

TECHNICAL EXHIBIT
APPLICATION FOR DTV CONSTRUCTION PERMIT
IN SUPPORT OF ITS POST-TRANSITION FACILITY
STATION WETM-DT
ELMIRA, NEW YORK
CH 18 45 KW (MAX-DA) 376 M

Technical Narrative - "5 Mile Waiver Request"

This Technical Exhibit supports an application for digital television (DTV) station WETM-DT for its final DTV at Elmira, New York. This application requests a construction permit (CP) for a digital television operation on channel 18 at Elmira with a directional effective radiated power of 45 kilowatts. WETM-DT intends to reuse its existing Channel 18 analog transmitting antenna for digital operation.

WETM-DT is requesting processing under the "5 mile waiver" procedure to allow recovery of its noise-limited contour up to the licensed DTV noise-limited contour.

Proposed Facilities

Station WETM-DT proposes to operate DTV channel 18 from its NTSC transmitter site and antenna. The antenna height above average terrain for the channel 18 DTV operation, and also the NTSC facility, will remain at 376 meters. The proposed WETM-DT effective radiated power exceeds the Commission's *Appendix B* allocated maximum

effective radiated power in some azimuthal directions.¹ Therefore, an allocation study was completed to ensure no prohibited interference would occur.

The proposed DTV transmitter site will be located at its NTSC transmitter site. Therefore, the proposed site location is:

42° 06' 22" North Latitude
76° 52' 17" West Longitude

A sketch of antenna and pertinent elevations are included as Figure 2.

The Appendix contains the vertical plane radiation pattern for the existing antenna system.

Figure 3 is a map showing the DTV predicted coverage contour and the associated analog Grade B coverage contour. The extent of the contour has been calculated using the normal FCC prediction method. The Elmira city limits were derived from information contained in the 2000 U.S. Census of Population and Housing.

¹ See Seventh Report And Order And Eighth Further Notice Of Proposed Rule Making in the Matter of Advanced Television Systems and their Impact Upon the Existing Television Broadcast Service, MB Docket 87-268, Released August 6, 2007; Adopted August 1, 2007.

Population Served

The herein proposed WETM-DT facility is predicted to serve 606,927 persons, post-transition based upon the 2000 Census. WETM-DT's associated Appendix B facility is predicted to serve 606,000 persons. Therefore, the herein proposed WETM-DT facility would serve more than 100% of WETM-DT's Appendix B population.

Allocation Considerations

The proposed WETM-DT Channel 18 facility meets the requirements of Section 73.623 of the FCC Rules concerning predicted interference to other Appendix B DTV allotments. Longley-Rice interference analyses were conducted pursuant to the requirements of the FCC Rules; OET Bulletin No. 69; and published FCC guidelines for preparation of such interference analyses. The Longley-Rice interference analyses were conducted using the software developed by du Treil, Lundin & Rackley, Inc. based on the FCC published software routines.² Stations selected for analysis were determined pursuant to the distance requirements outlined in the FCC DTV Processing Guidelines Public Notice. The results of the interference analyses for the proposed WETM-DT facility are summarized herein at Figure 4. As indicated therein, the proposed facility will meet the 0.5% criterion outlined in the FCC Rules and published guidelines with respect to all considered stations.³

² The duTreil, Lundin & Rackley, Inc. DTV interference analysis program is based on the program and procedures outlined by the FCC in the Sixth Report and Order; subsequent Memorandum Opinion and Order; and FCC OET Bulletin No. 69. A nominal grid size resolution of 2 km was employed.

³ Interference analysis results reflect the net change in interference to a given station considering the interference predicted to occur from

Radiofrequency Electromagnetic Field Exposure

The proposed WETM-DT facilities were evaluated in terms of potential radiofrequency electromagnetic field exposure at ground level to workers and the general public. The radiation center for the proposed WETM-DT antenna is located 249 meters above ground level. The maximum effective radiated power is 45 kilowatts. A downward relative field value of 0.5 is assumed for the antenna's downward radiation. The calculated power density at a point 2 meters above ground level is 0.003 mW/cm². This is less than 5 percent of the Commission's recommended limit of 0.33 mW/cm² for channel 18 for an "uncontrolled" environment.

Access to the transmitting site is restricted and appropriately marked with warning signs. In the event that workers or other authorized personnel enter restricted areas or climb the tower, appropriate measures will be taken to assure worker safety with respect to radio frequency radiation exposure. Such measures include reducing the average exposure by spreading out the work over a longer period of time, wearing "accepted" RFR protective clothing and/or RFR exposure monitors or scheduling work when the stations are at

all other stations (i.e. "masking") including the allotment facility for WETM-DT. This properly reflects the net interference change for determining compliance with the FCC 0.5% *de minimis* standard.

