

Highlands, North Carolina  
Application for Minor Modification of FM Translator W269AY  
On Channel 277  
by  
Western North Carolina Public Radio, Inc.

Exhibit 1  
Displacement Waiver Request

July 2015

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## Table of Contents

Description	Page
Declaration .....	2
Narrative .....	3
Allocations .....	3
Source of Data .....	3
Table 1: Co-channel Allocations .....	5
Table 2: Lower Third Adjacent Allocations .....	6
Table 3: Lower Second Adjacent Allocations .....	7
Table 4: Lower First Adjacent Allocations .....	8
Table 5: Upper First Adjacent Allocations .....	8
Table 6: Upper Second Adjacent Allocations .....	9
Table 7: Upper Third Adjacent Allocations .....	9
Table 8: IF Separation -54 Channels .....	10
Table 9: IF Separation -53 Channels .....	10

Declaration

I declare, under penalty of perjury, that I am a technical consultant to broadcasting and other communications systems, that I have over twenty-five years of experience in the engineering of broadcast and other communications systems, that I am familiar with the Federal Communications Commission's Rules found in the Code of Federal Regulations Title 47, that I am a Professional Engineer registered in North Carolina, that I have prepared or supervised the preparation of the attached Exhibit 1, Displacement Waiver Request, for Western North Carolina Public Radio, Inc., and that all of the facts therein, except for facts of which the Federal Communications Commission may take official notice, are true to the best of my knowledge and belief.



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28 July 2015

### Narrative

This Exhibit requests a waiver to permit a non-adjacent channel application to be processed as a minor modification. This application is being filed as a displacement application because construction of co-channel WGOG, Walhalla, South Carolina, prevents continuation of the present operation. The licensee of WGOG has informed Western North Carolina Public Radio, Inc. that it intends to commence operations on channel 269 on August 1, 2015.

There are no channels available within the range of co-channel plus or minus three adjacent channels, or intermediate frequency separations of 53 or 54 channels. This exhibit provides details on each of those channels. In all other aspects a minor modification is proposed for FM translator W269AY, Highlands, North Carolina.

### Allocations

Abbreviated allocation studies are provided for channels from the third channel below the licensed channel to three channels above the licensed channel, plus intermediate frequency channels 53 and 54 channels below the licensed channel. For each channel, sufficient listings are provided to show preclusion.

### Source of Data

Transmitter location, effective radiated power, directional antenna pattern, and elevation data are extracted from the Commission's CDBS. All contours for existing and proposed facilities are calculated using height above average terrain calculated at one degree horizontal increments. The contours were evaluated using terrain extracted from the NGDC 30

arcsecond terrain database, formatted by V-Soft Communications to match the database in use at the Commission.

Table 1: Co-channel Allocations

Allocations Study Western North Carolina Public Radio CH# 269D - 101.7 MHz, Pwr= 0.01 kw, HAAT= 358.2 M, COR= 1298 M Average Protected F(50-50)= 11.0 km Omni-directional											
REFERENCE										DISPLAY DATES	
35 02 21.0 N.										DATA 07-28-15	
83 13 04.0 W.										SEARCH 07-28-15	
CH	CALL	TYPE	ANT	AZI.	DIST	LAT.	Pwr(kw)	INT(km)	PRO(km)	*IN*	*OUT*
CITY		STATE		<--	FILE #	LNG.	HAAT(M)	COR(M)	LICENSEE	(Overlap	in km)
269A	WGOG	CP	CX	144.0	24.71	34 51 33.0	6.000	68.3	15.8	-56.9*	-41.6*
Walhalla			SC	324.1	BPH20120718ABS	83 03 30.0	92	497	Appalachian Broadcasting C		
One Step Application											
269D	W269AY!	LIC	CN	0.0	0.00	35 02 21.0	0.010	19.7	6.0	-25.6	-25.6
Highlands			NC	0.0	BLFT19970919TF	83 13 04.0	359	1298	Western North Carolina Pub		
Translator for WFQS, Franklin, NC											
267D	W267AD	APP	DC	341.5	33.71	35 19 38.0	0.119	0.8	25.0	21.3	6.6
Franklin			NC	161.4	BMPFT20150713ACD	83 20 09.0		1538	Tugart Properties, Llc		
267D	W267AD	CP	DC	341.5	33.72	35 19 38.1	0.119	0.8	24.9	21.3	6.6
Cherokee			NC	161.4	BPFT20140430AAO	83 20 09.2		1535	Tugart Properties, Llc		
267D	W267AD	APP	DC	341.5	33.71	35 19 38.0	0.100	0.7	23.9	21.3	7.5
Franklin			NC	161.4	BMPFT20150713ACD	83 20 09.0		1538	Tugart Properties, Llc		
269C3	WJSQ	LIC	NCN	295.9	124.90	35 31 19.0	7.500	100.6	38.2	12.6	48.2
Athens			TN	115.1	BLH19910813KB	84 27 29.0	161	466	Randall w. Sliger		

