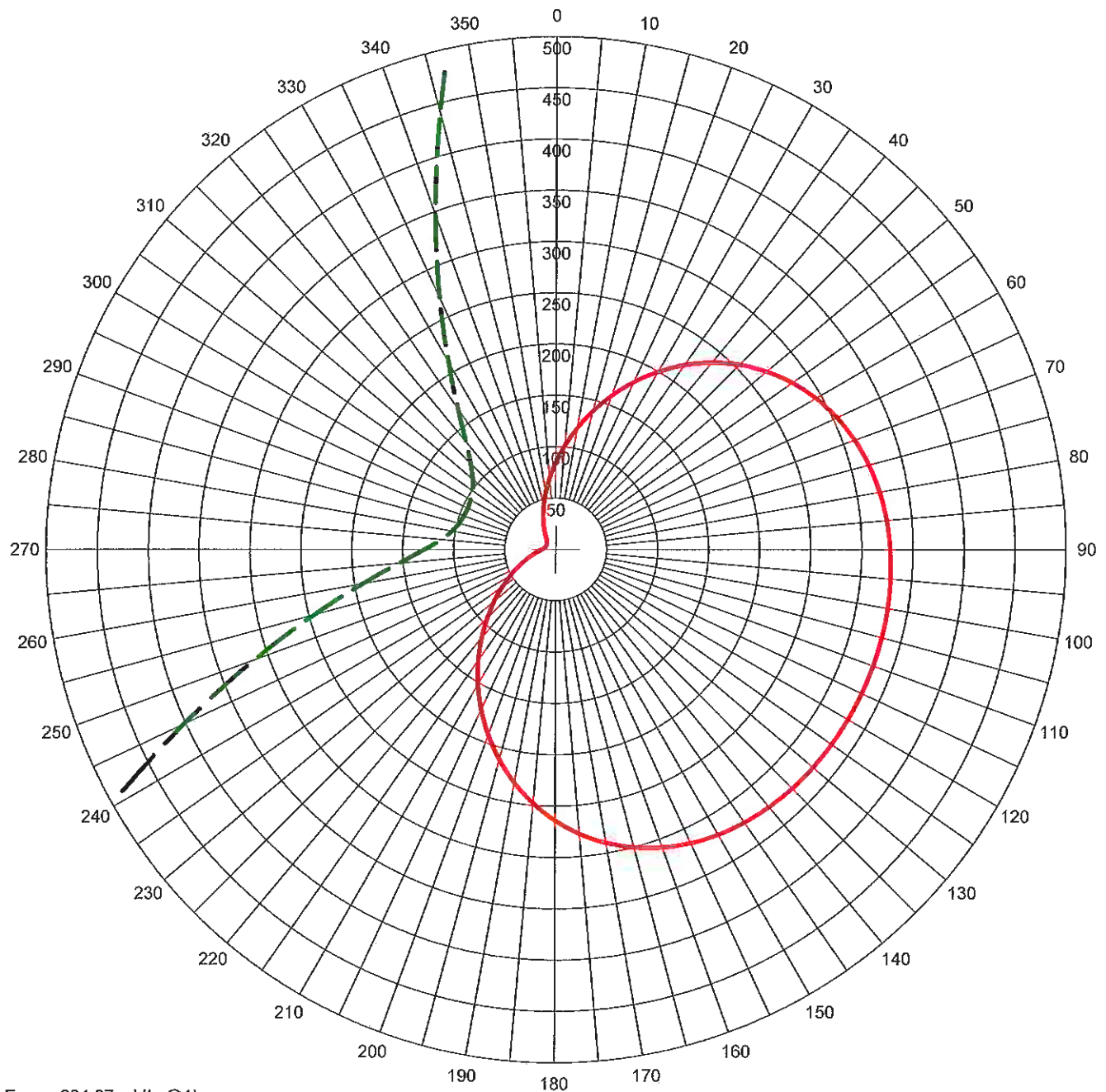
Standard Pattern at Theta = 25.00 Degrees

— Pattern (mV/m @ 1km)
 - - - Pattern X10

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Switch	TL Switch	A (deg)	B (deg)	C (deg)	D (deg)
1	0.500	87.0	0.0	0.0	82.0	0	0	0.0	0.0	0.0	0.0
2	1.000	0.0	93.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0
3	0.500	-87.0	186.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0

Call: WKDN
 Freq: 950 kHz
 PHILADELPHIA, PA, US
 Hours: N
 Lat: 39-58-28 N
 Lng: 075-16-19 W
 Power: 0.65 kW
 Theo RMS: 250.97 mV/m@1km
 @ 0.65 kW

WKDN AM Nighttime Directional Pattern - Exhibit #117



Erss = 234.97 mV/m@1km
 Theo RMS: 250.972 mV/m@1km
 Std RMS: 263.73 mV/m@1km
 Q: 10.0 mV/m@1km

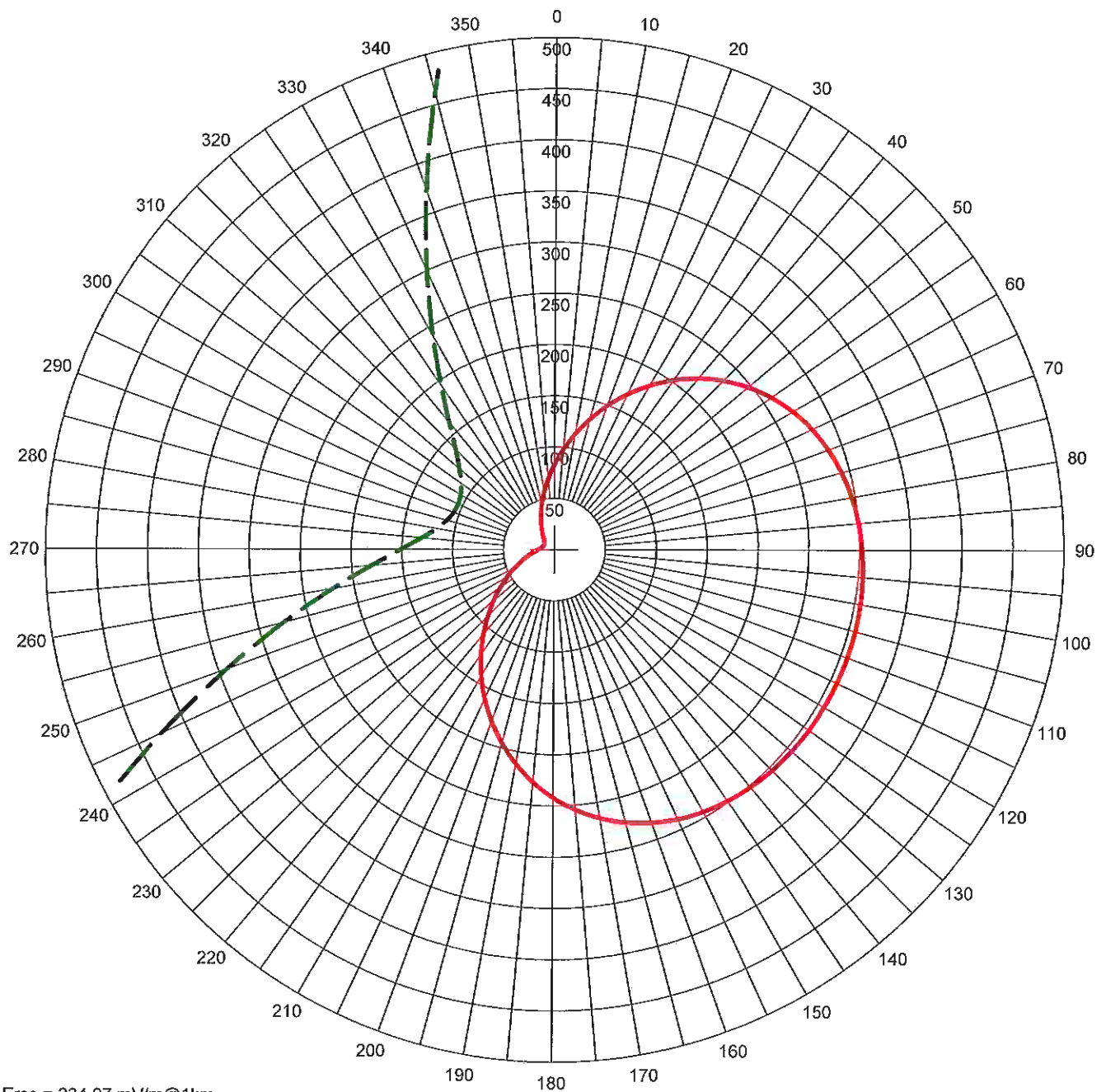
Standard Pattern at Theta = 30.00 Degrees

