

**MURRAY COMMUNICATIONS
BRISTOL, TN CH 234 APPLICATION
BNPFT-20030317MRL
SHORT FORM MINOR AMENDMENTS**

This is a unilateral short form amendment by Murray Communications for its application BNPFT-20030317MRL at Bristol, TN eliminating the conflict with Wake Forest University application BNPFT-20030317FRQ by changing the channel to 287 (+53). This releases the Murray application from that mutually exclusive group.

There is no settlement agreement.

Other amendments include site, height, antenna and primary station (WRZK at Kingsport, TN (facility ID #47076).

An LPFM preclusion study is included as E1 demonstrating that the amended application will not conflict with any LPFM channel point in the Johnson City-Kingsport-Bristol, TN 30X30 grid.

Allocation discussion:

All exhibits utilize the FCC 30 second terrain database.

- E1 Channel study
- E1A Interference plot to Holston Valley amended application
BNPFT-20030317LHO
- E1B Aerial photograph of interference area
- E2 60 dBu contours
- E3 ASR-NADCON-Antenna vertical elevation tabulation

A channel study is included as E1 demonstrating compliance with §74.1204 with the exception of 2nd adjacent channel translator application BNPFT-20030317LHO on channel 289 at Bristol, TN as recently amended. A plot of the proposed 60 dBu contour is provided as E2 showing that it is entirely contained within primary station WRZK's 60 dBu and that it overlaps the short form 60 dBu.

The amended Holston Valley 289D APP does not cause any interference to this application. However, the proposed facility will be located inside the protected contour of Holston Valley's 2nd adjacent channel application BNPFT-20030317LHO. Since co-pending translator applications may not cause interference to each other, an interference

analysis has been conducted based on the U/D ratio of +40 dB at the proposed site. The Holston Valley 289D APP (50:50) contour at the proposed site is 71.62 dBu and the (50:10) interference contour is 111.62 dBu at a distance of 291 meters. That yields a depression angle of 17 degrees reducing the ERP to 0.136 kW and the interference contour to 214.7 meters based on the PSI FML-2 0.75 wavelength spaced antenna's F factor of 0.738. This contour has been further evaluated at every five degrees of depression angle from 17 through 90 degrees using the vertical elevation pattern to determine the vertical clearance from the contour to ground.

Depression Angle (Deg.)	F	ERP X F² kW	Int. = 111.62 dBu meters	Vertical Clearance AGL (m) (Int X sin Ang – 89 m)
17	0.738	0.136	214.7	26.2
20	0.650	0.1056	189.2	24.3
25	0.493	0.061	143.8	28.2
30	0.331	0.0274	96.4	40.8
35	0.178	0.008	52.1	59.1
40	0.043	0.0005	13.0	80.6
45	0.068	0.0012	20.2	74.7
50	0.149	0.006	45.1	54.5
55	0.202	0.0105	59.6	40.2
60	0.227	0.015	71.3	27.3
65	0.226	0.013	66.4	28.8
70	0.205	0.0105	59.6	33.0
75	0.168	0.007	48.7	42.0
80	0.118	0.0035	34.4	55.1
85	0.061	0.0009	17.5	71.6
90	0.001	0.000	00.0	89.0

Based on the fact that the interference contour clears ground level by at least 24.3 meters and the fact that there are no buildings within the contour greater than two stories (6 meters) (see E1B showing only single and two story dwellings) as confirmed by a careful examination of the aerial photograph in exhibit E1B and Google Earth, it is clear that the interference contour will not reach any populated area or major highways. Based on this showing, a waiver of Section 74.1204 is requested in accordance with *Living Way Ministries, Inc.* (FCC 08-242).