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Terrain database is FCC NGDC 30 Sec,

R= 73.215 qualifying spacings or FCC minimum spacings in KM, M= Margin in KM

In & Out distances between contours are shown at closest points. Reference Zone= East Zone, Co to 3rd adj.

All separation margins (if shown) include rounding. Call signs with exclamation marks need not be protected.

Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, \_= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)

"\*"affixed to 'IN' or 'OUT' values = site inside restricted contour.

**Table 2: Lower Third Adjacent Allocations**

Allocations Study Western North Carolina Public Radio CH# 266D - 101.1 MHz, Pwr= 0.01 kW, HAAT= 358.2 M, COR= 1298 M Average Protected F(50-50)= 11.0 km Omni-directional											
REFERENCE										DISPLAY DATES	
35 02 21.0 N.										DATA	07-28-15
83 13 04.0 W.										SEARCH	07-28-15
CH	CALL	TYPE	ANT	AZI.	DIST	LAT.	Pwr(kw)	INT(km)	PRO(km)	*IN*	*OUT*
CITY		STATE		<--	FILE #	LNG.	HAAT(M)	COR(M)	LICENSEE	(Overlap in km)	
266C1	WROQ	LIC	DCX	116.5	96.94	34 38 51.0	100.000	159.6	66.9	-74.7*	-14.8
Anderson			SC	297.0	BLH20080225ABJ	82 16 13.0	296	540	Entercom License, LLC		
267D	W267AD	APP	DC	341.5	33.71	35 19 38.0	0.119	44.6	25.0	-22.3*	-10.6
Franklin			NC	161.4	BMPFT20150713ACD	83 20 09.0		1538	Tugart Properties, LLC		
267D	W267AD	CP	DC	341.5	33.72	35 19 38.1	0.119	44.5	24.9	-22.2*	-10.5
Cherokee			NC	161.4	BPFT20140430AAO	83 20 09.2		1535	Tugart Properties, LLC		
267D	W267AD	APP	DC	341.5	33.71	35 19 38.0	0.100	42.8	23.9	-20.4*	-9.9
Franklin			NC	161.4	BMPFT20150713ACD	83 20 09.0		1538	Tugart Properties, LLC		
265D	W265AZ	CP	DC	341.5	33.72	35 19 38.1	0.119	39.8	22.9	-17.6*	-8.8
Franklin			NC	161.4	BPFT20150512ACF	83 20 09.1		1535	Toccoa Falls College		
269D	W269AY!	LIC	CN	0.0	0.00	35 02 21.0	0.010	0.2	6.0	-6.2	-6.2
Highlands			NC	0.0	BLFT19970919TF	83 13 04.0	359	1298	Western North Carolina Pub		
Translator for WFQS, Franklin, NC											
Licensed facility being modified, not a preclusion.											
269A	WGOG	CP	CX	144.0	24.71	34 51 33.0	6.000	1.6	15.8	9.8	8.8
walhalla			SC	324.1	BPH20120718ABS	83 03 30.0	92	497	Appalachian Broadcasting C		
One Step Application											

Terrain database is FCC NGDC 30 Sec,

R= 73.215 qualifying spacings or FCC minimum spacings in KM, M= Margin in KM

In & Out distances between contours are shown at closest points. Reference Zone= East Zone, Co to 3rd adjacent.

