

TECHNICAL EXHIBIT
DISPLACEMENT RELIEF APPLICATION
LPTV STATION KDOS-LP
FACILITY ID 129078
GLOBE, ARIZONA
CH 50 9.95 KW (MAX-DA)

Technical Narrative

The technical exhibit of which this narrative is part was prepared in support of a displacement relief application for LPTV station KDOS-LP on channel 53 at Globe, Arizona (Facility ID: 129078; File No. BNPTTL-20000831BOB).

Specifically, this application proposes to modify the KDOS-LP CP operation by changing channel, transmitter site location, and directional antenna system. In addition, it is proposed to increase the maximum directional effective radiated power (ERP) toward the radio horizon from 3 kilowatts to 9.95 kilowatts¹, and also increase the antenna radiation center height above mean sea level (RCAMSL). No other changes are proposed. Pursuant to Section 73.3572 of the FCC rules, this application is considered a minor change application as the station is authorized on an out of core channel (Chs. 52-69) and is proposing to move to an in-core(50).

The proposed site is located 3.7 km within the geographically restricted Phoenix, AZ area applicable to LPTV, TV translator and Class A TV applications filed during the July 31 to August 4, 2000 auction filing window. It is also located 1.8 kilometers within the geographically restricted Tucson, AZ area. Thus, waivers of the Phoenix and Tucson geographic restrictions are requested based on terrain shielding.

It is proposed to operate on channel 50 (686-692 MHz) with a "plus" carrier frequency offset and employing an Andrew ALP4L1-HSM directional antenna. The maximum directional ERP will be 9.95 kW. The antenna will be mounted at the 28 meter (92 foot) level on an existing 49 meter tower. The tower does not

¹ It is noted that KDOS-LP currently operates with a maximum directional ERP of 3 kilowatts toward the radio horizon and 10 kilowatts in any horizontal or vertical angle. Thus, the KDOS-LP proposal will increase its ERP toward the radio horizon, but the maximum ERP in any horizontal or vertical angle will be slightly decreased from 10 kilowatts to 9.95 kilowatts.

require registration as its overall height is less than 200 feet and it passes the FCC's TOWAIR program. Figure 8 is a summary of the FCC's TOWAIR Determination Results for the existing tower.

Minor Change Application

Figure 5 depicts the authorized and herein proposed 74 dBu contours for KDOS-LP. As indicated, the proposed 74 dBu contour encompasses a majority of the authorized 74 dBu contour. Therefore, the proposed modification is considered a "minor" change in facilities pursuant to Section 73.3572.

Waivers of Geographic Restrictions Based on Terrain Shielding

The proposed KDOS-LP transmitter site is located 117.3 kms (72.9 miles) from the Phoenix, AZ reference point (N33°27'12", W112°04'28"), whereas the auction filing window specified a minimum distance of 121 km (75 miles). The FCC has indicated that waivers will be granted where it can be demonstrated that the proposed facilities are completely shielded by terrain barriers from the applicable television market. The Mazatzal and Pinal Mountains are located between Phoenix and Globe. Therefore, a waiver of the geographic restriction is requested based on terrain shielding. A terrain study has been prepared based on the procedures outlined in Commission Policy Regarding Terrain Shielding, 3 FCC Rcd 7105 (1988).

Figure 1 is a terrain relief map which depicts the 74 dBu coverage contour for the proposed KDOS-LP channel 50 operation at Globe. The contour location is based on the FCC's standard prediction method. In addition, the map depicts the Phoenix reference point along with five radials from the Phoenix reference point towards the proposed 74 dBu contour, namely, a radial through the proposed site at 99° true and additional radials towards the proposed KDOS-LP 74 dBu contour at 83°, 93°, 103° and 113° true. Sheets 1 through 5 of Figure 2 are terrain profiles along the 83°, 93°, 99°, 103° and 113° true radials, respectively. The terrain was derived using the Defense Mapping Agency's 3-second digitized terrain database. Also shown are the locations of the 74 dBu contour along each radial and the "direct" line-of-sight path drawn from the Phoenix reference point and the most distant point on the 74 dBu contour. It is apparent that the effect of "terrain shielding" caused by the

intervening mountains would be significant. Therefore, it is believed that the proposed facilities would be shielded from the Phoenix television market by the intervening mountains.

The proposed KDOS-LP transmitter site is also located 119.2 kms (74.1 miles) from the Tucson, AZ reference point (N32°13'15", W110°58'08"), whereas the auction filing window specified a minimum distance of 121 km (75 miles). The FCC has indicated that waivers will be granted where it can be demonstrated that the proposed facilities are completely shielded by terrain barriers from the applicable television market. The Tortolita and Santa Catalina Mountains are located between Tucson and Globe. Therefore, a waiver of the geographic restriction is requested based on terrain shielding. A terrain study has been prepared based on the procedures outlined in Commission Policy Regarding Terrain Shielding, 3 FCC Rcd 7105 (1988).

Figure 3 is a terrain relief map which depicts the 74 dBu coverage contour for the proposed KDOS-LP channel 50 operation at Globe. The contour location is based on the FCC's standard prediction method. In addition, the map depicts the Tucson reference point along with five radials from the Tucson reference point towards the proposed 74 dBu contour, namely, a radial through the proposed site at 6.3° true and additional radials towards the proposed KDOS-LP 74 dBu contour at 354°, 4°, 14° and 24° true. Sheets 1 through 5 of Figure 4 are terrain profiles along the 354°, 4°, 6.3°, 14° and 24° true radials, respectively. The terrain was derived using the Defense Mapping Agency's 3-second digitized terrain database. Also shown are the locations of the 74 dBu contour along each radial and the "direct" line-of-sight path drawn from the Tucson reference point and the most distant point on the 74 dBu contour. It is apparent that the effect of "terrain shielding" caused by the intervening mountains would be significant. Therefore, it is believed that the proposed facilities would be shielded from the Tucson television market by the intervening mountains.