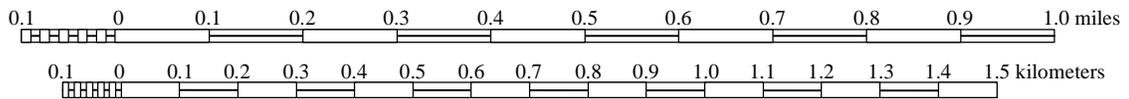
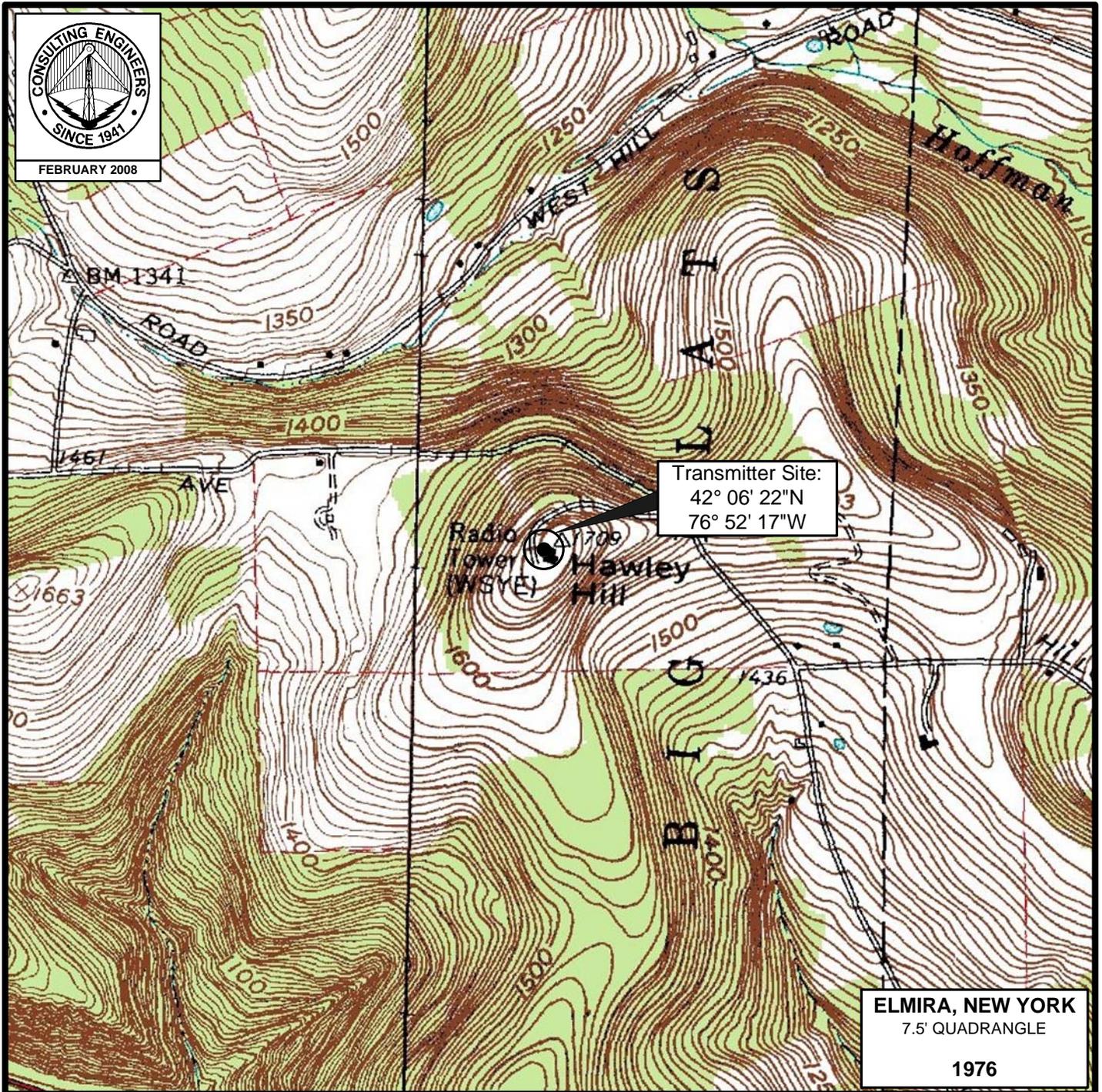
reduced power or shut down. The proposed WETM-DT operation appears to be otherwise categorically excluded from environmental processing.

Charles Cooper

du Treil, Lundin & Rackley, Inc.
201 Fletcher Avenue
Sarasota, Florida 32437
941.329.6000