HAAT and 60 dBu:

N. Lat. = 36-35-45 W. Lng. = 82-09-42


HAAT and Distance to Contour,
FCC, FM 2-10 Miles, 51 points Method - FCC 30 SEC

Azi.	AV EL	HAAT	dBk	60-F5
000	623.6	14.4	-6.02	7.09
030	608.1	29.9	-6.02	7.09
060	604.0	34.0	-6.02	7.49
090	556.3	81.7	-6.02	11.68
120	549.2	88.8	-6.02	12.15
150	541.7	96.3	-6.02	12.63
180	511.1	126.9	-6.02	14.46
210	487.2	150.8	-6.02	15.95
240	515.1	122.9	-6.02	14.23
270	571.6	66.4	-6.02	10.64
300	582.2	55.8	-6.02	9.83
330	583.1	54.9	-6.02	9.75

Ave El= 561.10 M HAAT= 76.90 M AMSL= 638 M

RF Exposure Calculation:

The proposed facility will utilize a PSI two bay 0.75 wavelength spaced circularly polarized antenna with a center of radiation at 89 meters AGL on existing tower ASR#1053535. The RF contribution of the proposed translator was calculated using FMMODEL assuming a worst case ring-stub design to be 0.65 μ Watts/cm² or 0.33% of the maximum permissible 200 microwatts/cm² exposure for general population/uncontrolled exposure, and well below the 5% of that limit which requires consideration. The proposed translator clearly complies with Commission RF radiation limits.



Charles M. Anderson, June 5, 2013

E1 CHANNEL STUDY

REFERENCE
36 35 45.0 N.
82 09 42.0 W.

CH# 287D - 105.3 MHz, Pwr= 0.25 kW, HAAT= 77 M, COR= 638 M
Average Protected F(50-50)= 11.4 km
Omni-directional

DISPLAY DATES
DATA 06-05-13
SEARCH 06-05-13

CH CITY	CALL	TYPE STATE	ANT AZI <--	DIST FILE #	LAT LNG	PWR(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
289D Bristol	640416	APP DC_ TN	173.3 353.3	18.37 BNPFT20030317LHO	36 25 53.0 82 08 15.0	0.250 78	1.1 639	37.5 Holston Valley Broadcastin	3.2	-20.2*(1)
287C1 Gaffney	WOSF	LIC _CX SC	147.1 327.6	162.49 BLH20100429ADK	35 21 51.0 81 11 13.0	51.000 395	168.2 644	73.0 Gaffney Broadcasting, Inco	-18.5*	45.2
234D Bristol	651494	APP _C_ TN	251.7 71.7	3.28 BNPFT20030317MRL	36 35 11.6 82 11 47.5	0.250 85	0.0 633	0.0 Murray Communications	9.5R	-6.2M
285A Kingsport	WKOS	LIC DCN TN	259.8 79.6	26.22 BLH19940401KA	36 33 14.0 82 27 00.0	2.750 150	2.1 617	21.1 Radio License Holding Cbc,	10.5	2.9
290D Blountville	651935	APP _C_ TN	243.8 63.6	33.46 BNPFT20030317MNV	36 27 46.0 82 29 49.0	0.250 45	1.1 509	7.7 Murray Communications	16.8	22.5
289D Johnson City	651081	APP _C_ TN	208.1 28.0	34.19 BNPFT20030317LOA	36 19 27.0 82 20 30.0	0.055 61	0.5 613	10.3 Jill Short	17.5	22.5
288A Pennington Gap	WSWV-FM	LIC NCX VA	281.3 100.8	80.24 BLH20100601AHK	36 44 02.0 83 02 34.0	6.000 84	51.1 659	27.7 B C Broadcasting Company,	19.2	32.5
288A Richlands	WGTH-FM	LIC _CN VA	29.1 209.4	71.26 BLH19791119AE	37 09 20.0 81 46 11.0	0.450 244	39.4 977	25.7 High Knob Broadcasters, In	24.2	34.5
287A Prestonsburg	WKKZ-FM	LIC _C_ KY	335.7 155.4	129.40 BLH19990823KD	37 39 24.0 82 45 58.0	4.700 113	83.8 396	27.6 Adam D. Gearheart	35.9	68.3
286D Marion	W286BN	LIC _C_ VA	58.2 238.6	64.80 BLFT20070613AAW	36 54 04.0 81 32 35.0	0.010 403	17.4 1157	11.3 Liberty University, Inc.	37.8	41.7
285D Boone	W285DG	LIC DCN NC	134.3 314.6	57.18 BLFT19960910TO	36 14 08.0 81 42 21.0	0.250 425	0.2 1464	12.4 Radio License Holding Cbc,	44.2	42.4
284D Wise	W284BB	LIC DC_ VA	309.4 129.1	53.07 BMLFT20071025ABJ	36 53 51.0 82 37 22.0	0.010 554	0.0 1289	0.9 Positive Alternative Radio	42.5	47.8

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
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 protected contour.
Reference station has protected zone issue:

(1) See Technical Report and E1A and E1B for disproval of interference
caused to Holston Valley application BNPFT-20030317LHO as amended.