Response to Paragraph 13(a) - TV Broadcast Station Protection

A study has been conducted using the provisions of Section 74.705 which indicates that the proposed KDOS-LP operation will not create prohibited interference to other existing, authorized or proposed NTSC full-power stations except

with respect to NTSC station KPPX on channel 51 at Tolleson, Arizona. However, interference calculations were made based on OET Bulletin No. 69 and it was determined that the proposal will not create any interference to NTSC station KPPX (see Figure 6).

Response to Paragraph 13(b) - DTV Station Protection

Calculations based on OET Bulletin No. 69 indicate that the proposed KDOS-LP operation on channel 50 complies with the FCC's 0.5% interference threshold criteria to all allotted, proposed or actual DTV operating facilities on channels 49, 50 and 51 (see Figure 6).

Response to Paragraph 13(c)-LPTV/TV Translator/Class A Protection

A study has been conducted using the provisions of Section 74.707 which indicates that the KDOS-LP proposal is involved in contour overlap with LPTV stations K50DZ on channel 50 at Fort Apache, Arizona and K50FV on channel 50 at Tucson, Arizona. However, interference calculations were made based on OET Bulletin No. 69 and it was determined that the proposal will not create prohibited interference to either of these stations (see Figure 6).

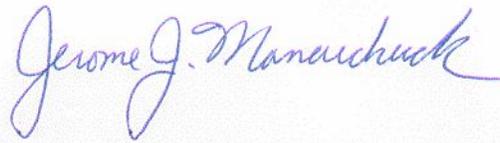
Response to Paragraph 14 - Environmental Protection Act

The proposed KDOS-LP facilities were evaluated in terms of potential radiofrequency radiation exposure at ground level in accordance with OST Bulletin No. 65, "Evaluating Compliance With FCC-Specified Guidelines for Human Exposure to Radiofrequency Radiation."² The calculated power density at the base of the tower was calculated using the appropriate equation in the Bulletin. As shown on Figure 7 (antenna vertical plane relative field pattern), the maximum vertical relative field for depression angles towards the tower base (-60° to -90°) is less than 0.3. Therefore, using a vertical relative field value of 0.3, a maximum directional effective radiated power of 9.95 kW, 10 percent aural power, and an antenna center of radiation height above ground level of 28 meters, the calculated power density at two meters above ground level at the base of the tower is 0.0221

² See *Report and Order* in ET Docket 93-62, FCC 96-326, adopted August 1, 1996, 11 FCC Rcd 15123 (1997). See also *First Memorandum Opinion and Order*, ET Docket 93-62, FCC 96-487, adopted December 23, 1996, 11 FCC Rcd 17512 (1997), and *Second Memorandum Opinion and Order and Notice of Proposed Rulemaking*, ET Docket 93-62, FCC 97-303, adopted August 25, 1997.

mW/cm², or 4.82 percent of the Commission's recommended limit applicable to general population/uncontrolled exposure areas (0.46 mW/cm² for TV channel 50). Therefore, based on the responsibility threshold of 5%, the proposal will comply with the FCC's RF emission rules.

Access to the transmitting site will be restricted and appropriately marked with warning signs. Furthermore, as this is a multi-user site, an agreement will be in effect in the event that workers or other authorized personnel enter the restricted area or climb the tower to ensure that 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 reduced power or shut down.

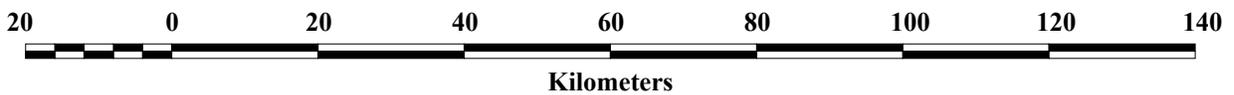
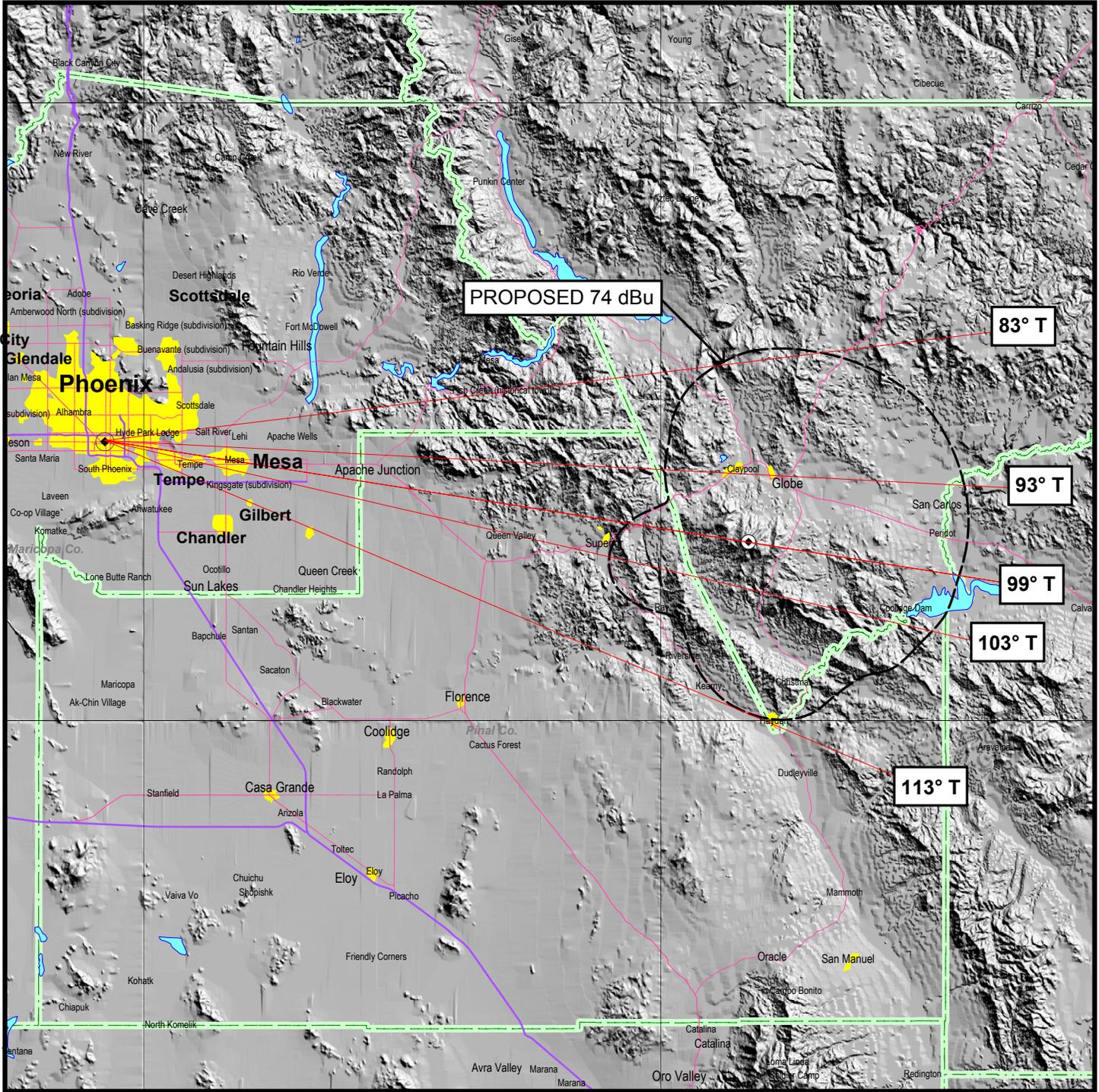