March 5, 2008

Figure 1



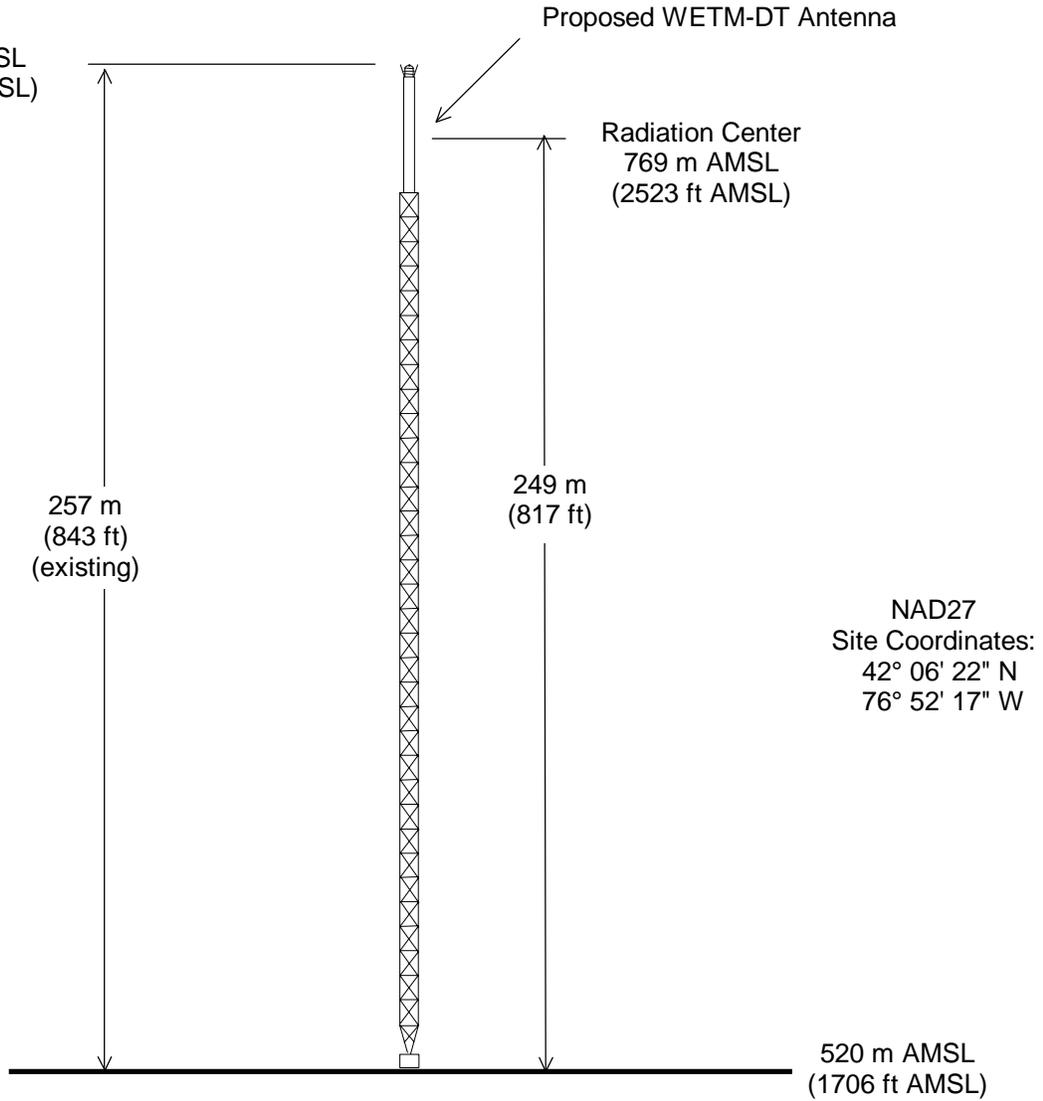
EXISTING TRANSMITTER SITE

DTV STATION WETM-DT
ELMIRA, NEW YORK
CH 18 45 KW-DA 376 M

du Treil, Lundin & Rackley, Inc. Sarasota, Florida



ASRN: 1010439



NAD27
Site Coordinates:
42° 06' 22" N
76° 52' 17" W

Not to Scale

ANTENNA AND SUPPORTING STRUCTURE

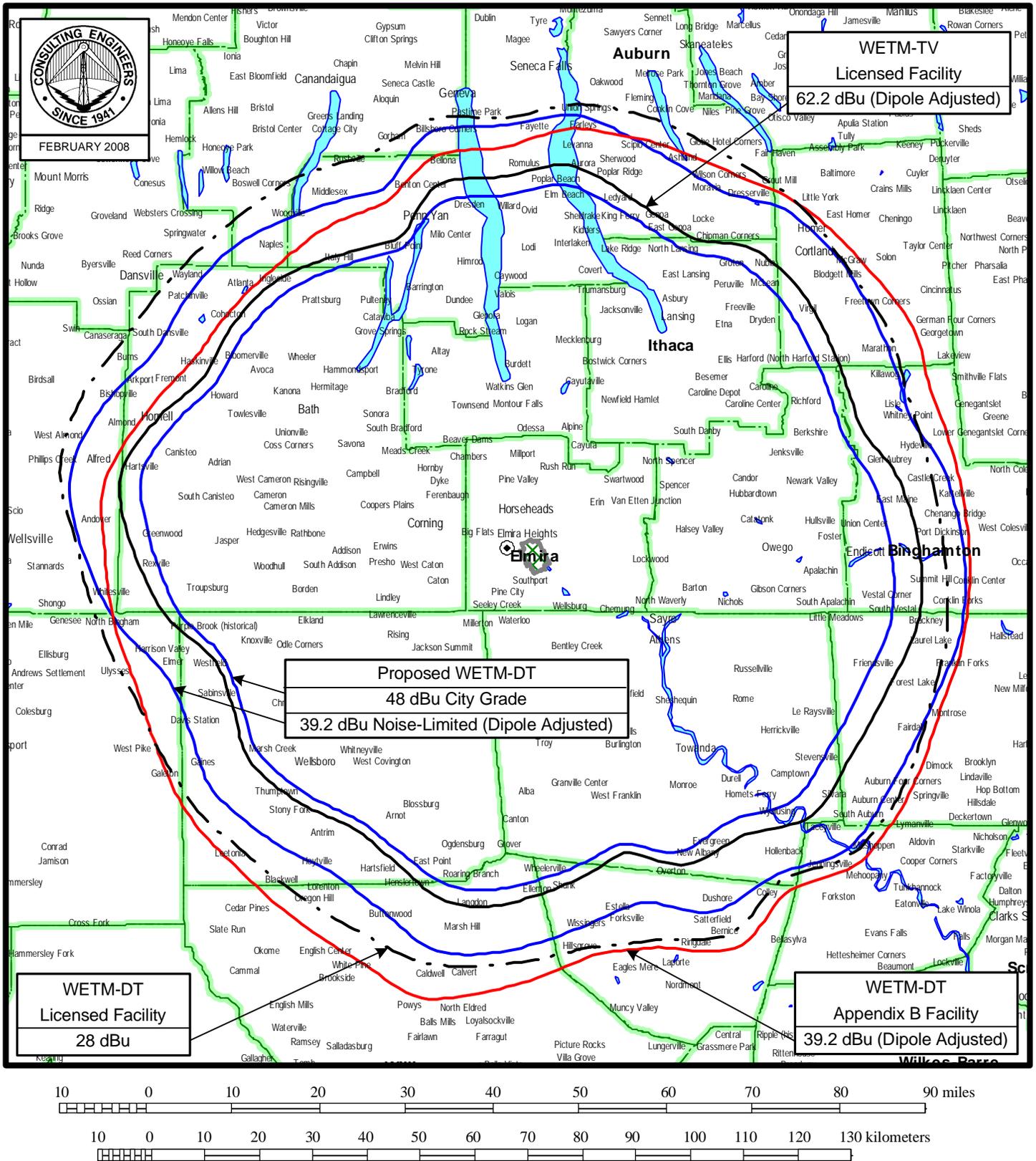
DTV STATION WETM-DT

ELMIRA, NEW YORK

CH 18 45 KW-DA 376 M

du Treil, Lundin & Rackley, Inc. Sarasota, Florida

Figure 3



PREDICTED COVERAGE CONTOURS

STATION WETM-DT

ELMIRA, NEW YORK

CH 18 45 KW-DA 376 M

du Treil, Lundin & Rackley, Inc Sarasota, Florida

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OET-69 Post-Transition Interference Analysis

