

ENGINEERING REPORT  
RE MODIFICATION OF CONSTRUCTION PERMIT  
(BMPCDT-20000428ABR)  
FOR A NEW DTV STATION  
**WBBH-DT, FORT MYERS, FLORIDA**  
CHANNEL 15 1000 KW ERP DA 453 METERS HAAT

FEBRUARY 2002

COHEN, DIPPELL AND EVERIST, P.C.  
CONSULTING ENGINEERS  
RADIO AND TELEVISION  
WASHINGTON, D.C.

COHEN, DIPPELL AND EVERIST, P. C.

City of Washington )  
  ) ss  
District of Columbia )

Sudhir K. Khanna, being duly sworn upon his oath, deposes and states:

That he is a registered professional engineer in the District of Columbia, holds the degree of Master of Science in Electrical Engineering, and is Secretary-Treasurer of Cohen, Dippell and Everist, P.C., Consulting Engineers, Radio-Television, with offices at 1300 L Street, N.W., Suite 1100, Washington, D.C. 20005;

That his qualifications are a matter of record in the Federal Communications Commission;

That the attached engineering report was prepared by him or under his supervision and direction; and

That the facts stated herein are true of his own knowledge, except such facts as are stated to be on information and belief, and as to such facts, he believes them to be true.



Sudhir K. Khanna  
District of Columbia  
Professional Engineer  
Registration No. 8057

Subscribed and sworn to before me this 19<sup>th</sup> day of February, 2002.



Notary Public

My Commission Expires:

2/28/2003

### Introduction

This engineering report has been prepared on behalf of Waterman Broadcasting corporation of Florida, licensee of TV station WBBH-TV, Fort Myers, Florida in support of its application to modify construction permit (BMPCDT-20000428ABR) for a new digital television (DTV) station. At present, WBBH-TV operates on analog TV Channel 20 (506-512 MHz) with 5000 kW effective radiated power (ERP) and 451 meters antenna height above average terrain (HAAT). The current analog Channel 20 operation of WBBH-TV is with a directional TV antenna. The Commission has allotted Channel 15 (476-482 MHz) for WBBH-TV's digital TV operation with 215.4 kW maximum ERP and 451 meters HAAT. Station WBBH-DT has been granted a construction permit (BMPCDT-20000428ABR) to operate with 1000 kW ERP and 419 meters HAAT. It is now proposed to operate WBBH-DT on Channel 15 with 1000 kW ERP at 453 meters HAAT using a non-directional TV antenna.

### Antenna Site

It is proposed to top-mount the Channel 15 DTV antenna on a new tower to be constructed near the existing WBBH-TV tower. The proposed TV antenna will be also used by the Channel 41 DTV operation of WZVN-DT.

The geographic coordinates (NAD-27) of the proposed tower are as follows.

North Latitude: 26° 49' 21"

West Longitude: 81° 45' 47"

The proposed site is shown on an attached 7.5 minute series USGS map.

The following data shows the pertinent information concerning the proposed DTV operation.

Antenna and Elevation Data

Antenna:	Andrew	Model No. ABBP14H3-HTP4X-15
	Beam Tilt	0.75 degrees electrical
	Directivity	Non-Directional
Elevation of the site above mean sea level:		10.9 meters
Elevation of the top of supporting structure: above ground including DTV antenna		461.2 meters
Elevation of the top of supporting structure: above mean sea level including DTV antenna		472.1 meters
Height of antenna radiation center: meters above ground		450.9 meters
Height of antenna radiation center: above mean sea level		461.8 meters
Height of antenna radiation center: above average terrain		453 meters

Analog TV and DTV Allocation Situation

The attached Tables I and II show the nearest pertinent analog TV and DTV stations and allotments. Since the proposed WBBH-DT would be operating with higher power and antenna height than allotted by the Commission, an electromagnetic interference study has been conducted according to OET Bulletin 69 to determine any potential impact on the existing analog and allotted DTV operations. The attached Table III shows the area and population that may receive

interference from the proposed WBBH-DT operation. Table III indicates the potential interference population will not exceed the Commission's guidelines provided in its Public Notice dated August 10, 1998 (Additional Application Processing Guidelines for Digital Television (DTV)). Therefore, the proposed WBBH-DT operation would not have any adverse impact on the existing analog or proposed DTV allotments.