Jerome J. Manarchuck

du Treil, Lundin & Rackley, Inc.
201 Fletcher Avenue
Sarasota, Florida 34237

January 19, 2006

Figure 1



TERRAIN SHIELDING WAIVER
LPTV STATION KDOS-LP
GLOBE, ARIZONA
CH 50 9.95 kW (DA)

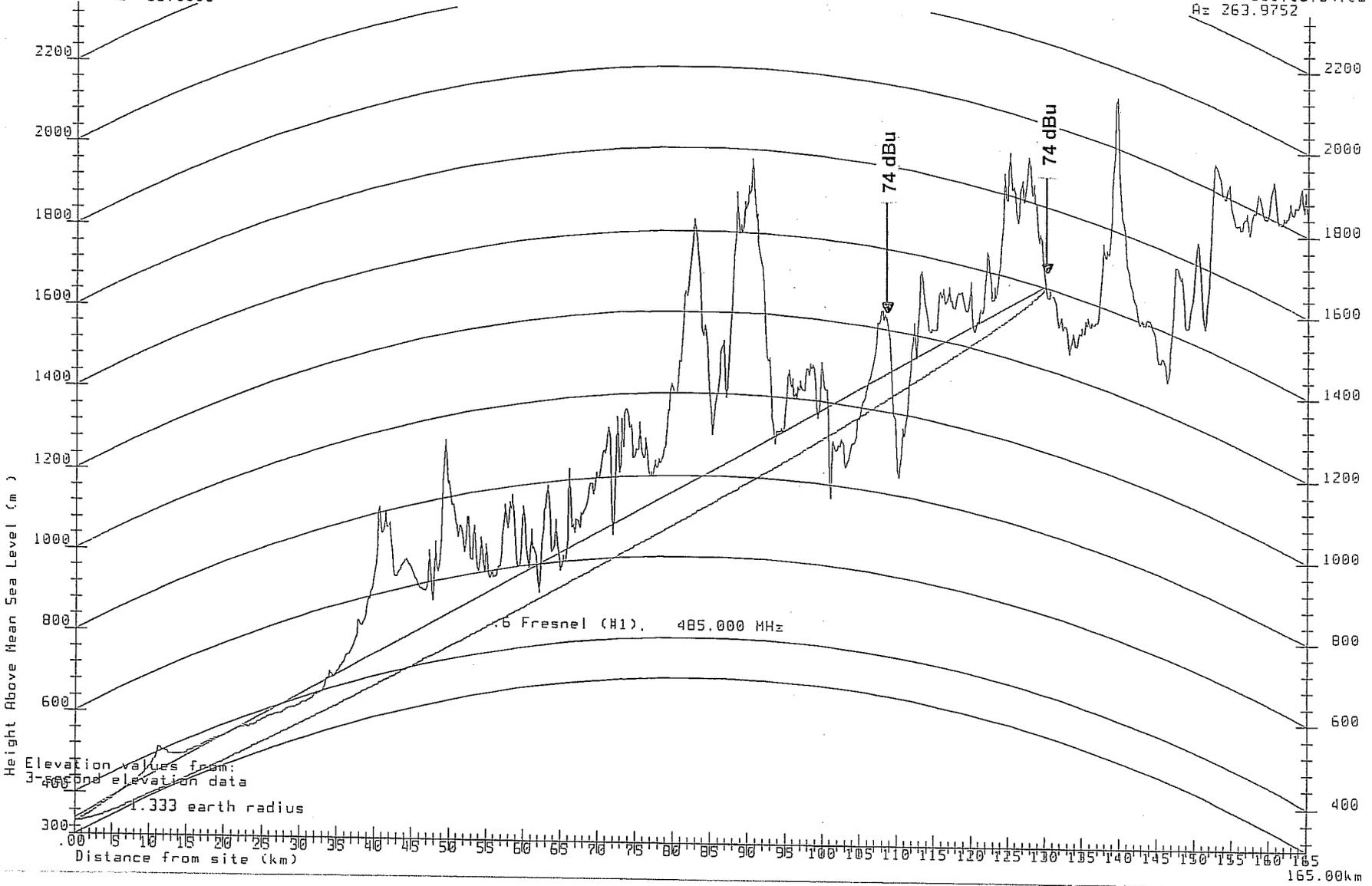
du Treil, Lundin & Rackley, Inc. Sarasota, Florida