Census data selected 2000

Post Transition Data Base Selected
 /export/home/cdbs/tvdb.sff_G
 TV INTERFERENCE and SPACING ANALYSIS PROGRAM

Date: 01-29-2008 Time: 08:15:35

Record Selected for Analysis

WETM USERRECORD-01 ELMIRA NY US
 Channel 18 ERP 45. kW HAAT 376. m RCAMSL 00769 m
 Latitude 042-06-22 Longitude 0076-52-17
 Status APP Zone 2 Border
 Dir Antenna Make CDB Model 00000000019284 Beam tilt N Ref Azimuth 0.
 Last update Cutoff date Docket
 Comments
 Applicant

Cell Size for Service Analysis 2.0 km/side

Distance Increments for Longley-Rice Analysis 1.00 km

Facility meets maximum height/power limits

Azimuth (Deg)	ERP (kW)	HAAT (m)	41.0 dBu F(50,90) (km)
0.0	21.987	381.9	75.9
45.0	22.176	420.0	78.4
90.0	45.000	402.9	82.1
135.0	22.461	431.8	79.1
180.0	22.176	335.4	72.4
225.0	15.585	302.5	68.1
270.0	23.523	368.0	75.4
315.0	14.518	369.2	72.3

Evaluation toward Class A Stations

No Spacing violations or contour overlap to Class A stations

Class A Evaluation Complete

SPACING VIOLATION FOUND BETWEEN STATION

WETM 18 ELMIRA NY USERRECORD01

and station

SHORT TO: WETM-TV 18 ELMIRA NY BFRCT 20050812AHQ
 042-06-22 0076-52-17
 Req. separation 196.3 Actual separation 0.0 Short 196.3 km

SHORT TO: WSYT 19 SYRACUSE NY BPCDT 19991029ADL
 042-52-50 0076-12- 0
 Req. separation => 24.0 <= 110.0 Actual separation 102.2 Short 7.8(78.2) km

LANDMOBILE SPACING VIOLATIONS FOUND

NONE

Proposed facility OK to FCC Monitoring Stations

Proposed facility OK toward West Virginia quite zone

Proposed facility OK toward Table Mountian

Proposed facility is within the Canadian coordination distance
 Distance to border = 169.8km

Proposed facility is beyond the Mexican coordination distance

Proposed station is OK toward AM broadcast stations

 Start of Interference Analysis

	Proposed Station			
Channel	Call	City/State	ARN	
18	WETM	ELMIRA NY	USERRECORD01	

Stations Potentially Affected by Proposed Station

Chan No.	Call	City/State	Dist(km)	Status	Application	Ref.
17	WSYR-TV	SYRACUSE NY	116.2	LIC	BLCDT	-
20030812ABK						
18	WMBC-TV	NEWTON NJ	261.7	CP	BMPCDT	-
20040722ADG						
19	WSYT	SYRACUSE NY	102.2	CP	BPCDT	-
19991029ADL						

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
17	WSYR-TV	SYRACUSE NY	BLCDT	-20030812ABK

Stations Potentially Affecting This Station

Chan No.	Call	City/State	Dist(km)	Status	Application	Ref.
16	WXXI-TV	ROCHESTER NY	128.5	LIC	BLEDT	-
20030916ABS						
17	WPHL-TV	PHILADELPHIA PA	329.3	LIC	BLCDT	-
20021025ABE						
17	WPXQ	BLOCK ISLAND RI	384.3	CP	BPCDT	-
19991022AAT						
18	WETM	ELMIRA NY	116.2	APP	USERRECORD-01	

Proposal causes no interference

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Analysis of Interference to Affected Station 2

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
18	WMBC-TV	NEWTON NJ	BMPCDT	-20040722ADG

Stations Potentially Affecting This Station

Chan No.	Call	City/State	Dist(km)	Status	Application	Ref.
17	WPHL-TV	PHILADELPHIA PA	126.6	LIC	BLCDT	-
20021025ABE						
17	WPXQ	BLOCK ISLAND RI	213.9	CP	BPCDT	-
19991022AAT						
18	WMFP	LAWRENCE MA	294.9	CP	BPCDT	-
19991101AFC						
18	WETM	ELMIRA NY	261.7	APP	USERRECORD-01	

Total scenarios = 1

Result key: 1
 Scenario 1 Affected station 2
 Before Analysis

Results for: 18A NJ NEWTON BMPCDT 20040722ADG CP
 HAAT 250.0 m, ATV ERP 1000.0 kW

	POPULATION	AREA (sq km)
within Noise Limited Contour	17471348	19645.2
not affected by terrain losses	17266804	18593.4
lost to NTSC IX	0	0.0
lost to additional IX by ATV	4936	56.4
lost to ATV IX only	4936	56.4
lost to all IX	4936	56.4