NEW 287D

Latitude: 36-35-45 N
Longitude: 082-09-42 W
ERP: 0.136 kW
Channel: 287
Frequency: 105.3 MHz
AMSL Height: 638.0 m
Elevation: 549.0 m
Horiz. Pattern: Omni

BNPFT-20030317LHO

Latitude: 36-25-53 N
Longitude: 082-08-15 W
ERP: 0.25 kW
Channel: 289
Frequency: 105.7 MHz
AMSL Height: 1326.0 m
Elevation: 1272.0 m
Horiz. Pattern: Directional

PROPOSED 111.62 DBU BASED
ON REDUCED ERP OF 0.136 KW.
SEE TECHNICAL REPORT
FOR DISPROVAL OF INTERFERENCE.

E1A

HOLSTON VALLEY
289D - BNPFT-20030317LHO
AS AMENDED - 71.62 DBU

Scale 1:5,000

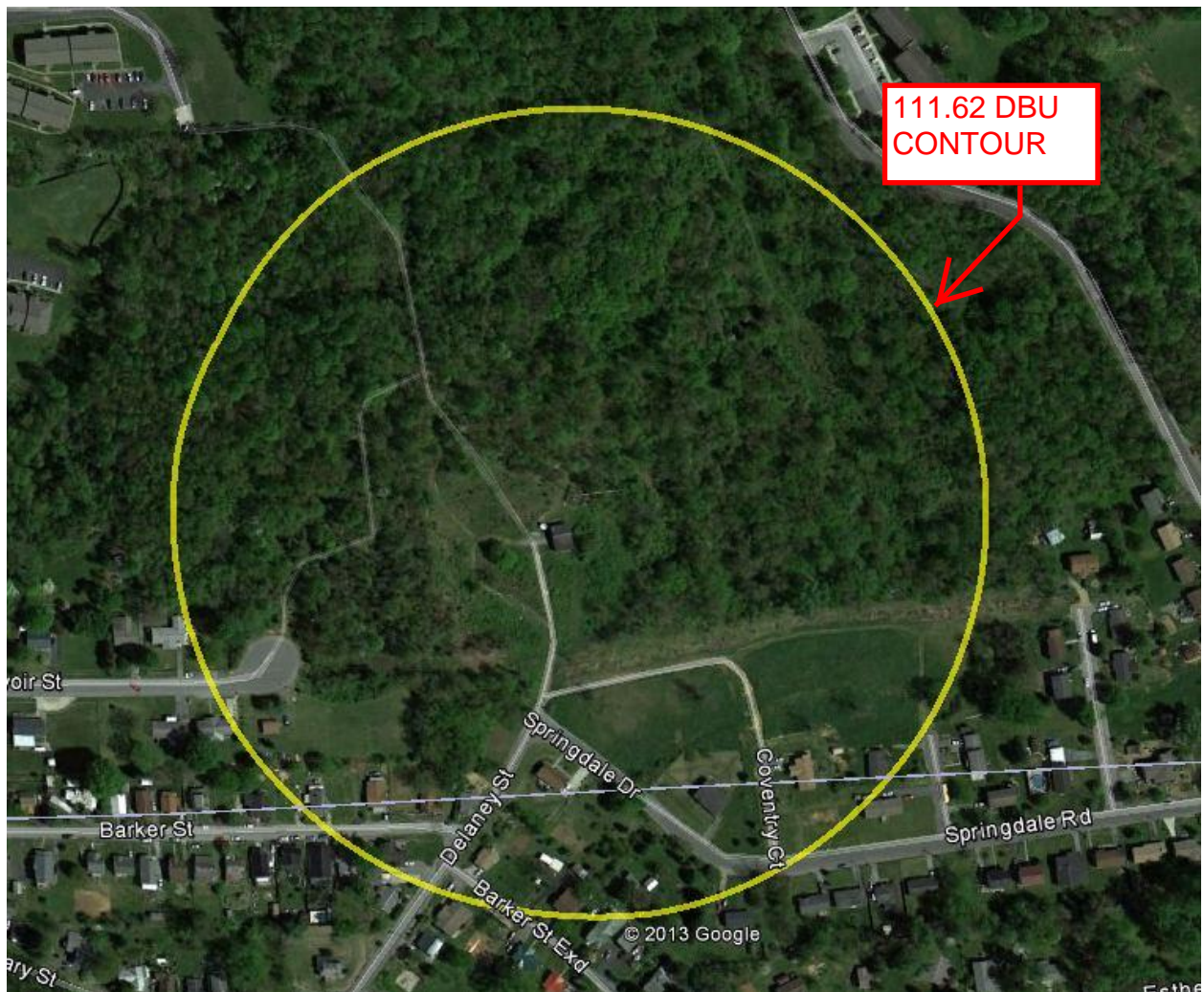