PHOENIX

33:27:12.0N 331.00 MSL + 9.10 AGL
112:04:28.0W 340.10 MSL
Az 03.0000

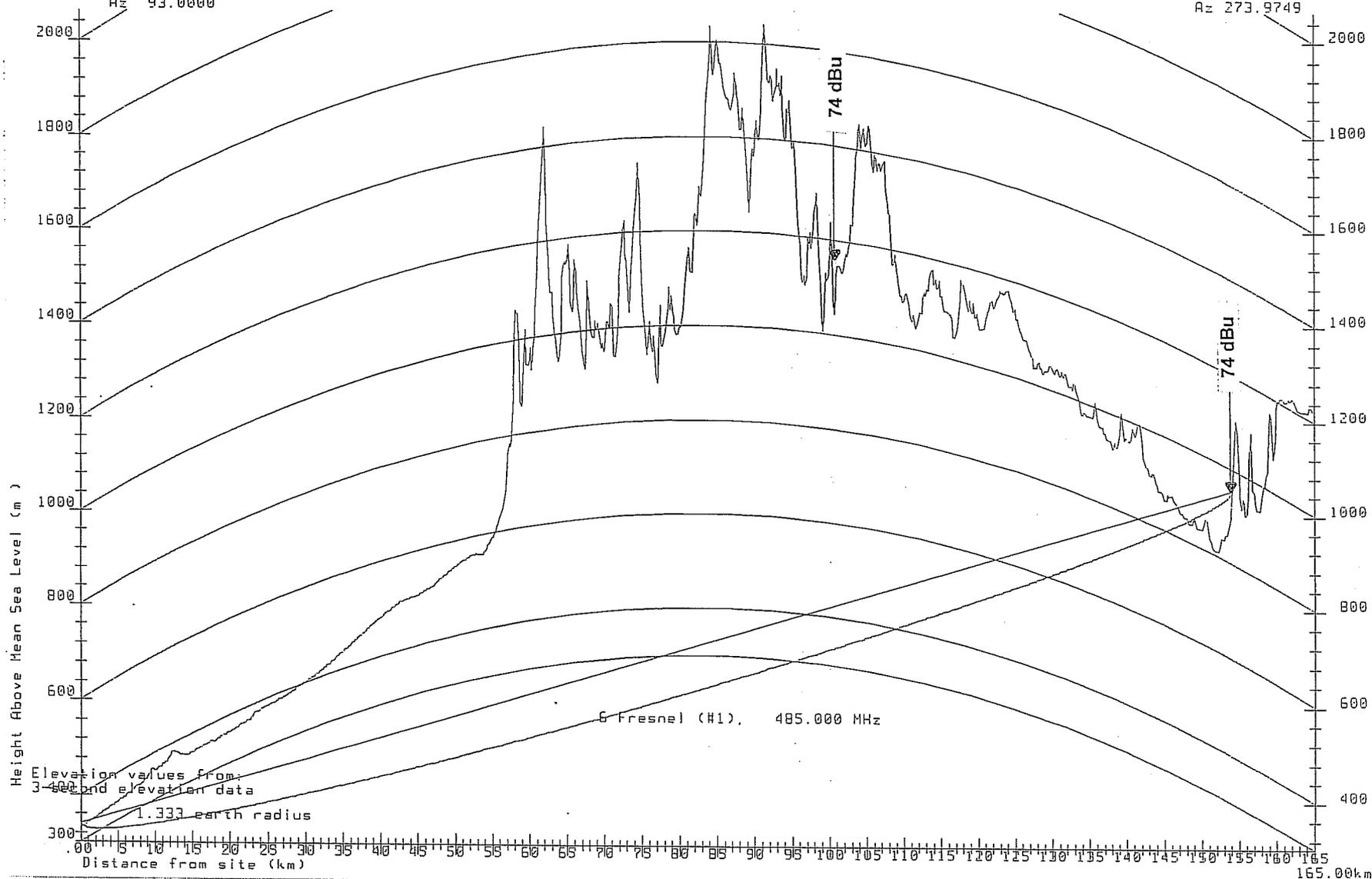
KDOS-LP 74 dBu Contour

33:37:19.5N
110:18:34.0W
Az 263.9752



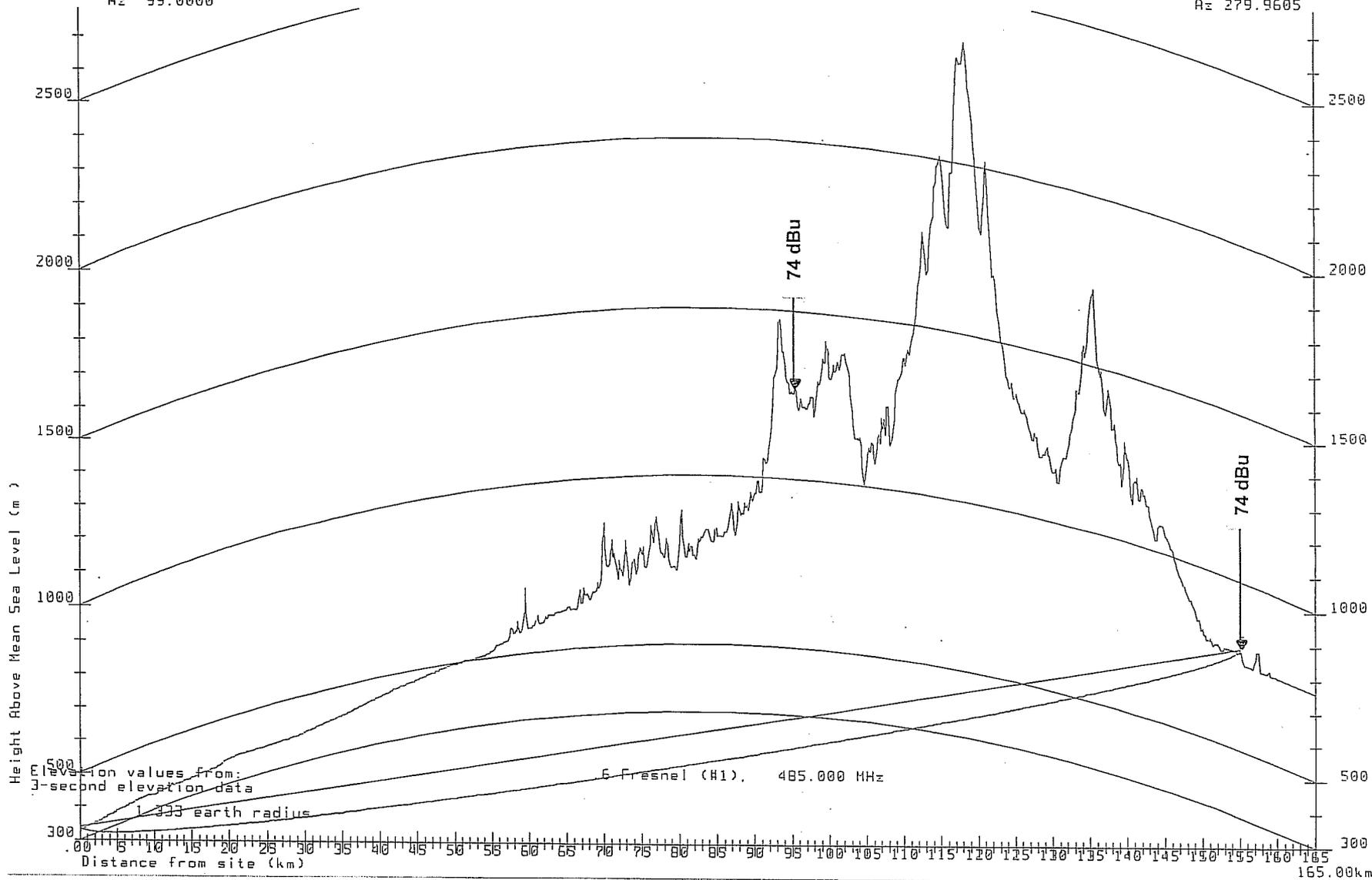
PHOENIX