Potential Interfering Stations Included in above Scenario 1

17A PA PHILADELPHIA	BLCDT	20021025ABE	LIC
18A MA LAWRENCE	BPCDT	19991101AFC	CP

After Analysis

Results for: 19A NY SYRACUSE BPCDT 19991029ADL CP
 HAAT 445.0 m, ATV ERP 621.0 kW

	POPULATION	AREA (sq km)
within Noise Limited Contour	1856868	32303.6
not affected by terrain losses	1653321	30098.3
lost to NTSC IX	0	0.0
lost to additional IX by ATV	4311	131.8
lost to ATV IX only	4311	131.8
lost to all IX	4311	131.8

Potential Interfering Stations Included in above Scenario 1

20A NY ITHACA BLCT 20021209AAA LIC
 18A NY ELMIRA USERRECORD01 APP

Percent new IX = 0.1198%

Worst case new IX 0.1198% Scenario 1

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Analysis of Interference to Affected Station 4

Analysis of current record

Channel Call City/State Application Ref. No.
 18 WETM ELMIRA NY USERRECORD-01

Stations Potentially Affecting This Station

Chan No.	Call	City/State	Dist(km)	Status	Application Ref.
17	WSYR-TV	SYRACUSE NY	116.2	LIC	BLCDT -
20030812ABK					
18	WMBC-TV	NEWTON NJ	261.7	CP	BMPCDT -
20040722ADG					
19	WSYT	SYRACUSE NY	102.2	CP	BPCDT -
19991029ADL					

Total scenarios = 1

Result key: 3
 Scenario 1 Affected station 4
 Before Analysis

Results for: 18A NY ELMIRA USERRECORD01 APP
 HAAT 376.0 m, ATV ERP 45.0 kW

	POPULATION	AREA (sq km)
within Noise Limited Contour	714695	18572.3
not affected by terrain losses	633833	16345.2
lost to NTSC IX	0	0.0
lost to additional IX by ATV	26906	571.8
lost to ATV IX only	26906	571.8
lost to all IX	26906	571.8

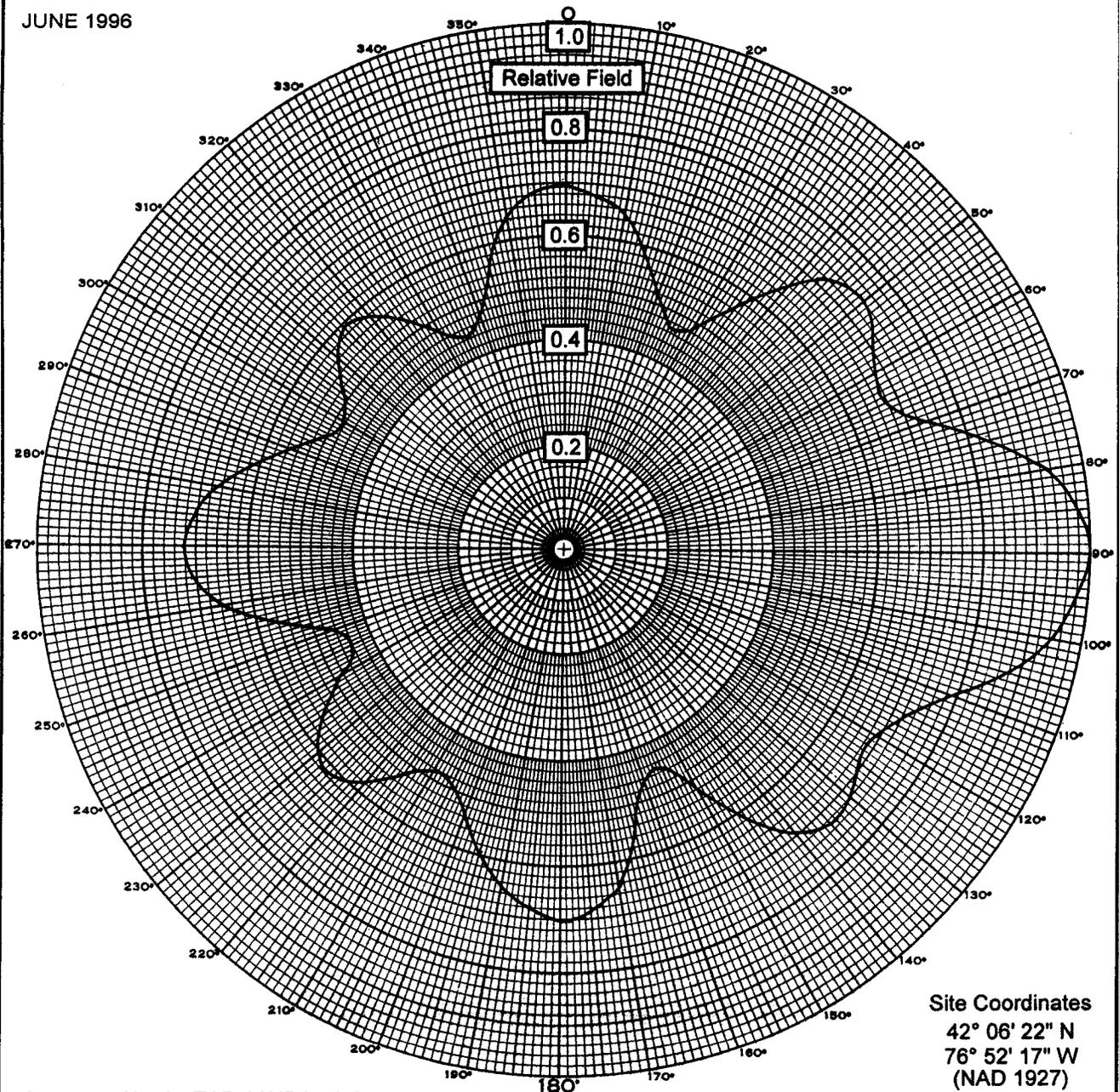
Potential Interfering Stations Included in above Scenario 1