All separation margins (if shown) include rounding. Call signs with exclamation marks need not be protected.

Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, \_= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)

\*\*\*affixed to 'IN' or 'OUT' values = site inside restricted contour.

**Table 3: Lower Second Adjacent Allocations**

Allocations Study Western North Carolina Public Radio CH# 267D - 101.3 MHz, Pwr= 0.01 kw, HAAT= 358.2 M, COR= 1298 M Average Protected F(50-50)= 11.0 km Omni-directional											
DISPLAY DATES DATA 07-28-15 SEARCH 07-28-15											
REFERENCE	CH#	267D	-	101.3	MHz	Pwr=	0.01	kw	HAAT=	358.2	M
35 02 21.0 N.	83 13 04.0 W.										
CH	CALL	TYPE	ANT	AZI.	DIST	LAT.	Pwr(kw)	INT(km)	PRO(km)	*IN*	*OUT*
CITY		STATE		<--	FILE #	LNG.	HAAT(M)	COR(M)	LICENSEE	(Overlap in km)	
267D	W267AD	APP DC		341.5	33.71	35 19 38.0	0.119	86.3	25.0	-64.0*	-34.8*
Franklin		NC		161.4	BMPFT20150713ACD	83 20 09.0		1538	Tugart Properties, Llc		
267D	W267AD	CP DC		341.5	33.72	35 19 38.1	0.119	86.2	24.9	-63.8*	-34.7*
Cherokee		NC		161.4	BPFT20140430AAO	83 20 09.2		1535	Tugart Properties, Llc		
267D	W267AD	APP DC		341.5	33.71	35 19 38.0	0.100	84.0	23.9	-61.6*	-34.2*
Franklin		NC		161.4	BMPFT20150713ACD	83 20 09.0		1538	Tugart Properties, Llc		
269D	W269AY!	LIC CN		0.0	0.00	35 02 21.0	0.010	0.2	6.0	-6.2	-6.2
Highlands		NC		0.0	BLFT19970919TF	83 13 04.0	359	1298	Western North Carolina Pub		
Translator for WFQS, Franklin , NC											
Licensed facility being modified, not a preclusion.											
269A	WGOG	CP CX		144.0	24.71	34 51 33.0	6.000	1.6	15.8	9.8	8.8
Walhalla		SC		324.1	BPH20120718ABS	83 03 30.0	92	497	Appalachian Broadcasting C		
One Step Application											

Terrain database is FCC NGDC 30 Sec,  
 R= 73.215 qualifying spacings or FCC minimum spacings in KM, M= Margin in KM  
 In & Out distances between contours are shown at closest points. Reference Zone= East Zone, Co to 3rd adjacent.  
 All separation margins (if shown) include rounding. Call signs with exclamation marks need not be protected.  
 Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, \_= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)  
 "\*"affixed to 'IN' or 'OUT' values = site inside restricted contour.  
 < = Contour Overlap