33:27:12.0N 331.00 MSL + 9.10 AGL
112:04:28.0W 340.10 MSL
Az 93.0000

KDOS-LP 74 dBu Contour
33:21:46.2N
110:18:14.1W
Az 273.9749



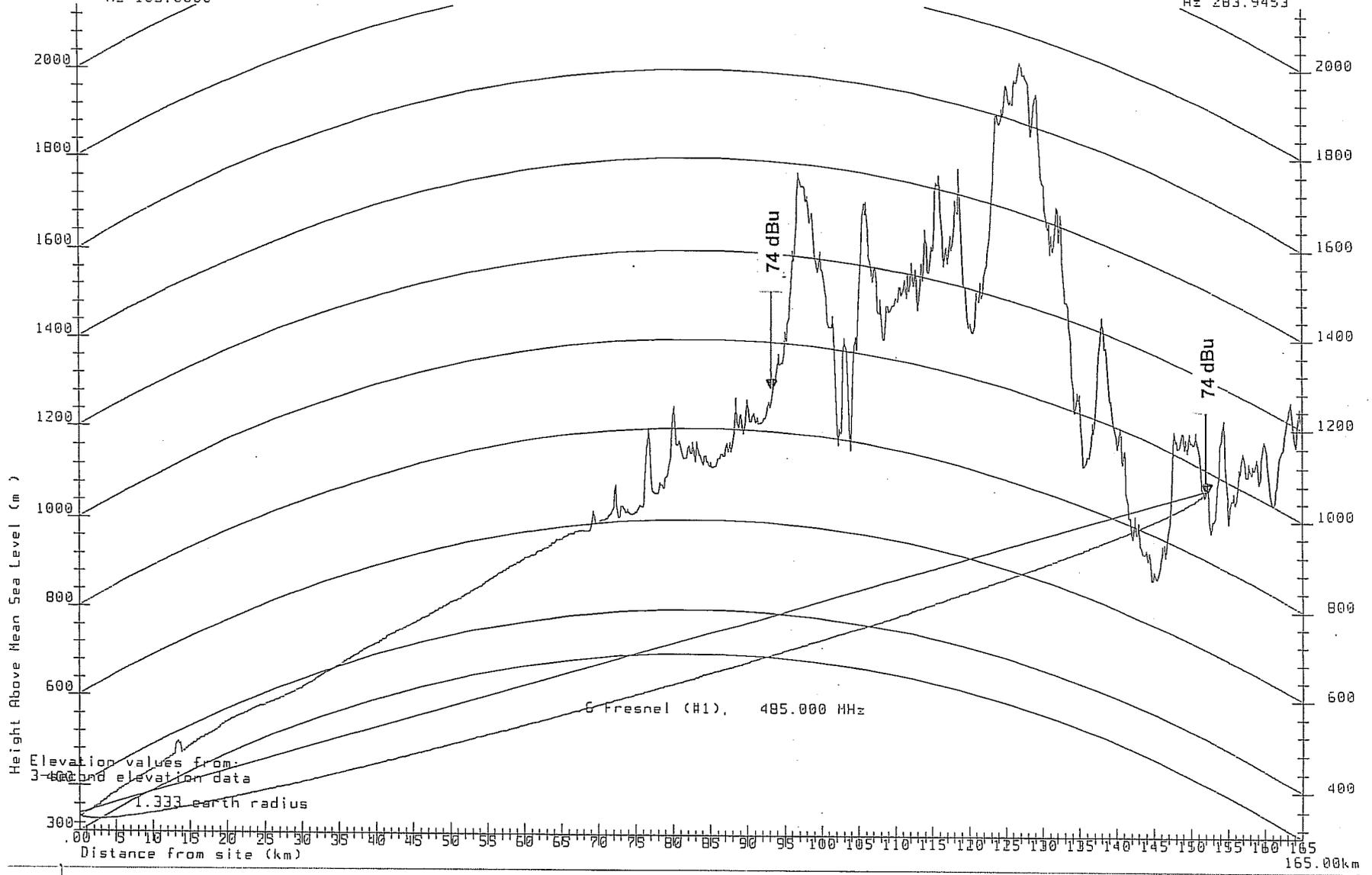
PHOENIX
 33:27:12.0N 331.00 MSL + 9.10 AGL
 112:04:28.0W 340.10 MSL
 Az 99.0000