The only pertinent Class A LPTV station (WTCN-CA), requiring further study is located at Stuart, Florida. WTCN-CA is authorized to operate on Channel 15 with 142.6 kW ERP and 135 meters antenna radiation center above mean sea level. The attached Table IV indicates the proposed WBBH-DT operation would not cause any interference to WTCN-CA.

#### Computed Principal Community Contour

According to Section 73.625 of the Commission's rules DTV stations operating on UHF TV Channels 14-69 are required to provide 41 dBu signal level over the principal community. In addition, under MM Docket No. 00-83, the Commission has mandated that UHF DTV stations provide 48 dBu signal level over its principal community by December 31, 2004.

The predicted 41 dBu and 48 dBu contours were computed according to Section 73.625(b) of the Commission's rules. The average elevation data for eight cardinal and other radials between 3.2 and 16.1 km is based on the 3-second computerized terrain database.

The distances along these radials to the predicted F(50,90) 48 and 41 dBu contours, the average elevations, and the effective antenna heights are included on the attached tabulation (Table V).

The attached map (Exhibits E-3) shows the computed F(50,90) 48 dBu and 41 dBu contours predicted according to Section 73.625(b) of the Commission's rules based on the DTV facilities of 1000 kW maximum effective radiated power (ERP) and 452 meters antenna height above average terrain (HAAT). Exhibits E-3 indicates the proposed 48 dBu and 41 dBu contours would serve all of Fort Myers, Florida, the principal community of WBBH-DT.

#### Environmental Statement

The proposed antenna site is approximately 220 meters southeast of an existing tower. According to the applicant, the antenna site is not located near any known wilderness area, wildlife preserve, historic place or Indian religious sites or critical habitats which can affect the endangered or threatened species. The proposed facilities are not located in a flood plain area. The construction of a guyed tower and a building to house the TV transmitters do not involve significant changes in the surface features.

The new guyed tower will be lighted and painted as required by the FAA. The proposed site is not located near any residential neighborhood.

The proposed facilities will not affect any known districts, sites, buildings, structures, or objects significant in American history, architecture, archaeology, engineering, or culture.

An evaluation has been made to determine compliance with the Commission's specified standards for human exposure to RF fields as set forth in the OET Bulletin No. 65 dated August 1997. For a maximum effective radiated power of 1000 kW and a radiation center of 450.9 meters above ground level, the proposed DTV operation would have a maximum of 1.6 microwatts per square centimeter ( $\mu\text{W}/\text{cm}^2$ ) RF field at 2 meters above the base of tower,

assuming an antenna field factor of 0.1 in the downward direction. The Commission's guidelines for Channel 15 TV operation are  $1,587 \mu\text{W}/\text{cm}^2$  for the occupational/controlled and  $317 \mu\text{W}/\text{cm}^2$  for the general population/uncontrolled environment. The RF field contributed by WBBH-DT on the ground would be less than 1% of the Commission's guidelines for Channel 15.

Therefore, the proposed operation of WBBH-DT complies with the Commission's guidelines with respect to RF fields exposure to members of the public and personnel working around the proposed WBBH-DT, Channel 15 DTV facility. With respect to work performed on the tower, station WBBH-DT, in coordination with other station, will establish procedure to ensure that workers are not exposed to RF fields above the Commission's guidelines, by reducing or turning off the power, as appropriate.

For the reasons stated above, it is believed this proposal complies with Section 1.1307(a) and (b) of the Commission's Rules; therefore, under Section 1.1306, it is categorically excluded from the environmental processing.

# ANDREW ELEVATION PATTERN

Type:	ATW15H3H-15	
Directivity:	Numeric	dBd
Main Lobe:	21.80	(13.38)
Horizontal:	14.22	(11.53)
Beam Tilt:	0.75	
Polarization:	Horizontal	
Channel:	15	
Location:	Ft. Myers, FL.	