— Pattern (mV/m @ 1km)
 — Pattern X10

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Switch	TL Switch	A (deg)	B (deg)	C (deg)	D (deg)
1	0.500	87.0	0.0	0.0	82.0	0	0	0.0	0.0	0.0	0.0
2	1.000	0.0	93.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0
3	0.500	-87.0	186.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0

Call: WKDN
 Freq: 950 kHz
 PHILADELPHIA, PA, US
 Hours: N
 Lat: 39-58-28 N
 Lng: 075-16-19 W
 Power: 0.65 kW
 Theo RMS: 250.97 mV/m@1km
 @ 0.65 kW

WKDN AM Nighttime Directional Pattern - Exhibit #118



Erss = 234.97 mV/m@1km
 Theo RMS: 250.972 mV/m@1km
 Std RMS: 263.73 mV/m@1km
 Q: 10.0 mV/m@1km

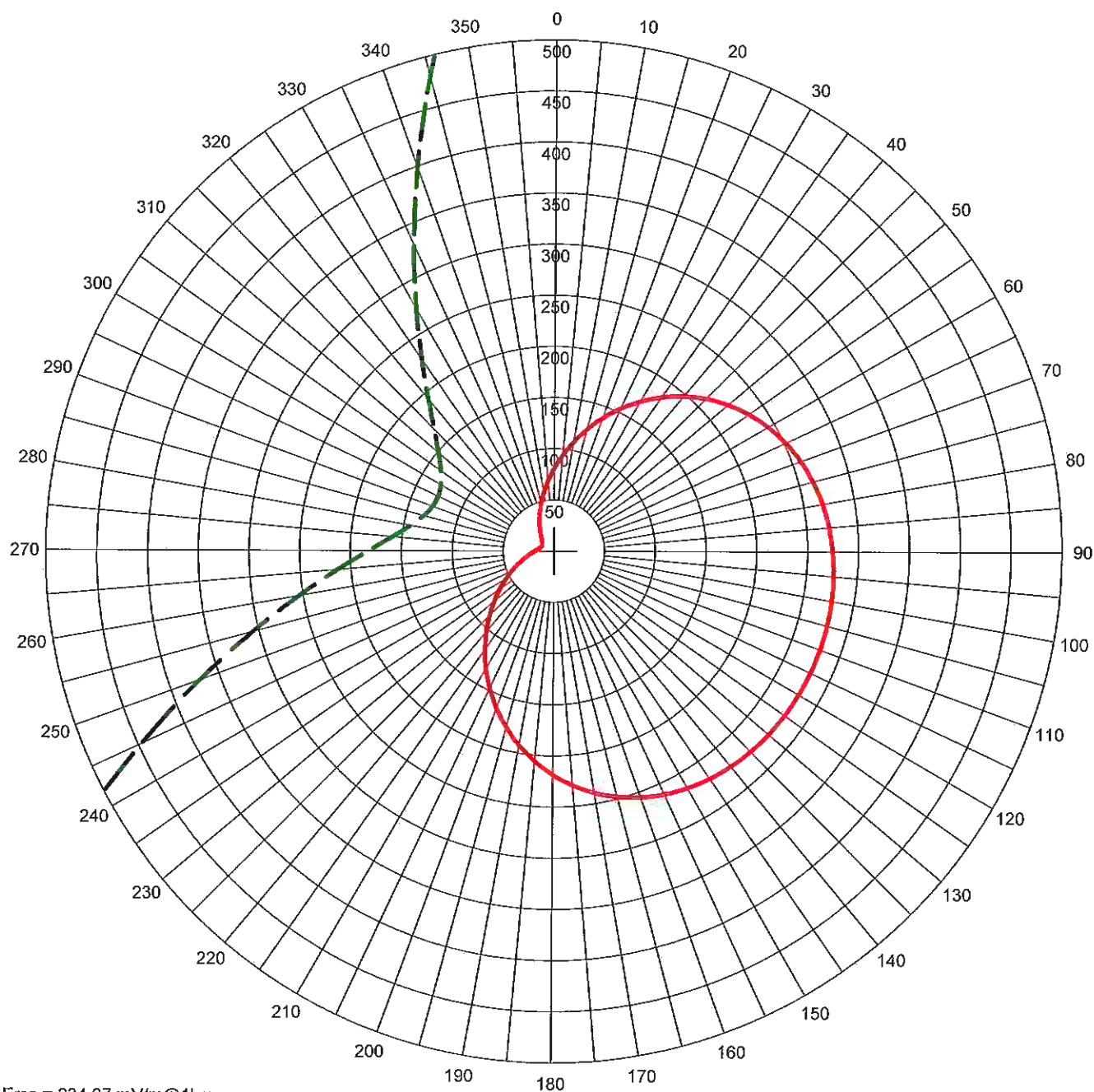
Standard Pattern at Theta = 35.00 Degrees

— Pattern (mV/m @ 1km)
 - - - Pattern X10

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Switch	TL Switch	A (deg)	B (deg)	C (deg)	D (deg)
1	0.500	87.0	0.0	0.0	82.0	0	0	0.0	0.0	0.0	0.0
2	1.000	0.0	93.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0
3	0.500	-87.0	186.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0

Call: WKDN
 Freq: 950 kHz
 PHILADELPHIA, PA, US
 Hours: N
 Lat: 39-58-28 N
 Lng: 075-16-19 W
 Power: 0.65 kW
 Theo RMS: 250.97 mV/m@1km
 @ 0.65 kW

WKDN AM Nighttime Directional Pattern - Exhibit #119



Erss = 234.97 mV/m@1km
 Theo RMS: 250.972 mV/m@1km
 Std RMS: 263.73 mV/m@1km
 Q: 10.0 mV/m@1km