KDOS-LP 74 dBu Contour.
 33:12:29.8N
 110:19:35.0W
 Az 279.9605



PHOENIX
33:27:12.0N 331.00 MSL + 9.10 AGL
112:04:28.0W 340.10 MSL
Az 103.0000

KDOS-LP 74 dBu Contour
33:06:24.1N
110:21:07.1W
Az 283.9453



PHOENIX
33:27:12.0N 331.00 MSL + 9.10 AGL
112:04:28.0W 340.10 MSL
Az 113.0000

KDOS-LP 74 dBu Contour
32:51:41.0N
110:27:06.1W
Az 293.8875

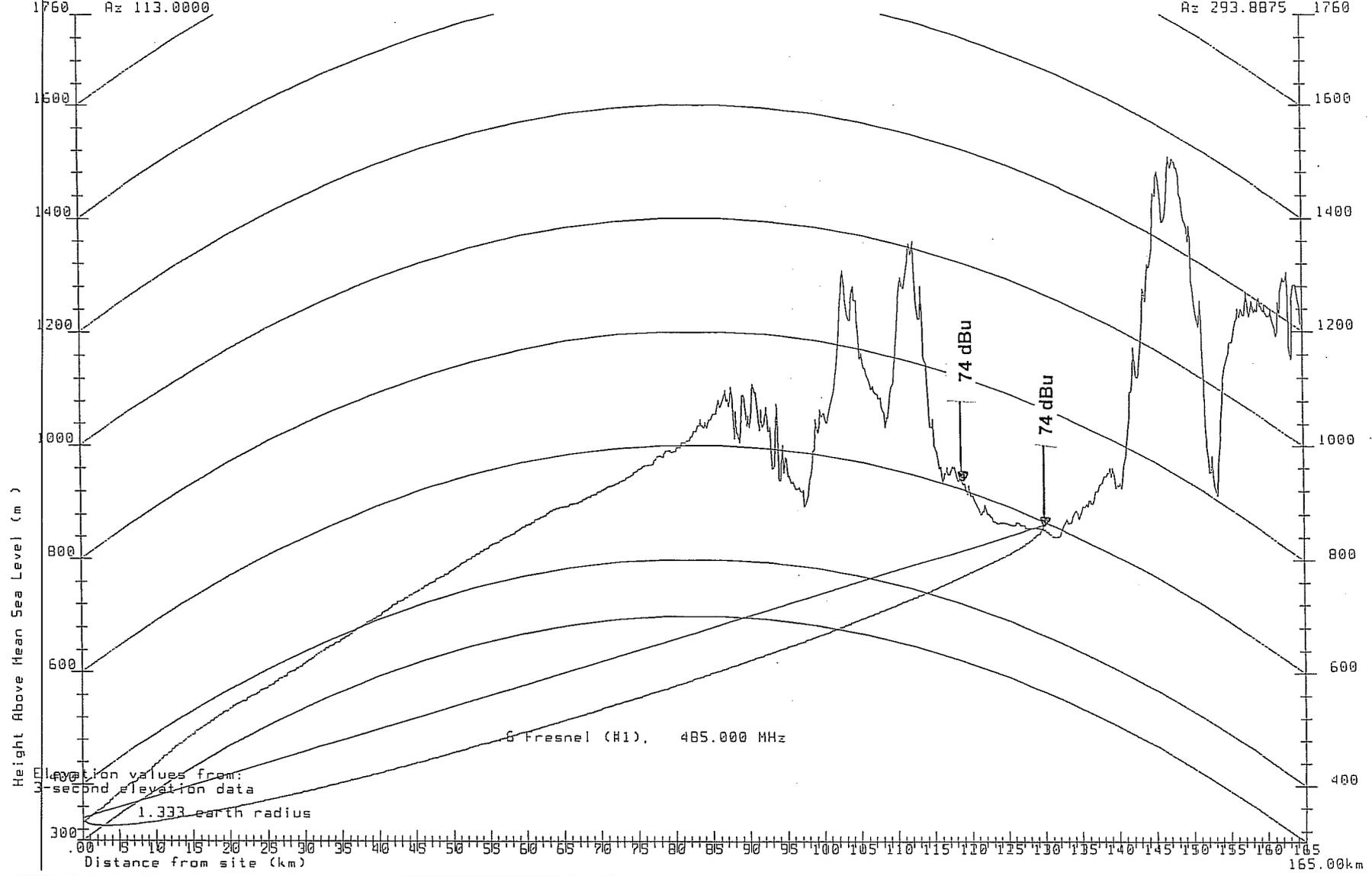
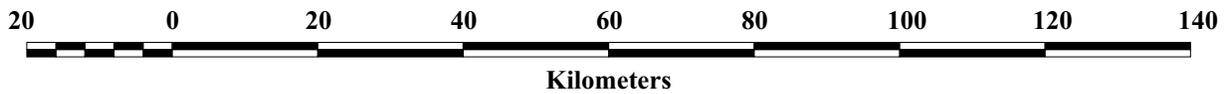
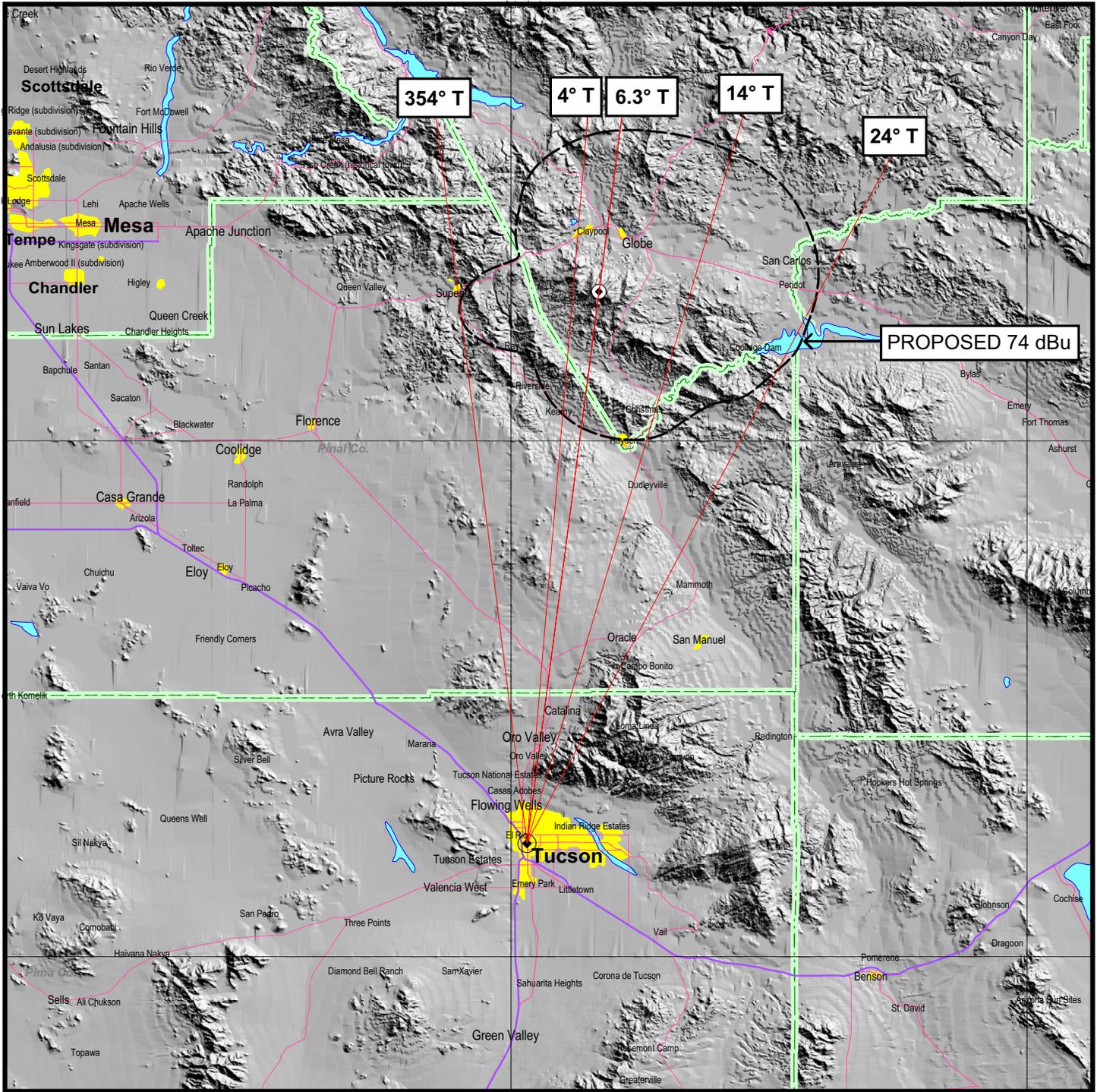