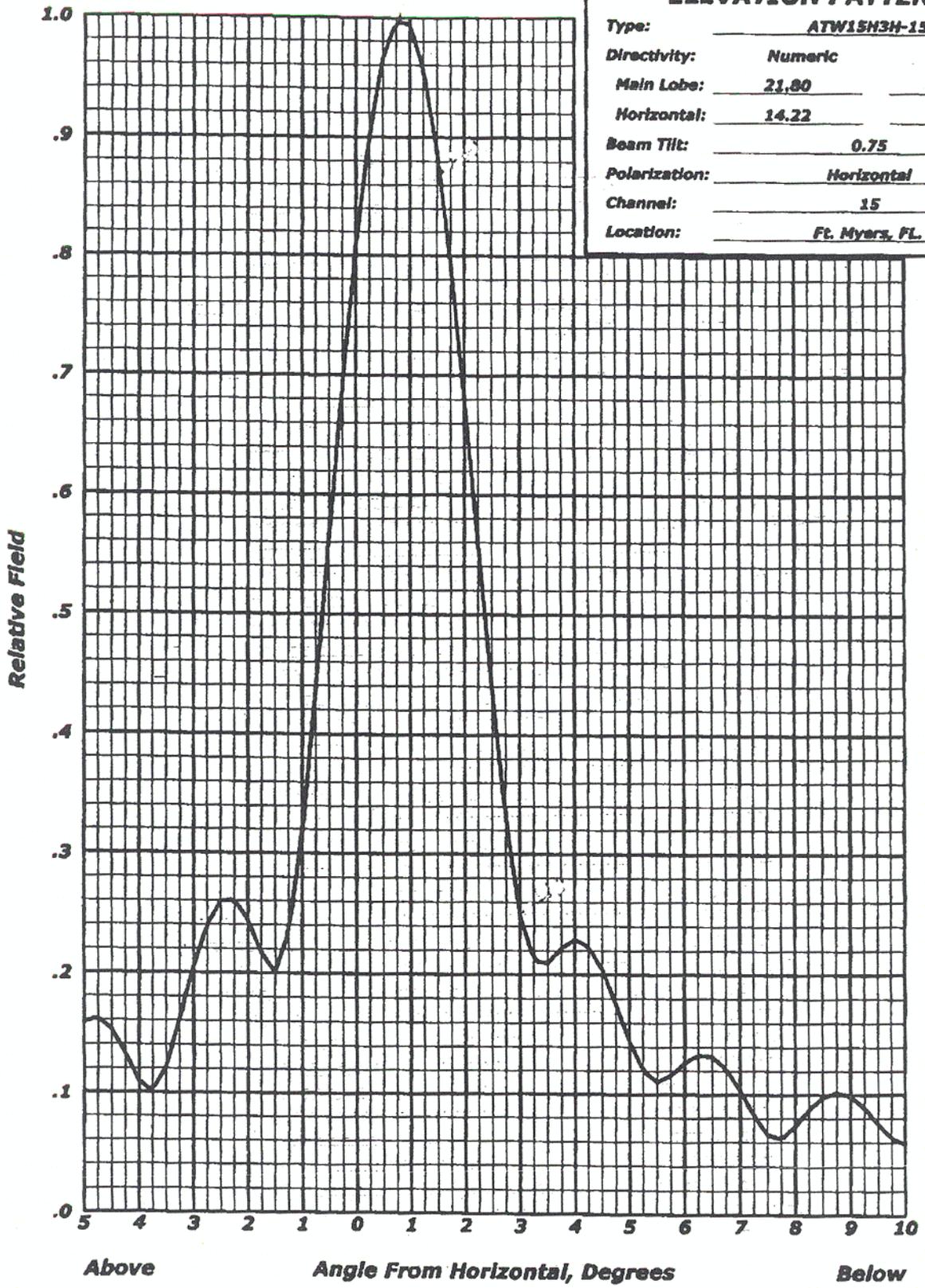


TABLE I  
ANALOG TV ALLOCATION SITUATION  
FOR THE PROPOSED CHANNEL 15 DTV OPERATION OF  
WBBH-DT, FORT MYERS, FLORIDA  
FEBRUARY 2002

<u>Channel</u>	<u>Call</u>	<u>City/State</u>	<u>Geographic Coordinates</u>	<u>Actual Distance</u> km
15	WBBH-DT	Fort Myers, FL	26°49'21" 81°45'47"	–
15	WCEU-TV	New Smyrna Beach, FL	29°10'24" 81°09'24"	267.3
16	WUSF-TV	Tampa, FL	27°50'53" 82°15'48"	124.0
17	WLRN-TV	Miami, FL	25°57'30" 80°12'44"	182.0
18	WKCF-TV	Clermont, FL	28°35'12" 81°04'58"	206.7
18	WKCF-TV	Clermont, FL	28°34'51" 81°04'32"	206.3
19	NEW	Bradenton, FL	27°33'27" 82°21'59"	101.0
22	WCLF-TV	Clearwater, FL	27°49'10" 82°15'39"	121.0

TABLE II  
DTV ALLOCATION SITUATION  
FOR THE PROPOSED CHANNEL 15 DTV OPERATION OF  
WBBH-DT, FORT MYERS, FLORIDA  
FEBRUARY 2002