17A NY SYRACUSE BLCDT 20030812ABK LIC
 18A NJ NEWTON BMPCDT 20040722ADG CP

APPENDIX

TRANSMITTING ANTENNA
VERTICAL AND HORIZONTAL
PLANE PATTERN

JUNE 1996



Site Coordinates
42° 06' 22" N
76° 52' 17" W
(NAD 1927)

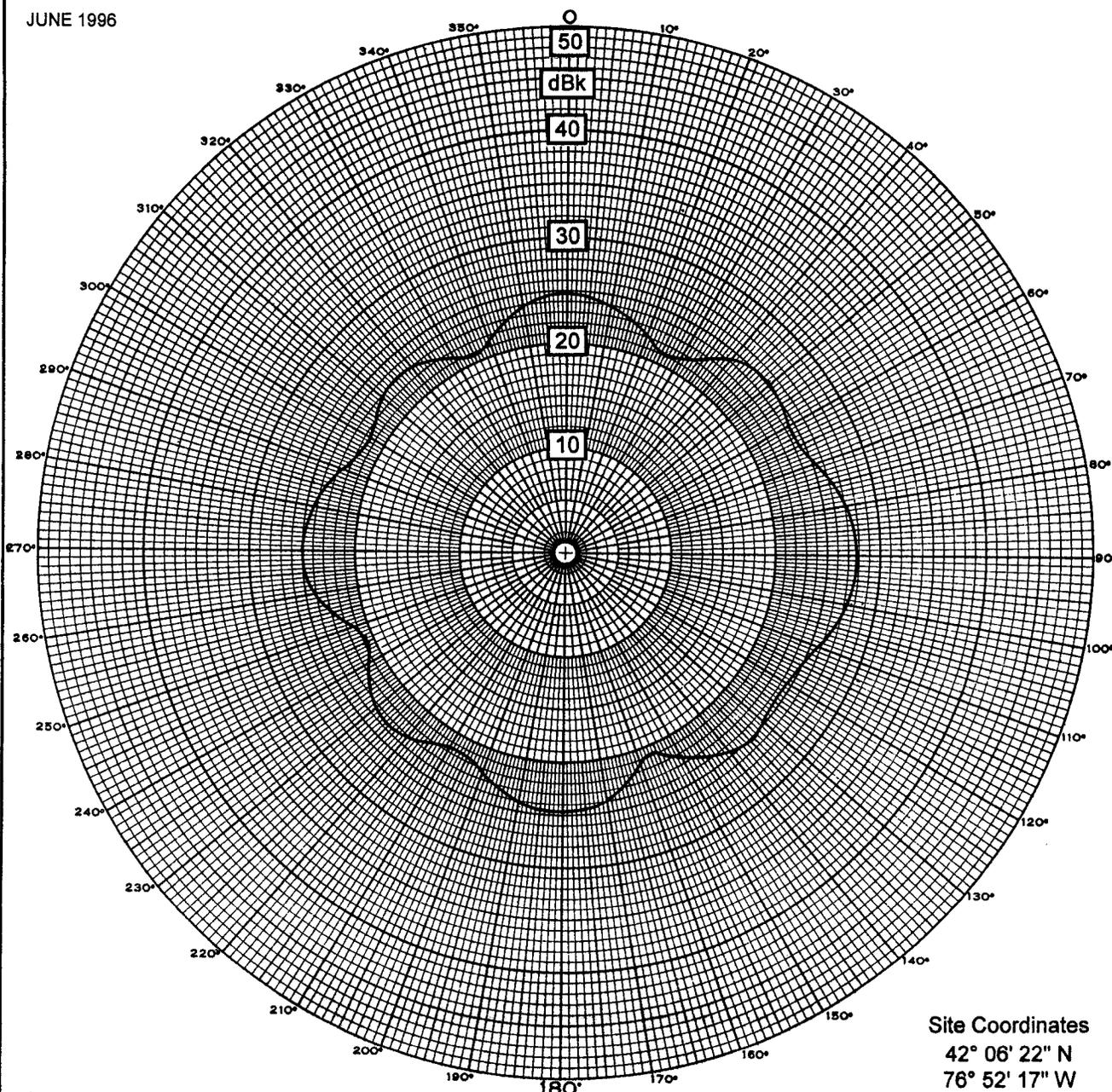
Antenna: Harris, TAD-20UDA-4/40
Beam Tilt: -1.0° Electrical
Maximum Power Gain: 49.96

ANTENNA HORIZONTAL PLANE RADIATION PATTERN (RELATIVE FIELD)

SMITH TELEVISION OF NEW YORK, INC.
STATION WETM-TV ELMIRA, NEW YORK
CH 18+ 603 KW (MAX-DA, BT) 376 METERS

Denny & Associates, P.C. Consulting Engineers

JUNE 1996



Antenna: Harris, TAD-20UDA-4/40
Beam Tilt: -1.0° Electrical
Maximum Power Gain: 49.96

Site Coordinates
42° 06' 22" N
76° 52' 17" W
(NAD 1927)

ANTENNA HORIZONTAL PLANE RADIATION PATTERN (dBk)

SMITH TELEVISION OF NEW YORK, INC.
STATION WETM-TV ELMIRA, NEW YORK
CH 18+ 603 KW (MAX-DA, BT) 376 METERS

Denny & Associates, P.C. Consulting Engineers

**ENGINEERING EXHIBIT
APPLICATION FOR CONSTRUCTION PERMIT
SMITH TELEVISION OF NEW YORK, INC.
STATION WETM-TV
ELMIRA, NEW YORK
CH 18+ 603 KW (MAX-DA, BT) 376 METERS**