0 0.07 0.13 0.2 km

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EXHIBIT E1B

AERIAL VIEW OF THE 111.62 (50:10) DBU INTERFERENCE CONTOUR WHICH CLEARS THE GROUND BY AT LEAST 24.3 METERS (SEE TECHNICAL REPORT FOR VERTICAL ANALYSIS) AND THEREFORE DOES NOT REACH ANY POPULATED AREA OR MAJOR HIGHWAY. THE TALLEST BUILDING IS A TWO STORY RESIDENCE (6 METERS).



NEW 287D

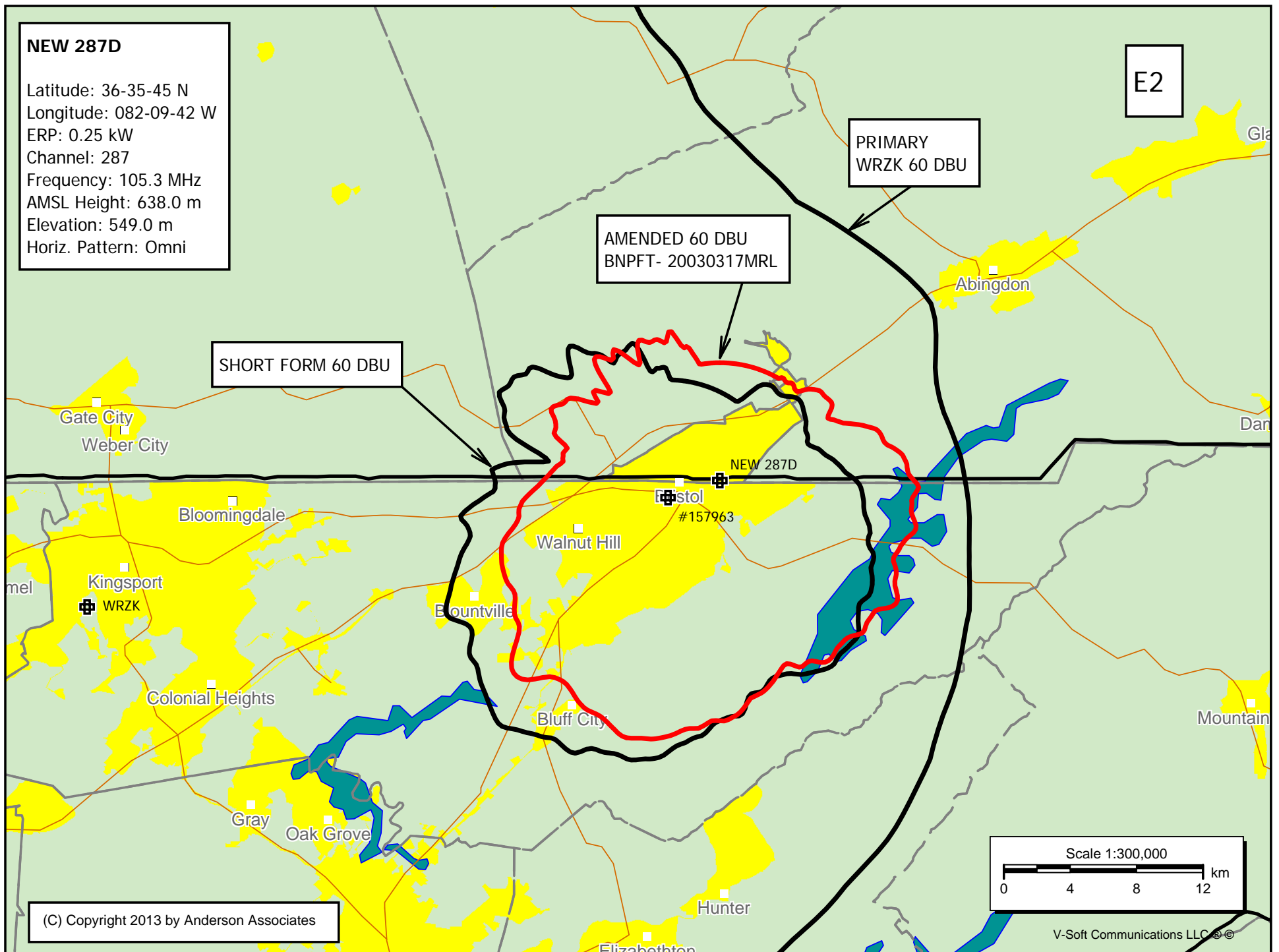
Latitude: 36-35-45 N
Longitude: 082-09-42 W
ERP: 0.25 kW
Channel: 287
Frequency: 105.3 MHz
AMSL Height: 638.0 m
Elevation: 549.0 m
Horiz. Pattern: Omni