<u>Channel</u>	<u>Call</u>	<u>City/State</u>	<u>Geographic Coordinates</u>	<u>Actual Distance</u> km
15	WBBH-DT	Fort Myers, FL	26°49'21" 81°45'47"	–
14	WRDQ-DT	Orlando, FL	28°34'07" 81°03'16"	205.7
15	WCJB-TV	Gainesville, FL	29°32'11" 82°24'00"	307.2
16	WPBF-DT	West Palm Beach, FL	27°07'17" 80°23'42"	139.8

TABLE III  
TV INTERFERENCE and SPACING SUMMARY

WBBH-TV OTHER -SKK315 FORT MYERS FL US  
Channel 15 ERP 1000 kW HAAT 0 m RCAMSL 00461 m

Facility meets maximum height/power limits

Contour overlap to Class A station

WTCN-CA 15 STUART FL BLTTL 20000818ADJ

Contour overlap to Class A station

WTCN-CA 15 STUART FL BPTTA 20010126ABL

Proposed facility OK to FCC Monitoring Stations

Proposed facility OK toward West Virginia quite zone

Proposed facility is beyond the Canadian coordination distance

Proposed facility is beyond the Mexican coordination distance

Proposed station is OK toward AM broadcast stations

Analysis of Interference to Affected Station 1

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
15	WTCN-CA	STUART FL	BPTTA	-20010126ABL

Proposal causes no interference

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FINISHED FINISHED FINISHED FINISHED FINISHED FINISHED

TABLE IV  
TV INTERFERENCE and SPACING SUMMARY

WBBH-TV OTHER -SKK315 FORT MYERS FL US  
Channel 15 ERP 1000 kW HAAT 0 m RCAMSL 00461 m

Facility meets maximum height/power limits

Contour overlap to Class A station  
WTCN-CA 15 STUART FL BLTTL 20000818ADJ

Contour overlap to Class A station  
WTCN-CA 15 STUART FL BPTTA 20010126ABL

Proposed facility OK to FCC Monitoring Stations

Proposed facility OK toward West Virginia quite zone

Proposed facility is beyond the Canadian coordination distance

Proposed facility is beyond the Mexican coordination distance

Proposed station is OK toward AM broadcast stations

Analysis of Interference to Affected Station 1

DTV Baseline Analysis

Channel	Call	City/State	Application	Ref. No.
14	WZWY-DT	ORLANDO FL	DTVPLN	-DTVP0118

NTSC Baseline Analysis

Channel	Call	City/State	Application	Ref. No.
27	WZWY	ORLANDO FL	DTVPLN	-NPLN0349

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
14	WRDQ	ORLANDO FL	BPCDT	-19991029AGT

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.
14	WZDY-DT	ORLANDO FL	DTVPLN	-DTVP0118

Total scenarios = 1

Scenario 1 % New Interference 0.01 OK

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Analysis of Interference to Affected Station 3

NTSC Baseline Analysis

Channel	Call	City/State	Application	Ref. No.
15	WCEU	NEW SMYRNA BEACH FL	DTVPLN	-NPLN0331

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
15	WCEU	NEW SMYRNA BEACH FL	BLCT	-19880129KF

Total scenarios = 2

Scenario 1 % New Interference 0.00 OK

Scenario 2 % New Interference 0.00 OK

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Analysis of Interference to Affected Station 4

Analysis of current record  
Channel Call City/State Application Ref. No.  
15 WTCN-CA STUART FL BLTTL -20000818ADJ

Proposal causes no interference

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Analysis of Interference to Affected Station 5

Analysis of current record  
Channel Call City/State Application Ref. No.  
15 WTCN-CA STUART FL BPTTA -20010126ABL

Proposal causes no interference

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Analysis of Interference to Affected Station 6

Analysis of current record  
Channel Call City/State Application Ref. No.  
16 WTWD-LP ORLANDO FL BLTTL -20001020AAC

Proposed station is beyond the site to  
nearest cell evaluation distance

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Analysis of Interference to Affected Station 7

NTSC Baseline Analysis  
Channel Call City/State Application Ref. No.