Antenna Horizontal Plane Radiation Patterns and Data¹

<u>Azimuth</u> (deg. T)	<u>Relative</u> <u>Field</u>	<u>Maximum</u> <u>Effective</u> <u>Radiated</u> <u>Power²</u> (dBk)	<u>Azimuth</u> (deg. T)	<u>Relative</u> <u>Field</u>	<u>Maximum</u> <u>Effective</u> <u>Radiated</u> <u>Power²</u> (dBk)
0>	0.699	24.7	90#	1.000	27.8
5	0.677	24.4	95	0.977	27.6
10	0.653	24.1	100	0.944	27.3
15	0.586	23.2	105	0.872	26.6
20	0.519	22.1	108.6	0.817	26.0
25	0.471	21.3	110	0.796	25.8
27<	0.468	21.2	115	0.725	25.0
30	0.485	21.5	120	0.689	24.6
35	0.561	22.8	122<	0.685	24.5
40	0.660	24.2	125	0.692	24.6
45	0.728	25.0	130	0.720	24.9
49>	0.745	25.2	134>	0.730	25.1
50	0.744	25.2	135	0.729	25.1
55	0.720	24.9	140	0.693	24.6
60	0.686	24.5	145	0.620	23.6
63<	0.674	24.4	150	0.528	22.3
65	0.679	24.4	155	0.456	21.0
70	0.732	25.1	157<	0.446	20.8
75	0.835	26.2	160	0.462	21.1
80	0.932	27.2	165	0.548	22.6
85	0.980	27.6	170	0.641	23.9

NOTE: See Sheet 4 for footnotes.

P
 7/26/96

<u>Azimuth</u> (deg. T)	<u>Relative</u> <u>Field</u>	<u>Maximum</u> <u>Effective</u> <u>Radiated</u> <u>Power</u> ² (dBk)	<u>Azimuth</u> (deg. T)	<u>Relative</u> <u>Field</u>	<u>Maximum</u> <u>Effective</u> <u>Radiated</u> <u>Power</u> ² (dBk)
175	0.684	24.5	265	0.704	24.8
180>	0.702	24.7	270>	0.723	25.0
185	0.679	24.4	275	0.702	24.7
190	0.652	24.1	280	0.677	24.4
195	0.594	23.3	285	0.618	23.6
200	0.539	22.4	290	0.557	22.7
205	0.494	21.7	295	0.505	21.9
208<	0.483	21.5	300<	0.486	21.5
210	0.485	21.5	305	0.511	22.0
215	0.520	22.1	310	0.560	22.8
220	0.576	23.0	315	0.590	23.2
225	0.610	23.5	316>	0.590	23.2
227>	0.613	23.5	320	0.576	23.0
230	0.601	23.4	325	0.532	22.3
235	0.554	22.7	330	0.480	21.4
240	0.490	21.6	335	0.448	20.8
245	0.444	20.7	336<	0.447	20.8
246*	0.441	20.7	340	0.475	21.3
250	0.467	21.2	345	0.560	22.8
255	0.560	22.8	350	0.642	24.0
260	0.657	24.2	355	0.683	24.5

¹ Horizontal plane relative field data furnished by the antenna manufacturer.

² At 1.00° depression angle. Effective radiated power in the horizontal plane is 1.6 dB less than value indicated.

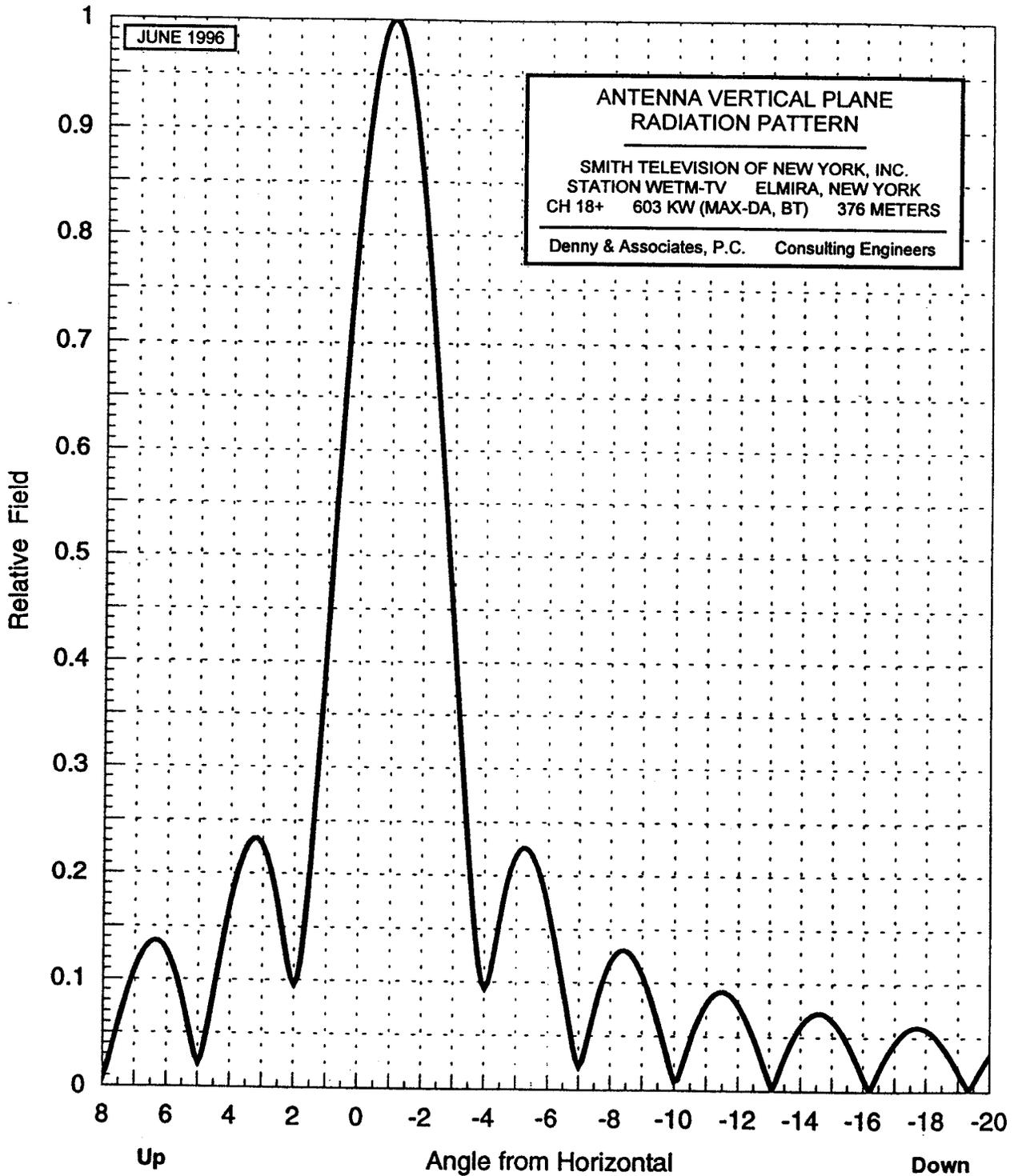
Pattern maximum.