E2

PRIMARY
WRZK 60 DBU

AMENDED 60 DBU
BNPFT- 20030317MRL

SHORT FORM 60 DBU



E3 Registration 1053535

 [Map Registration](#)

Registration Detail

Reg Number	1053535	Status	Constructed
File Number	A0062973	Constructed	03/01/1953
EMI	No	Dismantled	
NEPA	No		

Antenna Structure

Structure Type TOWER - Free standing or Guyed Structure used for Commu

Location (in NAD83 Coordinates)

Lat/Long	36-35-45.0 N 082-09-41.0 W	Address	288 DELANEY STREET
City, State	BRISTOL , VA		
Zip	24201	County	BRISTOL CITY
Center of AM Array		Position of Tower in Array	

Heights (meters)

Elevation of Site Above Mean Sea Level	Overall Height Above Ground (AGL)
548.6	92.8
Overall Height Above Mean Sea Level	Overall Height Above Ground w/o Appurtenances
641.4	91.6

Painting and Lightings Specifications

FAA Chapters 3, 4, 5, 13

Paint and Light in Accordance with FAA Circular Number 70/7460-1J

FAA Notification

FAA Study	98-AEA-1258-OE	FAA Issue Date	07/04/1998
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Owner & Contact Information

FRN	0001770163	Owner Entity Type
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Owner

HOLSTON VALLEY BROADCASTING CORPORATION	P: (423)246-9578
Attention To: JOHN O. DAVIS	F:
222 COMMERCE STREET	E:
KINGSPORT , TN 37660	

Contact

P:
F:
E:

Last Action Status

Status	Constructed	Received	07/10/1998
Purpose	New	Entered	07/10/1998
Mode	Interactive		