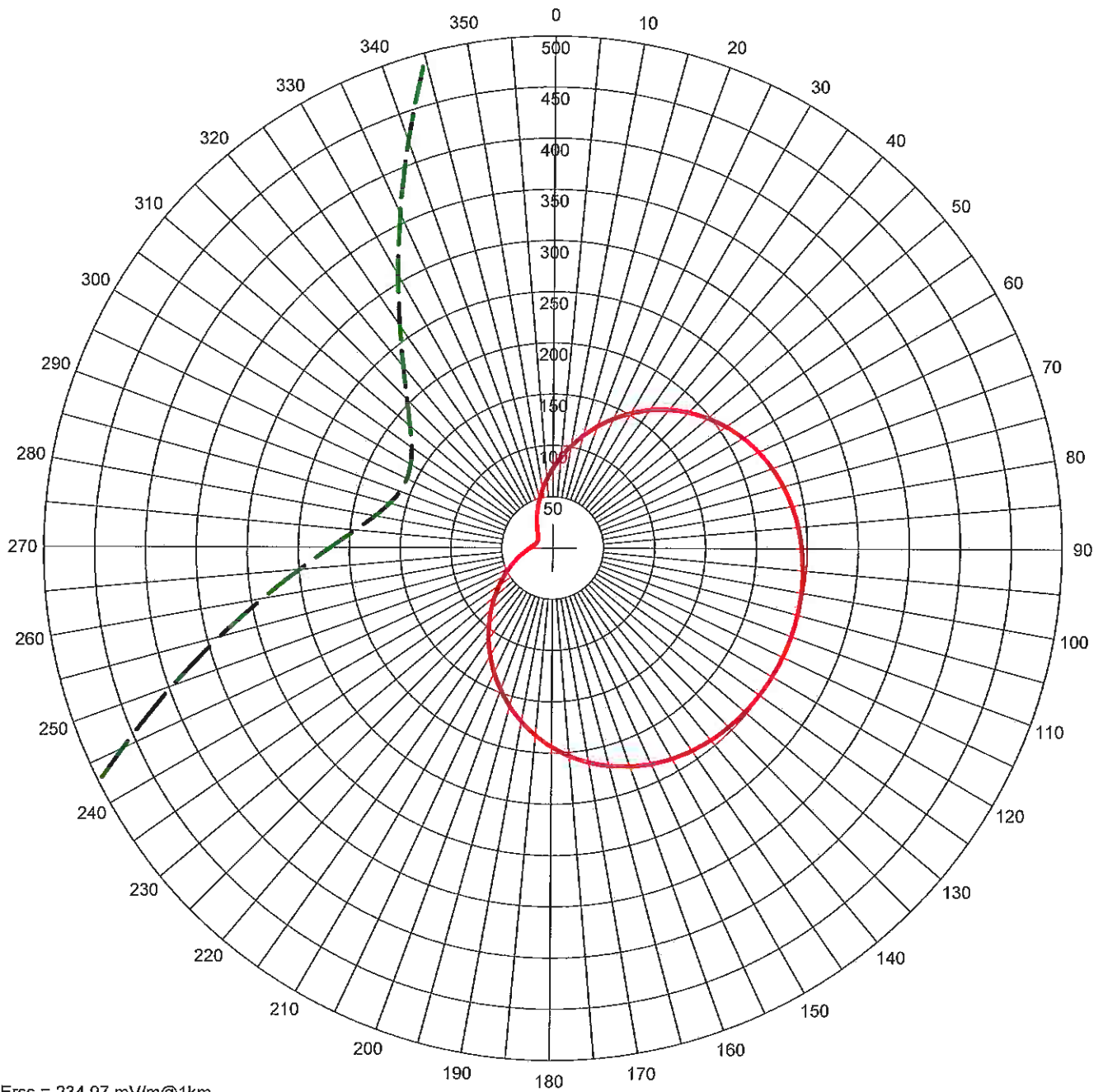
Standard Pattern at Theta = 40.00 Degrees

— Pattern (mV/m @ 1km)
 - - - Pattern X10

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Switch	TL Switch	A (deg)	B (deg)	C (deg)	D (deg)
1	0.500	87.0	0.0	0.0	82.0	0	0	0.0	0.0	0.0	0.0
2	1.000	0.0	93.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0
3	0.500	-87.0	186.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0

Call: WKDN
 Freq: 950 kHz
 PHILADELPHIA, PA, US
 Hours: N
 Lat: 39-58-28 N
 Lng: 075-16-19 W
 Power: 0.65 kW
 Theo RMS: 250.97 mV/m@1km
 @ 0.65 kW

WKDN AM Nighttime Directional Pattern - Exhibit #1110



Erss = 234.97 mV/m@1km
 Theo RMS: 250.972 mV/m@1km
 Std RMS: 263.73 mV/m@1km
 Q: 10.0 mV/m@1km

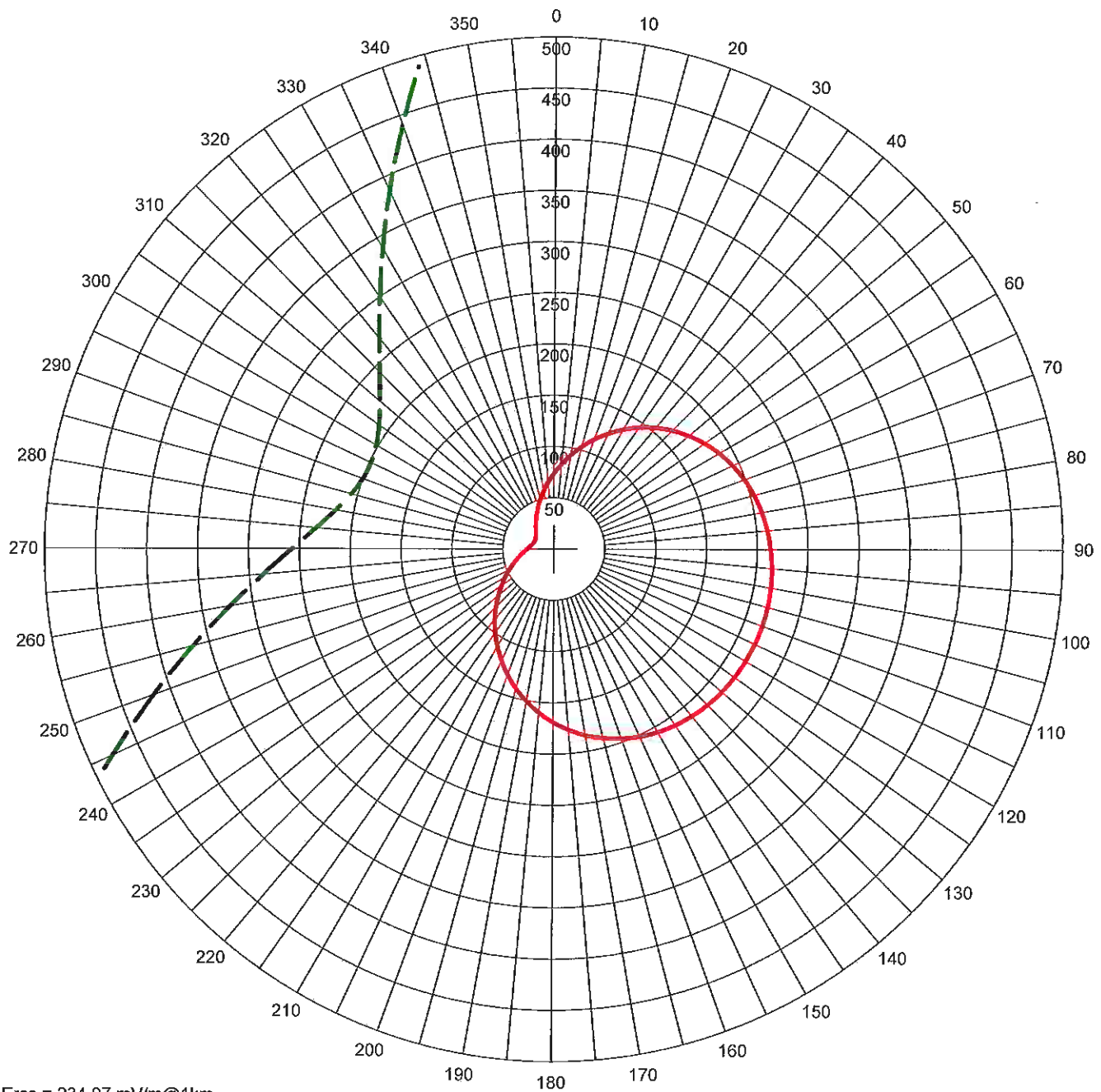
Standard Pattern at Theta = 45.00 Degrees

— Pattern (mV/m @ 1km)
 - - - Pattern X10

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Switch	TL Switch	A (deg)	B (deg)	C (deg)	D (deg)
1	0.500	87.0	0.0	0.0	82.0	0	0	0.0	0.0	0.0	0.0
2	1.000	0.0	93.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0
3	0.500	-87.0	186.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0

Call: WKDN
 Freq: 950 kHz
 PHILADELPHIA, PA, US
 Hours: N
 Lat: 39-58-28 N
 Lng: 075-16-19 W
 Power: 0.65 kW
 Theo RMS: 250.97 mV/m@1km
 @ 0.65 kW

WKDN AM Nighttime Directional Pattern - Exhibit #1111



Erss = 234.97 mV/m@1km
 Theo RMS: 250.972 mV/m@1km
 Std RMS: 263.73 mV/m@1km
 Q: 10.0 mV/m@1km