**Table 4: Lower First Adjacent Allocations**

Allocations Study											
Western North Carolina Public Radio											
REFERENCE	CH# 268D - 101.5 MHz, Pwr= 0.01 kW, HAAT= 358.2 M,					COR= 1298 M			DISPLAY DATES		
35 02 21.0 N.	Average Protected F(50-50)= 11.0 km								DATA 07-28-15		
83 13 04.0 W.	Omni-directional								SEARCH 07-28-15		
CH CITY	CALL	TYPE	ANT STATE	AZI. <--	DIST FILE #	LAT. LNG.	Pwr(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
268C Johnson City	WQUT	LIC	CY TN	29.9 210.4	157.91 BMLH19980904KD	36 16 07.0 82 20 21.0	100.000 457	175.0 1069	71.6 Radio License Holding	-24.6*	60.4 cbc,
267D Franklin	W267AD	APP	DC NC	341.5 161.4	33.71 BMPFT20150713ACD	35 19 38.0 83 20 09.0	0.119	44.6 1538	25.0 Tugart Properties, LLC	-22.3*	-10.6
267D Cherokee	W267AD	CP	DC NC	341.5 161.4	33.72 BPFT20140430AAO	35 19 38.1 83 20 09.2	0.119	44.5 1535	24.9 Tugart Properties, LLC	-22.2*	-10.5
267D Franklin	W267AD	APP	DC NC	341.5 161.4	33.71 BMPFT20150713ACD	35 19 38.0 83 20 09.0	0.100	42.8 1538	23.9 Tugart Properties, LLC	-20.4*	-9.9
269D Highlands	W269AY!	LIC	CN NC	0.0 0.0	0.00 BLFT19970919TF	35 02 21.0 83 13 04.0	0.010 359	8.4 1298	6.0 Western North Carolina Pub	-14.3	-14.3
Translator for WFQS, Franklin, NC Licensed facility being modified, not a preclusion.											
269A Walhalla	WGOG	CP	CX SC	144.0 324.1	24.71 BPH20120718ABS	34 51 33.0 83 03 30.0	6.000 92	23.5 497	15.8 Appalachian Broadcasting C	-12.1	-12.3
One Step Application											

Terrain database is FCC NGDC 30 Sec,  
R= 73.215 qualifying spacings or FCC minimum spacings in KM, M= Margin in KM  
In & Out distances between contours are shown at closest points. Reference Zone= East Zone, Co to 3rd adjacent.  
All separation margins (if shown) include rounding. Call signs with exclamation marks need not be protected.  
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, \_= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)  
\*\*\*affixed to 'IN' or 'OUT' values = site inside restricted contour. < = Contour Overlap

**Table 5: Upper First Adjacent Allocations**

Allocations Study											
Western North Carolina Public Radio											
REFERENCE	CH# 270D - 101.9 MHz, Pwr= 0.01 kW, HAAT= 358.2 M,					COR= 1298 M			DISPLAY DATES		
35 02 21.0 N.	Average Protected F(50-50)= 11.0 km								DATA 07-28-15		
83 13 04.0 W.	Omni-directional								SEARCH 07-28-15		
CH CITY	CALL	TYPE	ANT STATE	AZI. <--	DIST FILE #	LAT. LNG.	Pwr(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
269D Highlands	W269AY!	LIC	CN NC	0.0 0.0	0.00 BLFT19970919TF	35 02 21.0 83 13 04.0	0.010 359	8.4 1298	6.0 Western North Carolina Pub	-14.3	-14.3
Translator for WFQS, Franklin, NC Licensed facility being modified, not a preclusion.											
269A Walhalla	WGOG	CP	CX SC	144.0 324.1	24.71 BPH20120718ABS	34 51 33.0 83 03 30.0	6.000 92	23.5 497	15.8 Appalachian Broadcasting C	-12.1	-12.3
One Step Application											
273C1 Hendersonville	WMYI	LIC	NC NC	78.6 259.0	56.62 BLH20110929AKK	35 08 15.6 82 36 30.6	44.000 416	6.9 1079	58.0 Capstar Tx LLC	39.0	-1.6*

Terrain database is FCC NGDC 30 Sec,  
R= 73.215 qualifying spacings or FCC minimum spacings in KM, M= Margin in KM  
In & Out distances between contours are shown at closest points. Reference Zone= East Zone, Co to 3rd adjacent.  
All separation margins (if shown) include rounding. Call signs with exclamation marks need not be protected.  
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, \_= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)  
\*\*\*affixed to 'IN' or 'OUT' values = site inside restricted contour.