16 WUSFTV TAMPA FL DTVPLN -NPLN0333

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
16	WUSF-TV	TAMPA FL	BLET	-19810123KG

Total scenarios = 3

Scenario 1 % New Interference 0.00 OK

Scenario 2 % New Interference 0.00 OK

Scenario 3 % New Interference 0.00 OK

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Analysis of Interference to Affected Station 8

DTV Baseline Analysis

Channel	Call	City/State	Application	Ref. No.
16	WPBF-DT	TEQUESTA FL	DTVPLN	-DTVP0201

NTSC Baseline Analysis

Channel	Call	City/State	Application	Ref. No.
25	WPBF	TEQUESTA FL	DTVPLN	-NPLN0346

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
16	WPBF-DT	TEQUESTA FL	DTVPLN	-DTVP0201

Proposal causes no interference

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Analysis of Interference to Affected Station 9

Analysis of current record

Channel	Call	City/State	Application Ref. No.
16	WPBF	WEST PALM BEACH FL	BPCDT -19991101AEG

Total scenarios = 1

Scenario 1 % New Interference 0.00 OK

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Analysis of Interference to Affected Station 10

Analysis of current record

Channel	Call	City/State	Application Ref. No.
18	WSVT-LP	TAMPA FL	BPTTL -19990316JE

Proposed station is beyond the site to nearest cell evaluation distance

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Analysis of Interference to Affected Station 11

Analysis of current record

Channel	Call	City/State	Application Ref. No.
19	960724KT	BRADENTON FL	BPET -19960724KT

Proposal causes no interference

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Analysis of Interference to Affected Station 12

NTSC Baseline Analysis

Channel	Call	City/State	Application Ref. No.
22	WCLF	CLEARWATER FL	DTVPLN -NPLN0246

Analysis of current record

Channel	Call	City/State	Application Ref. No.
22	WCLF	CLEARWATER FL	BLCT -20000124AAX

Proposal causes no interference

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Analysis of Interference to Affected Station 13

DTV Baseline Analysis

Channel	Call	City/State	Application Ref. No.
15	WBBH-DT	FORT MYERS FL	DTVPLN -DTVP0157

NTSC Baseline Analysis

Channel	Call	City/State	Application Ref. No.
20	WBBHTV	FORT MYERS FL	DTVPLN -NPLN0242

Analysis of current record

Channel	Call	City/State	Application Ref. No.
15	WBBH-TV	FORT MYERS FL	OTHER -SKK315

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TABLE V  
DTV COVERAGE DATA  
WBBH-DT, FORT MYERS, FLORIDA  
FEBRUARY 2002

<u>Radial</u> N ° E, T	<u>Average*</u> <u>Elevation</u> <u>3.2-16.1 km</u> km	<u>Effective</u> <u>Height</u> meters	<u>Distance to F(50,90) Contour</u>	
			<u>41 dBu</u> km	<u>48 dBu</u> km
0	11.4	450.4	110.6	95.2
45	14.1	447.7	110.3	95.0
90	11.0	450.8	110.6	95.2
135	6.8	455.0	110.9	95.5
180	5.3	456.5	111.1	95.6
225	7.6	454.2	110.9	95.5
270	7.0	454.8	110.9	95.5
315	11.2	450.6	110.6	95.2
207	6.8	455.0	111.0	95.6

\*Based on NGDC 3-second terrain data base

DTV Channel 15 (476-482 MHz)  
Average Elevation 3 to 16 km 9.3 meters AMSL  
Center of Radiation 461.8 meters AMSL  
Antenna Height Above Average Terrain 453 meters  
Effective Radiated Power 1000 kW

NAD-27

North Latitude: 26° 49' 21"  
West Longitude: 81° 45' 47"

ABOVE MEAN SEA LEVEL

ABOVE GROUND

472.1 m.

461.2 m.

461.1 m. C/R

450.9 m. C/R

WBBH-DT ANTENNA

PAINTING AND LIGHTING  
WILL BE IN ACCORDANCE  
WITH F.A.A. REGULATIONS.