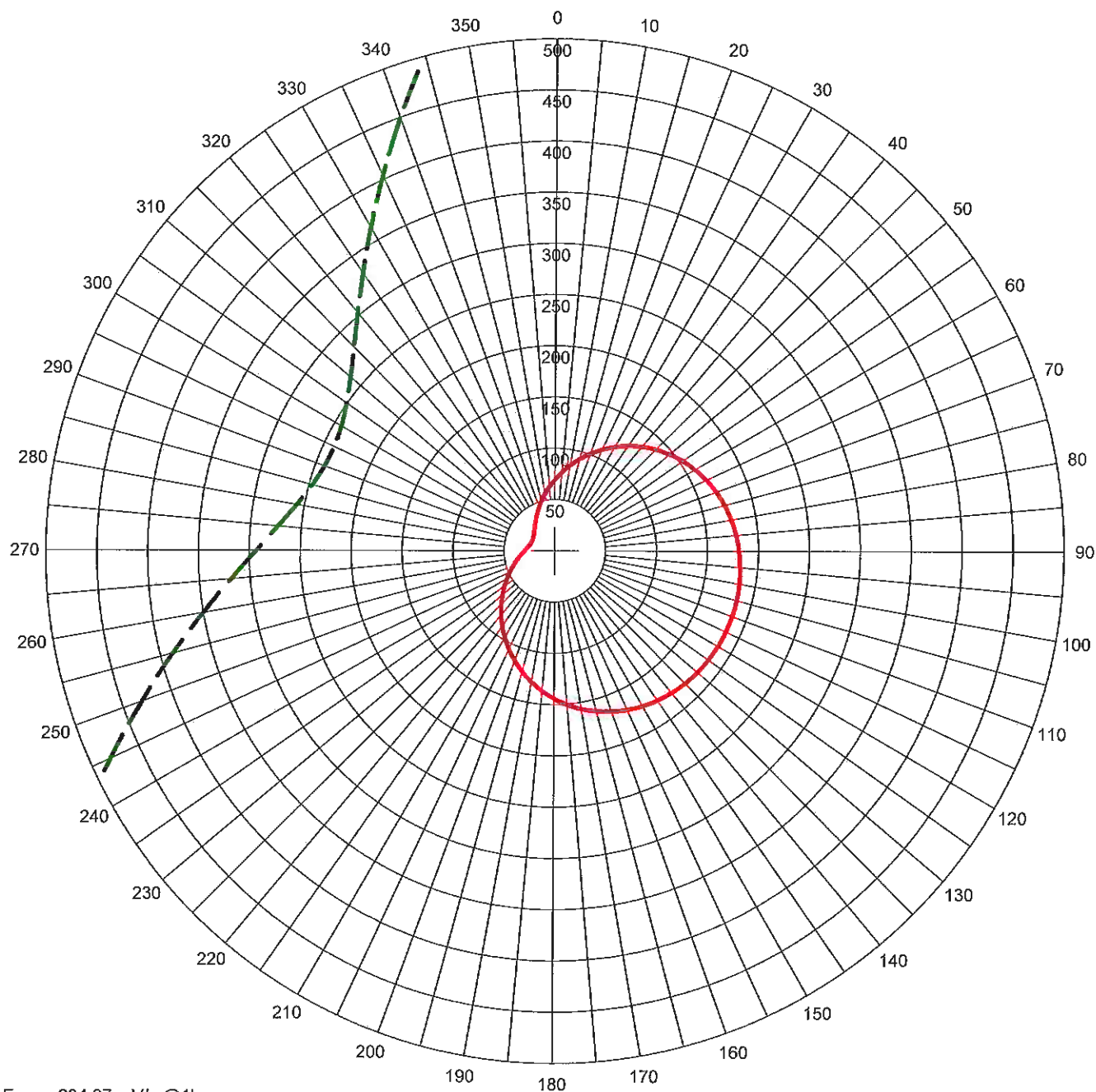
Standard Pattern at Theta = 50.00 Degrees

— Pattern (mV/m @ 1km)
 - - - Pattern X10

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Switch	TL Switch	A (deg)	B (deg)	C (deg)	D (deg)
1	0.500	87.0	0.0	0.0	82.0	0	0	0.0	0.0	0.0	0.0
2	1.000	0.0	93.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0
3	0.500	-87.0	186.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0

Call: WKDN
 Freq: 950 kHz
 PHILADELPHIA, PA, US
 Hours: N
 Lat: 39-58-28 N
 Lng: 075-16-19 W
 Power: 0.65 kW
 Theo RMS: 250.97 mV/m@1km
 @ 0.65 kW

WKDN AM Nighttime Directional Pattern - Exhibit #1112



Erss = 234.97 mV/m@1km
 Theo RMS: 250.972 mV/m@1km
 Std RMS: 263.73 mV/m@1km
 Q: 10.0 mV/m@1km

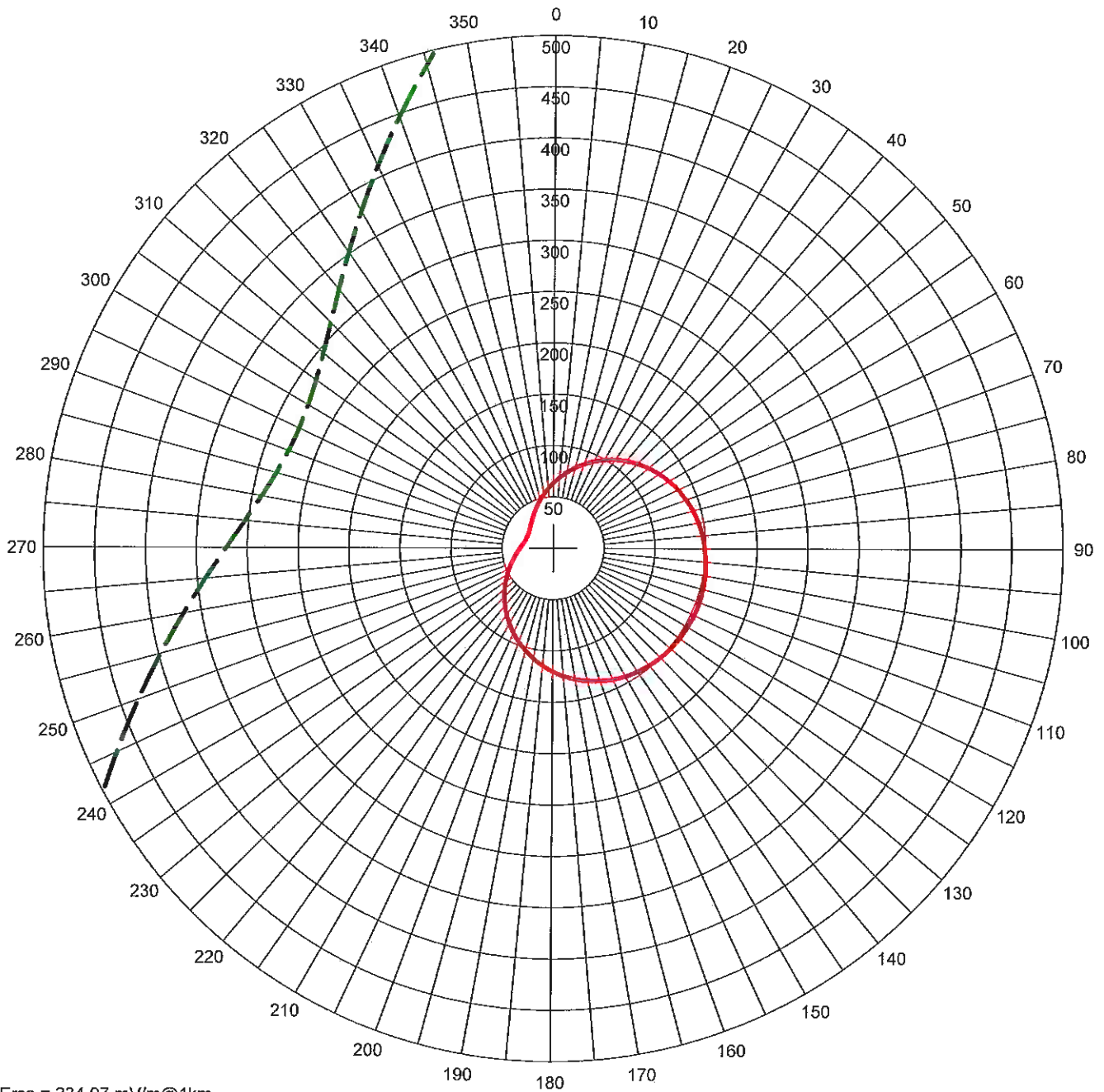
Standard Pattern at Theta = 55.00 Degrees