**Table 6: Upper Second Adjacent Allocations**

Allocations Study											
Western North Carolina Public Radio											
REFERENCE	CH# 271D - 102.1 MHz, Pwr= 0.01 kW, HAAT= 358.2 M, COR= 1298 M							DISPLAY DATES			
35 02 21.0 N.	Average Protected F(50-50)= 11.0 km							DATA 07-28-15			
83 13 04.0 W.	Omni-directional							SEARCH 07-28-15			
CH	CALL	TYPE	ANT	AZI.	DIST	LAT.	Pwr(kw)	INT(km)	PRO(km)	*IN*	*OUT*
CITY		STATE		<--	FILE #	LNG.	HAAT(M)	COR(M)	LICENSEE	(Overlap in km)	
271C1	WWST	LIC	CN	334.7	94.96	35 48 41.0	15.000	138.9	59.1	-56.0*	-6.2
Sevierville			TN	154.4	BLH19860519KF	83 40 08.0	603	981	Journal Broadcast Corporat		
271D	W271AJ	LIC	C	150.5	42.17	34 42 31.0	0.027	14.1	4.2	14.9	-12.1*
Seneca			SC	330.6	BLFT20070308AGA	82 59 24.0	68	327	Ted A Mccall		
269D	W269AY!	LIC	CN	0.0	0.00	35 02 21.0	0.010	0.2	6.0	-6.2	-6.2
Highlands			NC	0.0	BLFT19970919TF	83 13 04.0	359	1298	Western North Carolina Pub		
Translator for WFQS, Franklin , NC											
Licensed facility being modified, not a preclusion.											
273C1	WMYI	LIC	NC	78.6	56.62	35 08 15.6	44.000	6.9	58.0	39.0	-1.6*
Hendersonville			NC	259.0	BLH20110929AKK	82 36 30.6	416	1079	Capstar Tx Llc		
269A	WGOG	CP	CX	144.0	24.71	34 51 33.0	6.000	1.6	15.8	9.8	8.8
Walhalla			SC	324.1	BPH20120718ABS	83 03 30.0	92	497	Appalachian Broadcasting C		
One Step Application											

Terrain database is FCC NGDC 30 Sec,  
R= 73.215 qualifying spacings or FCC minimum spacings in KM, M= Margin in KM  
In & Out distances between contours are shown at closest points. Reference Zone= East Zone, Co to 3rd adjacent.  
All separation margins (if shown) include rounding. Call signs with exclamation marks need not be protected.  
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, \_= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)  
"\*\*\*"affixed to 'IN' or 'OUT' values = site inside restricted contour.  
< = Contour Overlap

**Table 7: Upper Third Adjacent Allocations**

Allocations Study											
Western North Carolina Public Radio											
REFERENCE	CH# 272D - 102.3 MHz, Pwr= 0.01 kW, HAAT= 358.2 M, COR= 1298 M							DISPLAY DATES			
35 02 21.0 N.	Average Protected F(50-50)= 11.0 km							DATA 07-28-15			
83 13 04.0 W.	Omni-directional							SEARCH 07-28-15			
CH	CALL	TYPE	ANT	AZI.	DIST	LAT.	Pwr(kw)	INT(km)	PRO(km)	*IN*	*OUT*
CITY		STATE		<--	FILE #	LNG.	HAAT(M)	COR(M)	LICENSEE	(Overlap in km)	
273C1	WMYI	LIC	NC	78.6	56.62	35 08 15.6	44.000	85.6	58.0	-40.7*	-15.5*
Hendersonville			NC	259.0	BLH20110929AKK	82 36 30.6	416	1079	Capstar Tx Llc		
269D	W269AY!	LIC	CN	0.0	0.00	35 02 21.0	0.010	0.2	6.0	-6.2	-6.2
Highlands			NC	0.0	BLFT19970919TF	83 13 04.0	359	1298	Western North Carolina Pub		
Translator for WFQS, Franklin , NC											
Licensed facility being modified, not a preclusion.											
271C1	WWST	LIC	CN	334.7	94.96	35 48 41.0	15.000	86.7	59.1	-3.8	18.0
Sevierville			TN	154.4	BLH19860519KF	83 40 08.0	603	981	Journal Broadcast Corporat		
269A	WGOG	CP	CX	144.0	24.71	34 51 33.0	6.000	1.6	15.8	9.8	8.8
Walhalla			SC	324.1	BPH20120718ABS	83 03 30.0	92	497	Appalachian Broadcasting C		
One Step Application											