NEW GUYED TOWER

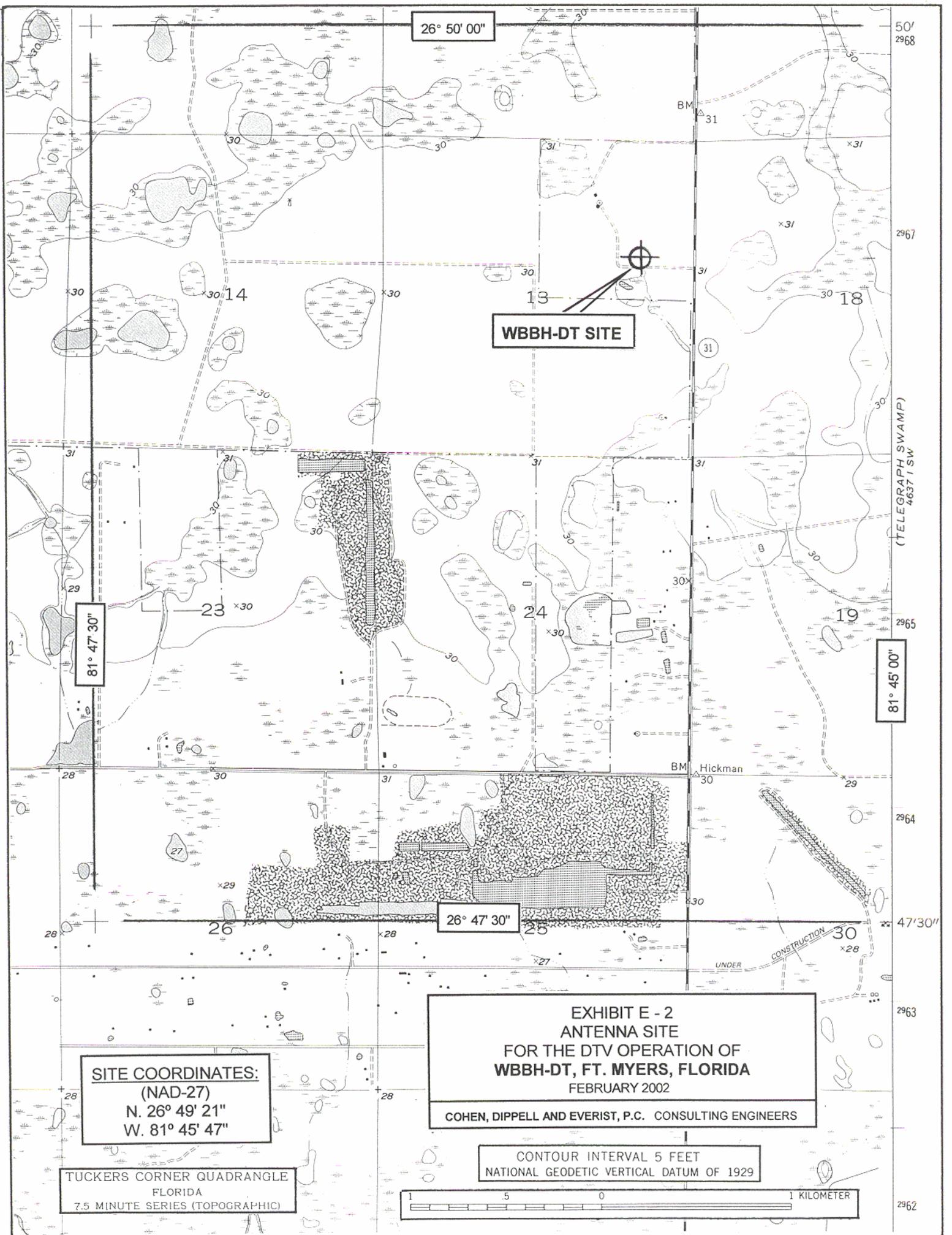
10.9 m.

0.0 m.

(NOT TO SCALE)

EXHIBIT E - 1  
VERTICAL SKETCH  
FOR THE PROPOSED **DTV** OPERATION OF  
**WBBH-DT, FT. MYERS, FLORIDA**  
FEBRUARY 2002

COHEN, DIPPELL and EVERIST, P.C. CONSULTING ENGINEERS



26° 50' 00"

50'  
2968

**WBBH-DT SITE**

2967

(TELEGRAPH SWAMP)  
4637 I SW

2965

81° 45' 00"

2964

47'30"

2963

2962

81° 47' 30"

26° 47' 30"

**EXHIBIT E - 2  
ANTENNA SITE  
FOR THE DTV OPERATION OF  
WBBH-DT, FT. MYERS, FLORIDA  
FEBRUARY 2002**  
COHEN, DIPPELL AND EVERIST, P.C. CONSULTING ENGINEERS

**SITE COORDINATES:  
(NAD-27)  
N. 26° 49' 21"  
W. 81° 45' 47"**

TUCKERS CORNER QUADRANGLE  
FLORIDA  
7.5 MINUTE SERIES (TOPOGRAPHIC)

CONTOUR INTERVAL 5 FEET  
NATIONAL GEODETIC VERTICAL DATUM OF 1929