— Pattern (mV/m @ 1km)
 - - - Pattern X10

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Switch	TL Switch	A (deg)	B (deg)	C (deg)	D (deg)
1	0.500	87.0	0.0	0.0	82.0	0	0	0.0	0.0	0.0	0.0
2	1.000	0.0	93.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0
3	0.500	-87.0	186.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0

Call: WKDN
 Freq: 950 kHz
 PHILADELPHIA, PA, US
 Hours: N
 Lat: 39-58-28 N
 Lng: 075-16-19 W
 Power: 0.65 kW
 Theo RMS: 250.97 mV/m@1km
 @ 0.65 kW

WKDN AM Nighttime Directional Pattern - Exhibit #1113



Erss = 234.97 mV/m@1km
 Theo RMS: 250.972 mV/m@1km
 Std RMS: 263.73 mV/m@1km
 Q: 10.0 mV/m@1km

Standard Pattern at Theta = 60.00 Degrees

— Pattern (mV/m @ 1km)
 - - - Pattern X10

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Switch	TL Switch	A (deg)	B (deg)	C (deg)	D (deg)
1	0.500	87.0	0.0	0.0	82.0	0	0	0.0	0.0	0.0	0.0
2	1.000	0.0	93.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0
3	0.500	-87.0	186.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0

Call: WKDN
 Freq: 950 kHz
 PHILADELPHIA, PA, US
 Hours: N
 Lat: 39-58-28 N
 Lng: 075-16-19 W
 Power: 0.65 kW
 Theo RMS: 250.97 mV/m@1km
 @ 0.65 kW

MINOR CHANGE APPLICATION
FAMILY STATIONS, INC.
WKDN AM RADIO STATION
has: 950 kHz - 21.0/43.0 kW - DA2
req: 950 kHz - 0.65/43.0 kW - DA2
PHILADELPHIA, PENNSYLVANIA
October 2017

EXHIBIT #1J1

WKDN 950 kHz PHILADELPHIA, PA, US Hours: N Proposed
 North Latitude: 39° 58' 28"
 West Longitude: 75° 16' 19"
 Power: 0.65 kW Theo RMS: 250.97 mV/m @ 1km @ 0.65 kW

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Switch	TL Switch	A (deg)	B (deg)	C (deg)	D (deg)
1	0.500	87.0	0.0	0.0	82.0	0	0	0.0	0.0	0.0	0.0
2	1.000	0.0	93.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0
3	0.500	-87.0	186.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0

 Standard Horizontal Plane Pattern

Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)
0.0	87.04	5.0	109.62	10.0	134.61
15.0	161.46	20.0	189.48	25.0	217.93
30.0	246.03	35.0	273.00	40.0	298.16
45.0	320.95	50.0	340.95	55.0	357.92
60.0	371.79	65.0	382.66	70.0	390.76
75.0	396.41	80.0	400.02	85.0	402.04
90.0	402.89	95.0	402.99	100.0	402.70
105.0	402.30	110.0	402.00	115.0	401.92
120.0	402.10	125.0	402.46	130.0	402.85
135.0	403.02	140.0	402.66	145.0	401.40
150.0	398.79	155.0	394.41	160.0	387.83
165.0	378.66	170.0	366.61	175.0	351.51
180.0	333.31	185.0	312.15	190.0	288.35
195.0	262.39	200.0	234.88	205.0	206.55
210.0	178.18	215.0	150.54	220.0	124.36
225.0	100.27	230.0	78.77	235.0	60.18
240.0	44.68	245.0	32.34	250.0	23.07
255.0	16.74	260.0	13.02	265.0	11.29
270.0	10.69	275.0	10.53	280.0	10.50
285.0	10.50	290.0	10.50	295.0	10.50
300.0	10.50	305.0	10.50	310.0	10.51
315.0	10.56	320.0	10.84	325.0	11.80
330.0	14.23	335.0	18.93	340.0	26.42
345.0	36.90	350.0	50.50	355.0	67.25

MINOR CHANGE APPLICATION
FAMILY STATIONS, INC.
WKDN AM RADIO STATION
has: 950 kHz - 21.0/43.0 kW - DA2
req: 950 kHz - 0.65/43.0 kW - DA2
PHILADELPHIA, PENNSYLVANIA
October 2017

EXHIBIT #1J2

WKDN 950 kHz PHILADELPHIA, PA, US Hours: N Proposed
 North Latitude: 39° 58' 28"
 West Longitude: 75° 16' 19"
 Power: 0.65 kW Theo RMS: 250.97 mV/m @ 1km @ 0.65 kW

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swch	TL Swch	A (deg)	B (deg)	C (deg)	D (deg)
1	0.500	87.0	0.0	0.0	82.0	0	0	0.0	0.0	0.0	0.0
2	1.000	0.0	93.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0
3	0.500	-87.0	186.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0

Standard Pattern
 Calculated at 5.0 Degrees Elevation

Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)
0.0	86.99	5.0	109.41	10.0	134.19
15.0	160.80	20.0	188.57	25.0	216.77
30.0	244.61	35.0	271.35	40.0	296.30
45.0	318.91	50.0	338.77	55.0	355.64
60.0	369.46	65.0	380.30	70.0	388.40
75.0	394.08	80.0	397.75	85.0	399.82
90.0	400.74	95.0	400.90	100.0	400.65
105.0	400.29	110.0	400.01	115.0	399.94
120.0	400.10	125.0	400.44	130.0	400.78
135.0	400.90	140.0	400.49	145.0	399.16
150.0	396.50	155.0	392.08	160.0	385.47
165.0	376.31	170.0	364.30	175.0	349.26
180.0	331.18	185.0	310.18	190.0	286.57
195.0	260.83	200.0	233.57	205.0	205.49
210.0	177.37	215.0	149.98	220.0	124.02
225.0	100.13	230.0	78.78	235.0	60.31
240.0	44.89	245.0	32.58	250.0	23.30
255.0	16.92	260.0	13.13	265.0	11.32
270.0	10.66	275.0	10.48	280.0	10.45
285.0	10.45	290.0	10.44	295.0	10.44
300.0	10.45	305.0	10.45	310.0	10.46
315.0	10.52	320.0	10.84	325.0	11.86
330.0	14.36	335.0	19.14	340.0	26.65
345.0	37.13	350.0	50.68	355.0	67.34

MINOR CHANGE APPLICATION
FAMILY STATIONS, INC.
WKDN AM RADIO STATION
has: 950 kHz - 21.0/43.0 kW - DA2
req: 950 kHz - 0.65/43.0 kW - DA2
PHILADELPHIA, PENNSYLVANIA
October 2017

EXHIBIT #1J3

WKDN 950 kHz PHILADELPHIA, PA, US Hours: N Proposed
 North Latitude: 39° 58' 28"
 West Longitude: 75° 16' 19"
 Power: 0.65 kW Theo RMS: 250.97 mV/m @ 1km @ 0.65 kW

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swrch	TL Swrch	A (deg)	B (deg)	C (deg)	D (deg)
1	0.500	87.0	0.0	0.0	82.0	0	0	0.0	0.0	0.0	0.0
2	1.000	0.0	93.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0
3	0.500	-87.0	186.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0

Standard Pattern
 Calculated at 10.0 Degrees Elevation

Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)
0.0	86.84	5.0	108.75	10.0	132.92
15.0	158.84	20.0	185.87	25.0	213.31
30.0	240.41	35.0	266.45	40.0	290.78
45.0	312.86	50.0	332.31	55.0	348.88
60.0	362.51	65.0	373.28	70.0	381.39
75.0	387.16	80.0	390.96	85.0	393.21
90.0	394.30	95.0	394.63	100.0	394.53
105.0	394.27	110.0	394.06	115.0	394.01
120.0	394.13	125.0	394.38	130.0	394.60
135.0	394.57	140.0	393.98	145.0	392.47
150.0	389.65	155.0	385.11	160.0	378.45
165.0	369.30	170.0	357.41	175.0	342.60
180.0	324.87	185.0	304.33	190.0	281.29
195.0	256.20	200.0	229.66	205.0	202.34
210.0	174.97	215.0	148.30	220.0	123.01
225.0	99.69	230.0	78.81	235.0	60.68
240.0	45.50	245.0	33.29	250.0	24.00
255.0	17.48	260.0	13.46	265.0	11.42
270.0	10.61	275.0	10.35	280.0	10.29
285.0	10.28	290.0	10.28	295.0	10.28
300.0	10.28	305.0	10.29	310.0	10.31
315.0	10.42	320.0	10.83	325.0	12.05
330.0	14.80	335.0	19.77	340.0	27.37
345.0	37.82	350.0	51.21	355.0	67.59