Output from NADCON for station NEW 287D

North American Datum Conversion

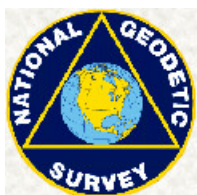
NAD 83 to NAD 27

NADCON Program Version 2.11

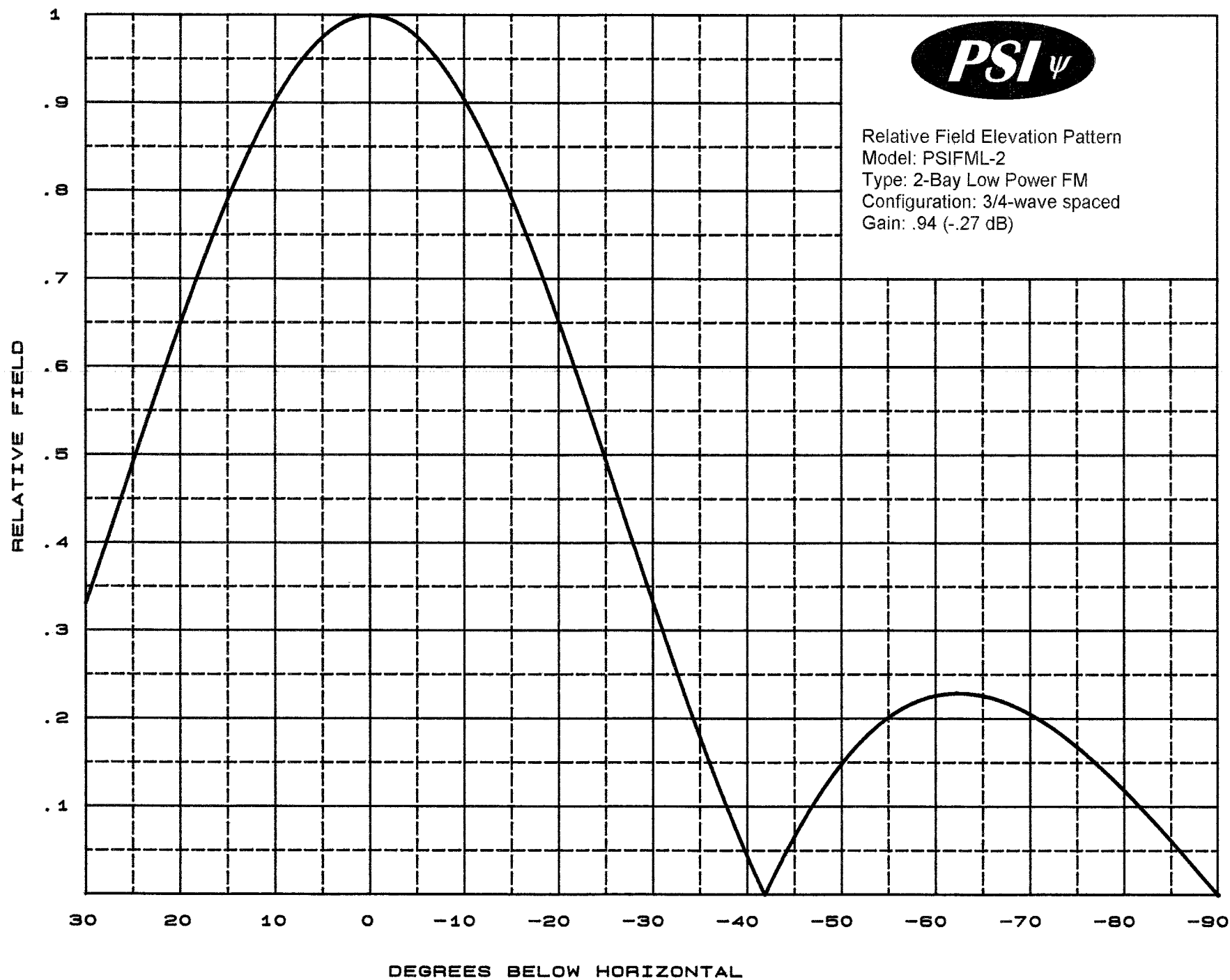
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Transformation #: 1 Region: Conus

	Latitude	Longitude
NAD 27 datum values:	36 35 44.61518	82 09 41.52466
NAD 83 datum values:	36 35 45.00000	82 09 41.00000
NAD 27 - NAD 83 shift values:	-0.38482	0.52466(secs.)
	-11.862	13.041 (meters)
Magnitude of total shift:		17.629(meters)



[NGS HOME PAGE](http://www.ngs.noaa.gov/cgi-bin/nadcon.prl)http://www.ngs.noaa.gov/cgi-bin/nadcon.prl





Propagation Systems Inc.
Elevation Pattern Tabulation
Antenna: PSIFML-2 Special
Bay spacing: 3/4 wave