* Pattern minimum.

> Local maximum.

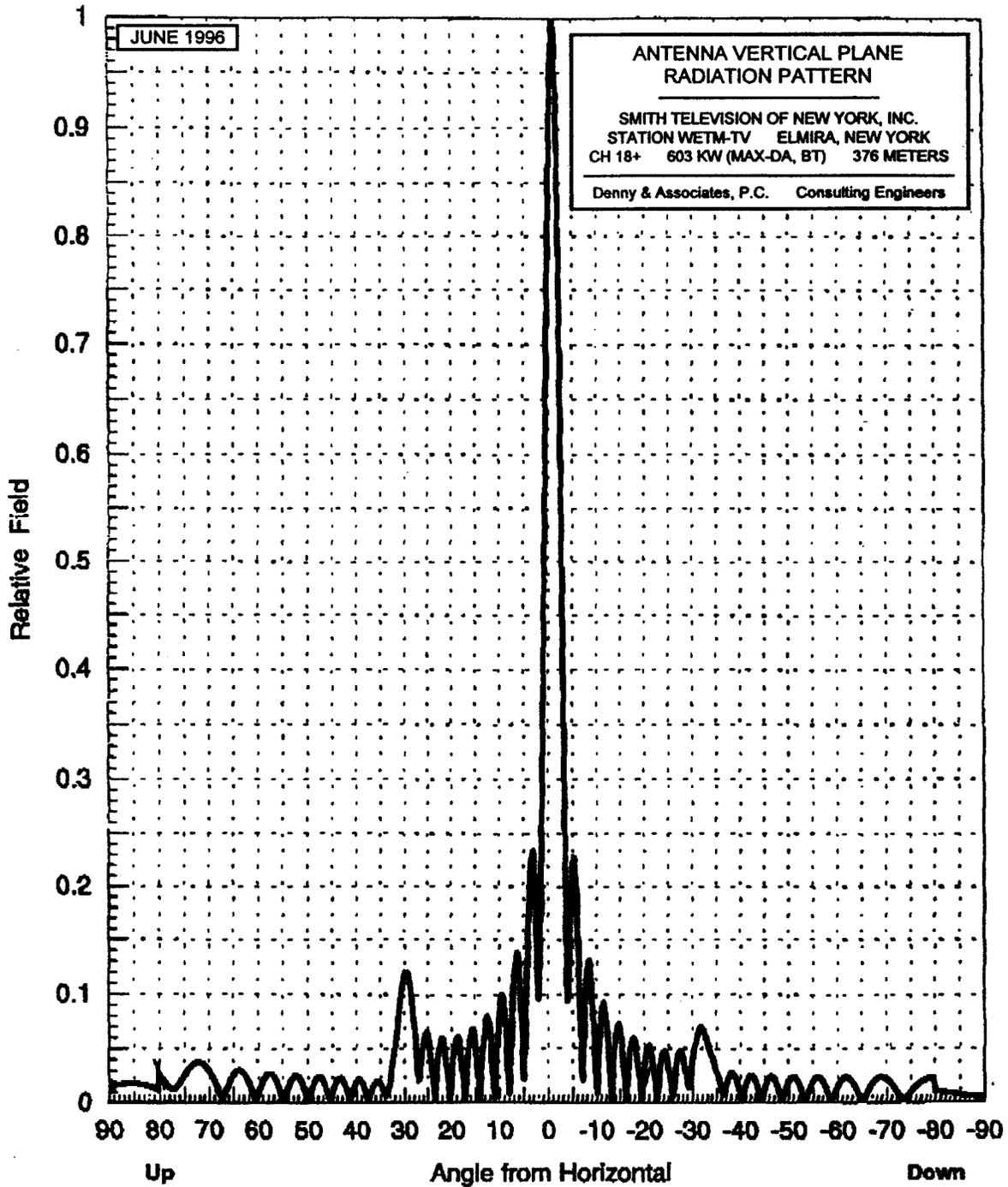
< Local minimum.

Calculated Elevation Pattern



Series: TAD-UDA
Harris Pattern No.: 6165E01R

Calculated Elevation Pattern



Series: TAD-UDA
Harris Pattern No.: 6165E01R