MINOR CHANGE APPLICATION
FAMILY STATIONS, INC.
WKDN AM RADIO STATION
has: 950 kHz - 21.0/43.0 kW - DA2
req: 950 kHz - 0.65/43.0 kW - DA2
PHILADELPHIA, PENNSYLVANIA
October 2017

EXHIBIT #1J4

WKDN 950 kHz PHILADELPHIA, PA, US Hours: N Proposed
 North Latitude: 39° 58' 28"
 West Longitude: 75° 16' 19"
 Power: 0.65 kW Theo RMS: 250.97 mV/m @ 1km @ 0.65 kW

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Switch	TL Switch	A (deg)	B (deg)	C (deg)	D (deg)
1	0.500	87.0	0.0	0.0	82.0	0	0	0.0	0.0	0.0	0.0
2	1.000	0.0	93.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0
3	0.500	-87.0	186.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0

Standard Pattern
 Calculated at 15.0 Degrees Elevation

Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)
0.0	86.56	5.0	107.62	10.0	130.80
15.0	155.61	20.0	181.45	25.0	207.66
30.0	233.55	35.0	258.46	40.0	281.78
45.0	303.01	50.0	321.77	55.0	337.84
60.0	351.16	65.0	361.78	70.0	369.90
75.0	375.79	80.0	379.79	85.0	382.29
90.0	383.65	95.0	384.24	100.0	384.36
105.0	384.28	110.0	384.17	115.0	384.13
120.0	384.21	125.0	384.32	130.0	384.35
135.0	384.08	140.0	383.22	145.0	381.45
150.0	378.39	155.0	373.68	160.0	366.94
165.0	357.85	170.0	346.16	175.0	331.74
180.0	314.58	185.0	294.79	190.0	272.68
195.0	248.66	200.0	223.28	205.0	197.17
210.0	171.03	215.0	145.53	220.0	121.31
225.0	98.92	230.0	78.81	235.0	61.27
240.0	46.47	245.0	34.46	250.0	25.17
255.0	18.47	260.0	14.12	265.0	11.71
270.0	10.60	275.0	10.19	280.0	10.06
285.0	10.03	290.0	10.02	295.0	10.02
300.0	10.02	305.0	10.04	310.0	10.10
315.0	10.31	320.0	10.93	325.0	12.48
330.0	15.60	335.0	20.85	340.0	28.56
345.0	38.93	350.0	52.05	355.0	67.96

MINOR CHANGE APPLICATION
FAMILY STATIONS, INC.
WKDN AM RADIO STATION
has: 950 kHz - 21.0/43.0 kW - DA2
req: 950 kHz - 0.65/43.0 kW - DA2
PHILADELPHIA, PENNSYLVANIA
October 2017

EXHIBIT #1J5

WKDN 950 kHz PHILADELPHIA, PA, US Hours: N Proposed
 North Latitude: 39° 58' 28"
 West Longitude: 75° 16' 19"
 Power: 0.65 kW Theo RMS: 250.97 mV/m @ 1km @ 0.65 kW

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Switch	TL Switch	A (deg)	B (deg)	C (deg)	D (deg)
1	0.500	87.0	0.0	0.0	82.0	0	0	0.0	0.0	0.0	0.0
2	1.000	0.0	93.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0
3	0.500	-87.0	186.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0

Standard Pattern
 Calculated at 20.0 Degrees Elevation

Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)
0.0	86.08	5.0	106.01	10.0	127.85
15.0	151.16	20.0	175.39	25.0	199.97
30.0	224.25	35.0	247.65	40.0	269.60
45.0	289.66	50.0	307.49	55.0	322.87
60.0	335.73	65.0	346.12	70.0	354.20
75.0	360.21	80.0	364.45	85.0	367.24
90.0	368.94	95.0	369.84	100.0	370.24
105.0	370.37	110.0	370.38	115.0	370.38
120.0	370.38	125.0	370.34	130.0	370.13
135.0	369.56	140.0	368.37	145.0	366.28
150.0	362.94	155.0	358.04	160.0	351.24
165.0	342.26	170.0	330.89	175.0	317.02
180.0	300.64	185.0	281.89	190.0	261.02
195.0	238.43	200.0	214.61	205.0	190.14
210.0	165.62	215.0	141.69	220.0	118.91
225.0	97.79	230.0	78.72	235.0	61.99
240.0	47.74	245.0	36.04	250.0	26.82
255.0	19.95	260.0	15.23	265.0	12.34
270.0	10.81	275.0	10.11	280.0	9.83
285.0	9.73	290.0	9.70	295.0	9.69
300.0	9.71	305.0	9.76	310.0	9.91
315.0	10.32	320.0	11.29	325.0	13.30
330.0	16.88	335.0	22.43	340.0	30.22
345.0	40.42	350.0	53.14	355.0	68.39

MINOR CHANGE APPLICATION
FAMILY STATIONS, INC.
WKDN AM RADIO STATION
has: 950 kHz - 21.0/43.0 kW - DA2
req: 950 kHz - 0.65/43.0 kW - DA2
PHILADELPHIA, PENNSYLVANIA
October 2017

EXHIBIT #1J6

WKDN 950 kHz PHILADELPHIA, PA, US Hours: N Proposed
North Latitude: 39° 58' 28"
West Longitude: 75° 16' 19"
Power: 0.65 kW Theo RMS: 250.97 mV/m @ 1km @ 0.65 kW

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	0.500	87.0	0.0	0.0	82.0	0	0	0.0	0.0	0.0	0.0
2	1.000	0.0	93.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0
3	0.500	-87.0	186.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0

Standard Pattern
Calculated at 25.0 Degrees Elevation

Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)
0.0	85.33	5.0	103.86	10.0	124.06
15.0	145.55	20.0	167.85	25.0	190.44
30.0	212.78	35.0	234.33	40.0	254.62
45.0	273.25	50.0	289.91	55.0	304.41
60.0	316.67	65.0	326.72	70.0	334.69
75.0	340.77	80.0	345.22	85.0	348.32
90.0	350.36	95.0	351.61	100.0	352.31
105.0	352.66	110.0	352.81	115.0	352.84
120.0	352.77	125.0	352.55	130.0	352.08
135.0	351.19	140.0	349.66	145.0	347.23
150.0	343.62	155.0	338.55	160.0	331.74
165.0	322.96	170.0	312.03	175.0	298.88
180.0	283.50	185.0	266.02	190.0	246.69
195.0	225.84	200.0	203.91	205.0	181.40
210.0	158.86	215.0	136.83	220.0	115.80
225.0	96.23	230.0	78.46	235.0	62.75
240.0	49.24	245.0	37.98	250.0	28.92
255.0	21.95	260.0	16.90	265.0	13.51
270.0	11.46	275.0	10.35	280.0	9.80
285.0	9.54	290.0	9.44	295.0	9.42
300.0	9.47	305.0	9.62	310.0	9.97
315.0	10.70	320.0	12.15	325.0	14.69
330.0	18.71	335.0	24.50	340.0	32.28
345.0	42.21	350.0	54.37	355.0	68.77

MINOR CHANGE APPLICATION
FAMILY STATIONS, INC.
WKDN AM RADIO STATION
has: 950 kHz - 21.0/43.0 kW - DA2
req: 950 kHz - 0.65/43.0 kW - DA2
PHILADELPHIA, PENNSYLVANIA
October 2017

EXHIBIT #1J7

WKDN 950 kHz PHILADELPHIA, PA, US Hours: N Proposed
 North Latitude: 39° 58' 28"
 West Longitude: 75° 16' 19"
 Power: 0.65 kW Theo RMS: 250.97 mV/m @ 1km @ 0.65 kW