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
-90.0	0.001	-60.000	-50.0	0.149	-16.513	-10.0	0.903	-0.883
-89.0	0.012	-38.221	-49.0	0.135	-17.364	-9.0	0.921	-0.713
-88.0	0.025	-32.201	-48.0	0.120	-18.405	-8.0	0.937	-0.561
-87.0	0.037	-28.679	-47.0	0.104	-19.677	-7.0	0.952	-0.429
-86.0	0.049	-26.207	-46.0	0.086	-21.289	-6.0	0.964	-0.315
-85.0	0.061	-24.285	-45.0	0.068	-23.404	-5.0	0.975	-0.219
-84.0	0.073	-22.748	-44.0	0.048	-26.425	-4.0	0.984	-0.139
-83.0	0.085	-21.443	-43.0	0.027	-31.481	-3.0	0.991	-0.079
-82.0	0.096	-20.349	-42.0	0.005	-46.848	-2.0	0.996	-0.036
-81.0	0.107	-19.378	-41.0	0.018	-34.664	-1.0	0.999	-0.009
-80.0	0.118	-18.538	-40.0	0.043	-27.417	0.0	1.000	0.000
-79.0	0.129	-17.792	-39.0	0.068	-23.365	1.0	0.999	-0.009
-78.0	0.139	-17.125	-38.0	0.094	-20.529	2.0	0.996	-0.036
-77.0	0.149	-16.522	-37.0	0.121	-18.329	3.0	0.991	-0.079
-76.0	0.159	-15.984	-36.0	0.149	-16.531	4.0	0.984	-0.139
-75.0	0.168	-15.508	-35.0	0.178	-14.998	5.0	0.975	-0.219
-74.0	0.176	-15.072	-34.0	0.207	-13.669	6.0	0.964	-0.315
-73.0	0.184	-14.685	-33.0	0.237	-12.489	7.0	0.952	-0.429
-72.0	0.192	-14.335	-32.0	0.268	-11.431	8.0	0.937	-0.561
-71.0	0.199	-14.026	-31.0	0.299	-10.475	9.0	0.921	-0.713
-70.0	0.205	-13.752	-30.0	0.331	-9.602	10.0	0.903	-0.882
-69.0	0.211	-13.518	-29.0	0.363	-8.801	11.0	0.884	-1.072
-68.0	0.216	-13.315	-28.0	0.395	-8.061	12.0	0.863	-1.279
-67.0	0.220	-13.146	-27.0	0.428	-7.377	13.0	0.841	-1.508
-66.0	0.224	-13.009	-26.0	0.460	-6.742	14.0	0.817	-1.757
-65.0	0.226	-12.904	-25.0	0.493	-6.151	15.0	0.792	-2.029
-64.0	0.228	-12.834	-24.0	0.525	-5.599	16.0	0.765	-2.322
-63.0	0.229	-12.800	-23.0	0.557	-5.083	17.0	0.738	-2.639
-62.0	0.229	-12.794	-22.0	0.589	-4.603	18.0	0.710	-2.979
-61.0	0.228	-12.829	-21.0	0.620	-4.154	19.0	0.680	-3.344
-60.0	0.227	-12.898	-20.0	0.650	-3.736	20.0	0.650	-3.736
-59.0	0.224	-13.009	-19.0	0.680	-3.344	21.0	0.620	-4.154
-58.0	0.220	-13.158	-18.0	0.710	-2.979	22.0	0.589	-4.603
-57.0	0.215	-13.351	-17.0	0.738	-2.639	23.0	0.557	-5.083
-56.0	0.209	-13.600	-16.0	0.765	-2.323	24.0	0.525	-5.599
-55.0	0.202	-13.894	-15.0	0.792	-2.029	25.0	0.493	-6.151
-54.0	0.194	-14.260	-14.0	0.817	-1.759	26.0	0.460	-6.742
-53.0	0.184	-14.685	-13.0	0.840	-1.510	27.0	0.428	-7.377
-52.0	0.174	-15.192	-12.0	0.863	-1.281	28.0	0.395	-8.061
-51.0	0.162	-15.795	-11.0	0.884	-1.072	29.0	0.363	-8.801
						30.0	0.331	-9.602

file: FML 2-bay elevation tabulation

revision: A

Date: 1/28/08