Terrain database is FCC NGDC 30 Sec,  
R= 73.215 qualifying spacings or FCC minimum spacings in KM, M= Margin in KM  
In & Out distances between contours are shown at closest points. Reference Zone= East Zone, Co to 3rd adjacent.  
All separation margins (if shown) include rounding. Call signs with exclamation marks need not be protected.  
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, \_= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)  
"\*\*\*"affixed to 'IN' or 'OUT' values = site inside restricted contour.  
< = Contour Overlap

**Table 8: IF Separation -54 Channels**

Allocations Study											
Western North Carolina Public Radio											
REFERENCE	CH# 215D - 90.9 MHz, Pwr= 0.01 kW, HAAT= 358.2 M,					COR= 1298 M		DISPLAY DATES			
35 02 21.0 N.	Average Protected F(50-50)= 11.0 km							DATA 07-28-15			
83 13 04.0 W.	Omni-directional							SEARCH 07-28-15			
CH CITY	CALL	TYPE	ANT STATE	AZI. <--	DIST FILE #	LAT. LNG.	Pwr(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
215C1 WRAF Toccoa Falls		LIC DCX		195.4	50.64	34 35 57.0	100.000	152.6	56.8	-121.5*	-56.2*
			GA	15.3	BLED20090529AEI	83 21 55.0	172	513	Toccoa Falls College		
217C3 WFQS Franklin		LIC DEN		294.4	36.31	35 10 24.0	0.265	1.0	37.5	23.5	-1.4*
			NC	114.2	BLED19890119KF	83 34 52.0	702	1681	western North Carolina Pub		
06NT W06AN Sapphire valley,etc		LI DHN		63.3	22.96	35 07 54.0	0.163	2.4	20.7	23.1R	-0.17M
			NC	243.4	BLTTV19820218ID	82 59 33.0	937	1465			

Terrain database is FCC NGDC 30 Sec,

R= 73.215 qualifying spacings or FCC minimum spacings in KM, M= Margin in KM

In & Out distances between contours are shown at closest points. Reference Zone= East Zone, Co to 3rd adjacent.

All separation margins (if shown) include rounding. Call signs with exclamation marks need not be protected.

Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, \_= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)

""affixed to 'IN' or 'OUT' values = site inside restricted contour.

**Table 9: IF Separation -53 Channels**

Allocations Study											
Western North Carolina Public Radio											
REFERENCE	CH# 216D - 91.1 MHz, Pwr= 0.01 kW, HAAT= 358.2 M,					COR= 1298 M		DISPLAY DATES			
35 02 21.0 N.	Average Protected F(50-50)= 11.0 km							DATA 07-28-15			
83 13 04.0 W.	Omni-directional							SEARCH 07-28-15			
CH CITY	CALL	TYPE	ANT STATE	AZI. <--	DIST FILE #	LAT. LNG.	Pwr(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
215C1 WRAF Toccoa Falls		LIC DCX		195.4	50.64	34 35 57.0	100.000	86.3	56.8	-54.8*	-27.4*
			GA	15.3	BLED20090529AEI	83 21 55.0	172	513	Toccoa Falls College		
217C3 WFQS Franklin		LIC DEN		294.4	36.31	35 10 24.0	0.265	56.5	37.5	-34.5*	-17.0*
			NC	114.2	BLED19890119KF	83 34 52.0	702	1681	western North Carolina Pub		
216C1 WYFG Gaffney		LIC DCX		85.9	131.55	35 06 57.0	100.000	153.2	59.8	-32.5*	33.8
			SC	266.7	BLED20101013AAJ	81 46 42.0	204	448	Bible Broadcasting Network		
06NT W06AN Sapphire valley,etc		LI DHN		63.3	22.96	35 07 54.0	0.163	2.0	20.7	22.7R	0.26M
			NC	243.4	BLTTV19820218ID	82 59 33.0	937	1465			

Terrain database is FCC NGDC 30 Sec,

R= 73.215 qualifying spacings or FCC minimum spacings in KM, M= Margin in KM

In & Out distances between contours are shown at closest points. Reference Zone= East Zone, Co to 3rd adjacent.

All separation margins (if shown) include rounding. Call signs with exclamation marks need not be protected.

Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, \_= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)

""affixed to 'IN' or 'OUT' values = site inside restricted contour.