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swch	TL Swch	A (deg)	B (deg)	C (deg)	D (deg)
1	0.500	87.0	0.0	0.0	82.0	0	0	0.0	0.0	0.0	0.0
2	1.000	0.0	93.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0
3	0.500	-87.0	186.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0

Standard Pattern
 Calculated at 30.0 Degrees Elevation

Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)
0.0	84.22	5.0	101.12	10.0	119.44
15.0	138.86	20.0	158.96	25.0	179.31
30.0	199.44	35.0	218.91	40.0	237.30
45.0	254.27	50.0	269.56	55.0	283.00
60.0	294.50	65.0	304.08	70.0	311.83
75.0	317.90	80.0	322.51	85.0	325.87
90.0	328.22	95.0	329.79	100.0	330.78
105.0	331.36	110.0	331.64	115.0	331.70
120.0	331.56	125.0	331.17	130.0	330.44
135.0	329.24	140.0	327.39	145.0	324.66
150.0	320.83	155.0	315.66	160.0	308.94
165.0	300.47	170.0	290.13	175.0	277.85
180.0	263.66	185.0	247.67	190.0	230.10
195.0	211.23	200.0	191.45	205.0	171.17
210.0	150.87	215.0	130.99	220.0	111.96
225.0	94.17	230.0	77.92	235.0	63.42
240.0	50.82	245.0	40.16	250.0	31.41
255.0	24.47	260.0	19.20	265.0	15.40
270.0	12.84	275.0	11.23	280.0	10.30
285.0	9.80	290.0	9.57	295.0	9.52
300.0	9.63	305.0	9.96	310.0	10.61
315.0	11.78	320.0	13.73	325.0	16.75
330.0	21.12	335.0	27.03	340.0	34.68
345.0	44.19	350.0	55.63	355.0	69.00

MINOR CHANGE APPLICATION
FAMILY STATIONS, INC.
WKDN AM RADIO STATION
has: 950 kHz - 21.0/43.0 kW - DA2
req: 950 kHz - 0.65/43.0 kW - DA2
PHILADELPHIA, PENNSYLVANIA
October 2017

EXHIBIT #1J8

WKDN 950 kHz PHILADELPHIA, PA, US Hours: N Proposed
 North Latitude: 39° 58' 28"
 West Longitude: 75° 16' 19"
 Power: 0.65 kW Theo RMS: 250.97 mV/m @ 1km @ 0.65 kW

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swch	TL Swch	A (deg)	B (deg)	C (deg)	D (deg)
1	0.500	87.0	0.0	0.0	82.0	0	0	0.0	0.0	0.0	0.0
2	1.000	0.0	93.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0
3	0.500	-87.0	186.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0

Standard Pattern
 Calculated at 35.0 Degrees Elevation

Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)
0.0	82.64	5.0	97.74	10.0	114.01
15.0	131.18	20.0	148.91	25.0	166.84
30.0	184.59	35.0	201.80	40.0	218.12
45.0	233.27	50.0	247.02	55.0	259.23
60.0	269.82	65.0	278.78	70.0	286.18
75.0	292.13	80.0	296.79	85.0	300.32
90.0	302.91	95.0	304.75	100.0	305.98
105.0	306.76	110.0	307.16	115.0	307.25
120.0	307.04	125.0	306.50	130.0	305.55
135.0	304.09	140.0	301.98	145.0	299.03
150.0	295.07	155.0	289.92	160.0	283.40
165.0	275.39	170.0	265.78	175.0	254.54
180.0	241.70	185.0	227.36	190.0	211.72
195.0	195.01	200.0	177.54	205.0	159.67
210.0	141.77	215.0	124.22	220.0	107.38
225.0	91.54	230.0	76.98	235.0	63.87
240.0	52.34	245.0	42.44	250.0	34.15
255.0	27.40	260.0	22.08	265.0	18.03
270.0	15.09	275.0	13.06	280.0	11.74
285.0	10.94	290.0	10.54	295.0	10.45
300.0	10.66	305.0	11.21	310.0	12.19
315.0	13.78	320.0	16.15	325.0	19.51
330.0	24.04	335.0	29.92	340.0	37.28
345.0	46.21	350.0	56.76	355.0	68.93

MINOR CHANGE APPLICATION
FAMILY STATIONS, INC.
WKDN AM RADIO STATION
has: 950 kHz - 21.0/43.0 kW - DA2
req: 950 kHz - 0.65/43.0 kW - DA2
PHILADELPHIA, PENNSYLVANIA
October 2017

EXHIBIT #1J9

WKDN 950 kHz PHILADELPHIA, PA, US Hours: N Proposed
North Latitude: 39° 58' 28"
West Longitude: 75° 16' 19"
Power: 0.65 kW Theo RMS: 250.97 mV/m @ 1km @ 0.65 kW

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Switch	TL Switch	A (deg)	B (deg)	C (deg)	D (deg)
1	0.500	87.0	0.0	0.0	82.0	0	0	0.0	0.0	0.0	0.0
2	1.000	0.0	93.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0
3	0.500	-87.0	186.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0

Standard Pattern
Calculated at 40.0 Degrees Elevation

Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)
0.0	80.46	5.0	93.65	10.0	107.77
15.0	122.59	20.0	137.87	25.0	153.29
30.0	168.58	35.0	183.43	40.0	197.58
45.0	210.79	50.0	222.89	55.0	233.74
60.0	243.27	65.0	251.47	70.0	258.37
75.0	264.05	80.0	268.62	85.0	272.20
90.0	274.93	95.0	276.94	100.0	278.35
105.0	279.26	110.0	279.75	115.0	279.87
120.0	279.61	125.0	278.95	130.0	277.85
135.0	276.21	140.0	273.93	145.0	270.88
150.0	266.92	155.0	261.92	160.0	255.76
165.0	248.35	170.0	239.62	175.0	229.55
180.0	218.19	185.0	205.63	190.0	192.02
195.0	177.56	200.0	162.50	205.0	147.12
210.0	131.72	215.0	116.59	220.0	102.02
225.0	88.25	230.0	75.50	235.0	63.91
240.0	53.61	245.0	44.62	250.0	36.96
255.0	30.58	260.0	25.40	265.0	21.31
270.0	18.18	275.0	15.88	280.0	14.28
285.0	13.26	290.0	12.71	295.0	12.59
300.0	12.88	305.0	13.61	310.0	14.85
315.0	16.71	320.0	19.32	325.0	22.82
330.0	27.33	335.0	32.98	340.0	39.87
345.0	48.06	350.0	57.57	355.0	68.40

MINOR CHANGE APPLICATION
FAMILY STATIONS, INC.
WKDN AM RADIO STATION
has: 950 kHz - 21.0/43.0 kW - DA2
req: 950 kHz - 0.65/43.0 kW - DA2
PHILADELPHIA, PENNSYLVANIA
October 2017

EXHIBIT #1J10

WKDN 950 kHz PHILADELPHIA, PA, US Hours: N Proposed
 North Latitude: 39° 58' 28"
 West Longitude: 75° 16' 19"
 Power: 0.65 kW Theo RMS: 250.97 mV/m @ 1km @ 0.65 kW

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swrch	TL Swrch	A (deg)	B (deg)	C (deg)	D (deg)
1	0.500	87.0	0.0	0.0	82.0	0	0	0.0	0.0	0.0	0.0
2	1.000	0.0	93.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0
3	0.500	-87.0	186.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0

Standard Pattern
 Calculated at 45.0 Degrees Elevation

Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)
0.0	77.58	5.0	88.79	10.0	100.72
15.0	113.19	20.0	125.99	25.0	138.92
30.0	151.74	35.0	164.22	40.0	176.17
45.0	187.39	50.0	197.75	55.0	207.15
60.0	215.50	65.0	222.81	70.0	229.06
75.0	234.32	80.0	238.65	85.0	242.13
90.0	244.86	95.0	246.93	100.0	248.43
105.0	249.42	110.0	249.97	115.0	250.09
120.0	249.80	125.0	249.08	130.0	247.90
135.0	246.18	140.0	243.86	145.0	240.83
150.0	237.02	155.0	232.33	160.0	226.68
165.0	220.01	170.0	212.29	175.0	203.51
180.0	193.72	185.0	183.00	190.0	171.46
195.0	159.28	200.0	146.64	205.0	133.75
210.0	120.84	215.0	108.15	220.0	95.87
225.0	84.21	230.0	73.33	235.0	63.37
240.0	54.39	245.0	46.47	250.0	39.60
255.0	33.76	260.0	28.90	265.0	24.96
270.0	21.85	275.0	19.48	280.0	17.77
285.0	16.63	290.0	16.01	295.0	15.87
300.0	16.20	305.0	17.02	310.0	18.38
315.0	20.34	320.0	23.00	325.0	26.43
330.0	30.73	335.0	35.97	340.0	42.22
345.0	49.51	350.0	57.86	355.0	67.24

MINOR CHANGE APPLICATION
FAMILY STATIONS, INC.
WKDN AM RADIO STATION
has: 950 kHz - 21.0/43.0 kW - DA2
req: 950 kHz - 0.65/43.0 kW - DA2
PHILADELPHIA, PENNSYLVANIA
October 2017

EXHIBIT #1J11

WKDN 950 kHz PHILADELPHIA, PA, US Hours: N Proposed
 North Latitude: 39° 58' 28"
 West Longitude: 75° 16' 19"
 Power: 0.65 kW Theo RMS: 250.97 mV/m @ 1km @ 0.65 kW

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swch	TL Swch	A (deg)	B (deg)	C (deg)	D (deg)
1	0.500	87.0	0.0	0.0	82.0	0	0	0.0	0.0	0.0	0.0
2	1.000	0.0	93.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0
3	0.500	-87.0	186.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0

Standard Pattern
 Calculated at 50.0 Degrees Elevation

Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)
0.0	73.86	5.0	83.10	10.0	92.87
15.0	103.04	20.0	113.45	25.0	123.96
30.0	134.38	35.0	144.55	40.0	154.33
45.0	163.58	50.0	172.19	55.0	180.07
60.0	187.17	65.0	193.46	70.0	198.94
75.0	203.63	80.0	207.57	85.0	210.81
90.0	213.40	95.0	215.41	100.0	216.89
105.0	217.89	110.0	218.45	115.0	218.57
120.0	218.28	125.0	217.55	130.0	216.36
135.0	214.67	140.0	212.44	145.0	209.59
150.0	206.08	155.0	201.85	160.0	196.85
165.0	191.04	170.0	184.43	175.0	177.01
180.0	168.83	185.0	159.96	190.0	150.48
195.0	140.52	200.0	130.23	205.0	119.75
210.0	109.27	215.0	98.93	220.0	88.90
225.0	79.33	230.0	70.34	235.0	62.03
240.0	54.47	245.0	47.70	250.0	41.75
255.0	36.61	260.0	32.25	265.0	28.64
270.0	25.72	275.0	23.45	280.0	21.76
285.0	20.62	290.0	19.99	295.0	19.85
300.0	20.19	305.0	21.02	310.0	22.37
315.0	24.28	320.0	26.81	325.0	29.99
330.0	33.90	335.0	38.57	340.0	44.03
345.0	50.31	350.0	57.40	355.0	65.27

MINOR CHANGE APPLICATION
FAMILY STATIONS, INC.
WKDN AM RADIO STATION
has: 950 kHz - 21.0/43.0 kW - DA2
req: 950 kHz - 0.65/43.0 kW - DA2
PHILADELPHIA, PENNSYLVANIA
October 2017

EXHIBIT #1J12

WKDN 950 kHz PHILADELPHIA, PA, US Hours: N Proposed
North Latitude: 39° 58' 28"
West Longitude: 75° 16' 19"
Power: 0.65 kW Theo RMS: 250.97 mV/m @ 1km @ 0.65 kW

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swch	TL Swch	A (deg)	B (deg)	C (deg)	D (deg)
1	0.500	87.0	0.0	0.0	82.0	0	0	0.0	0.0	0.0	0.0
2	1.000	0.0	93.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0
3	0.500	-87.0	186.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0

Standard Pattern
Calculated at 55.0 Degrees Elevation

Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)
0.0	69.18	5.0	76.51	10.0	84.22
15.0	92.21	20.0	100.38	25.0	108.60
30.0	116.77	35.0	124.77	40.0	132.49
45.0	139.83	50.0	146.72	55.0	153.09
60.0	158.89	65.0	164.09	70.0	168.69
75.0	172.69	80.0	176.10	85.0	178.96
90.0	181.29	95.0	183.13	100.0	184.50
105.0	185.44	110.0	185.96	115.0	186.08
120.0	185.80	125.0	185.11	130.0	184.00
135.0	182.45	140.0	180.42	145.0	177.88
150.0	174.81	155.0	171.16	160.0	166.92
165.0	162.08	170.0	156.64	175.0	150.61
180.0	144.02	185.0	136.95	190.0	129.44
195.0	121.60	200.0	113.52	205.0	105.31
210.0	97.10	215.0	88.99	220.0	81.10
225.0	73.53	230.0	66.37	235.0	59.69
240.0	53.57	245.0	48.02	250.0	43.08
255.0	38.75	260.0	35.02	265.0	31.88
270.0	29.30	275.0	27.26	280.0	25.73
285.0	24.68	290.0	24.10	295.0	23.96
300.0	24.28	305.0	25.05	310.0	26.29
315.0	28.02	320.0	30.27	325.0	33.07
330.0	36.44	335.0	40.40	340.0	44.98
345.0	50.17	350.0	55.95	355.0	62.30

MINOR CHANGE APPLICATION
FAMILY STATIONS, INC.
WKDN AM RADIO STATION
has: 950 kHz - 21.0/43.0 kW - DA2
req: 950 kHz - 0.65/43.0 kW - DA2
PHILADELPHIA, PENNSYLVANIA
October 2017

EXHIBIT #1J13

WKDN 950 kHz PHILADELPHIA, PA, US Hours: N Proposed
 North Latitude: 39° 58' 28"
 West Longitude: 75° 16' 19"
 Power: 0.65 kW Theo RMS: 250.97 mV/m @ 1km @ 0.65 kW

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	0.500	87.0	0.0	0.0	82.0	0	0	0.0	0.0	0.0	0.0
2	1.000	0.0	93.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0
3	0.500	-87.0	186.0	114.0	82.0	0	0	0.0	0.0	0.0	0.0

Standard Pattern
 Calculated at 60.0 Degrees Elevation

Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)	Azimuth (Deg)	Field (mV/m @1km)
0.0	63.40	5.0	68.96	10.0	74.76
15.0	80.76	20.0	86.88	25.0	93.03
30.0	99.15	35.0	105.15	40.0	110.97
45.0	116.54	50.0	121.79	55.0	126.70
60.0	131.21	65.0	135.30	70.0	138.97
75.0	142.19	80.0	144.99	85.0	147.36
90.0	149.32	95.0	150.88	100.0	152.07
105.0	152.88	110.0	153.34	115.0	153.44
120.0	153.20	125.0	152.60	130.0	151.64
135.0	150.30	140.0	148.58	145.0	146.46
150.0	143.92	155.0	140.96	160.0	137.55
165.0	133.72	170.0	129.45	175.0	124.78
180.0	119.73	185.0	114.34	190.0	108.67
195.0	102.77	200.0	96.71	205.0	90.57
210.0	84.42	215.0	78.35	220.0	72.41
225.0	66.70	230.0	61.26	235.0	56.16
240.0	51.43	245.0	47.11	250.0	43.21
255.0	39.76	260.0	36.75	265.0	34.19
270.0	32.05	275.0	30.35	280.0	29.05
285.0	28.16	290.0	27.65	295.0	27.54
300.0	27.81	305.0	28.47	310.0	29.52
315.0	30.98	320.0	32.86	325.0	35.16
330.0	37.90	335.0	41.09	340.0	44.72
345.0	48.79	350.0	53.27	355.0	58.16



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EXHIBIT #1K
MINOR CHANGE APPLICATION
FAMILY STATIONS, INC.
WKDN AM RADIO STATION
has: 950 kHz - 21.0/43.0 kW - DA2
req: 950 kHz - 0.65/43.0 kW - DA2
PHILADELPHIA, PENNSYLVANIA
October 2017

NIGHTTIME 1000 mV/m

Google Earth

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1000 ft