Figure 3



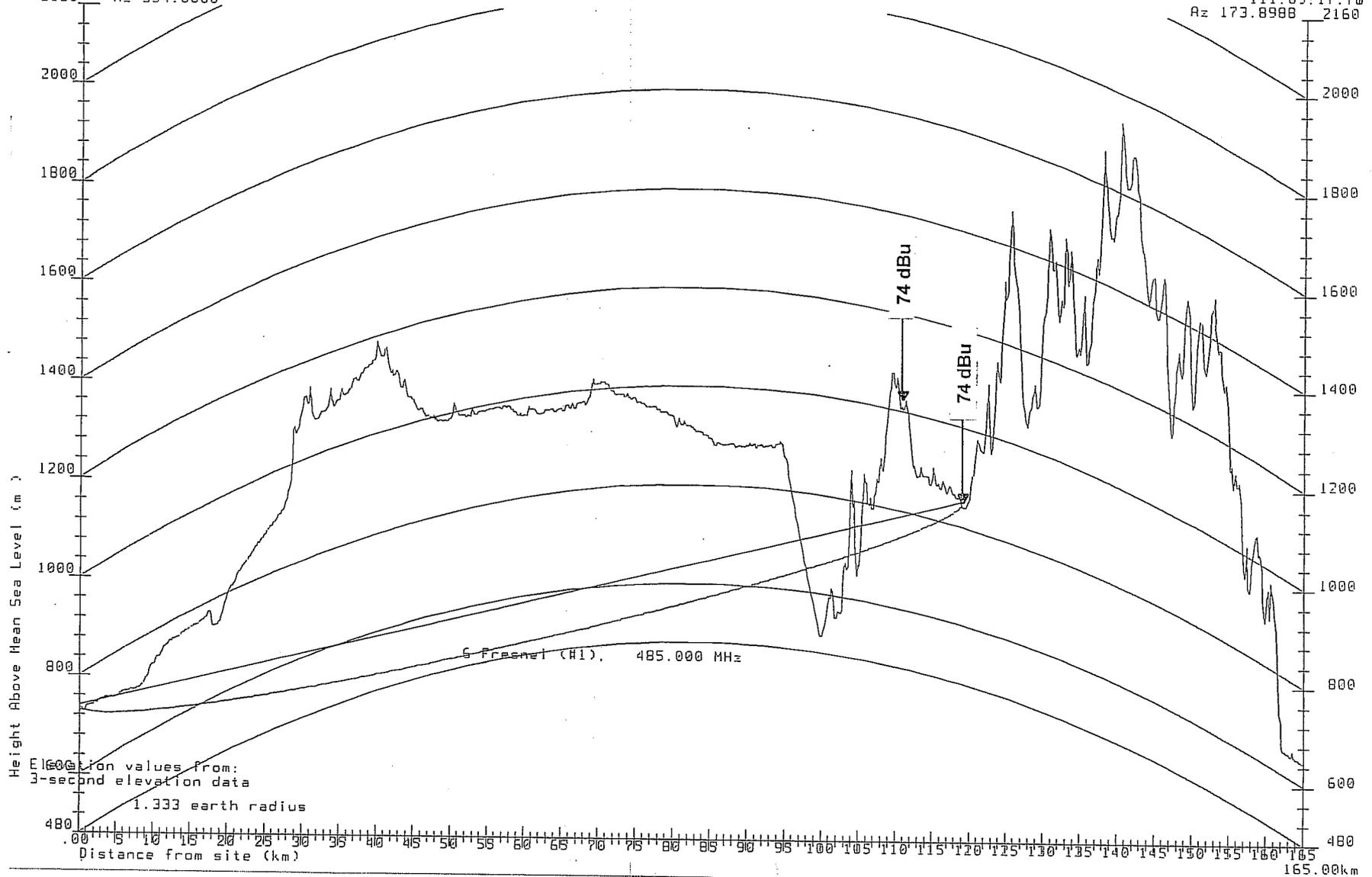
TERRAIN SHIELDING WAIVER

LPTV STATION KDOS-LP
GLOBE, ARIZONA
CH 50 9.95 kW (DA)

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

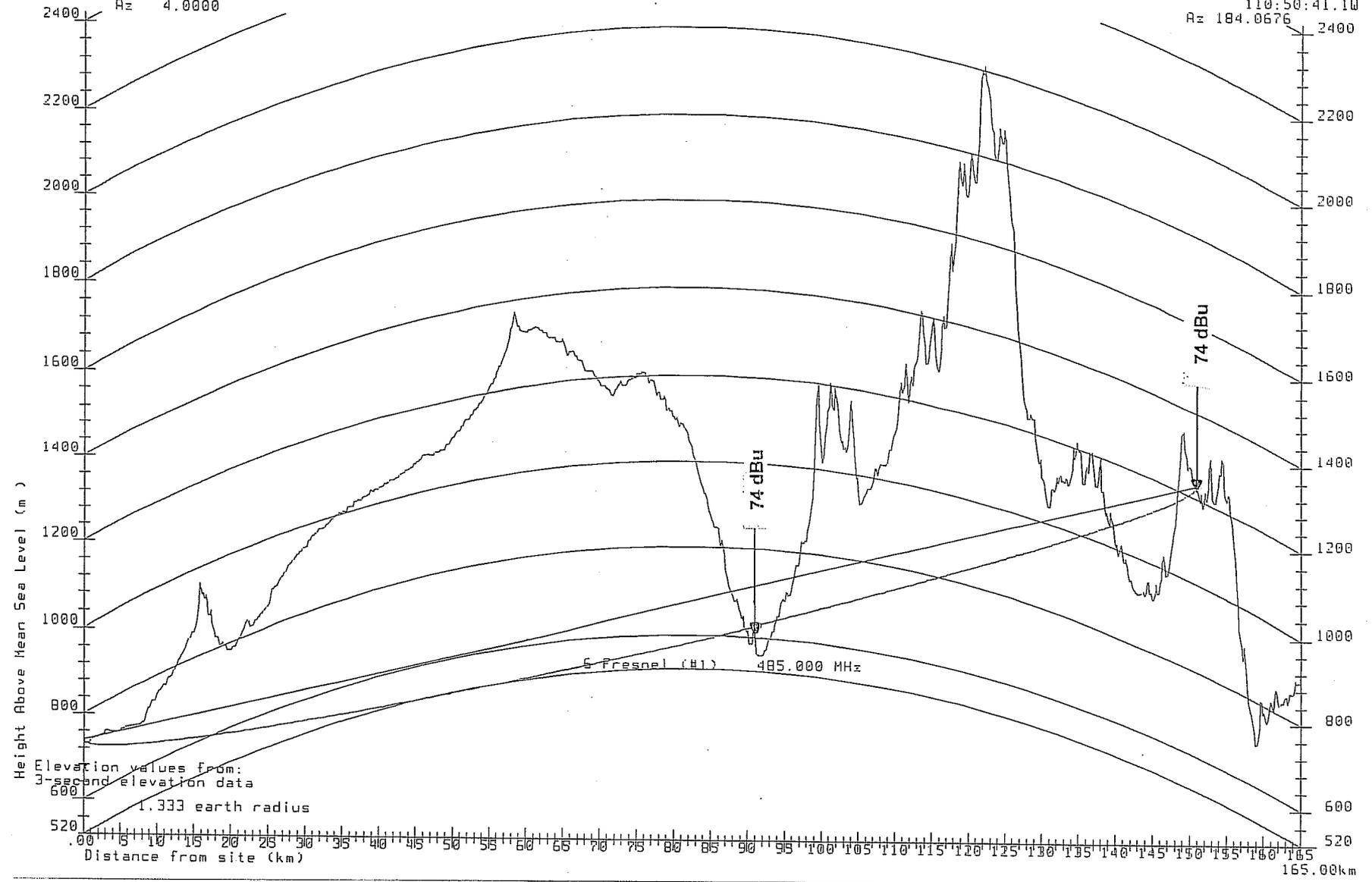
TUCSON
32:13:15.0N 730.10 MSL + 9.10 AGL
110:58:08.0W 739.20 MSL
2160 Az 354.0000

KDOS-LP 74 dBu Contour
33:42:01.2N
111:09:17.7W
Az 173.8988 2160



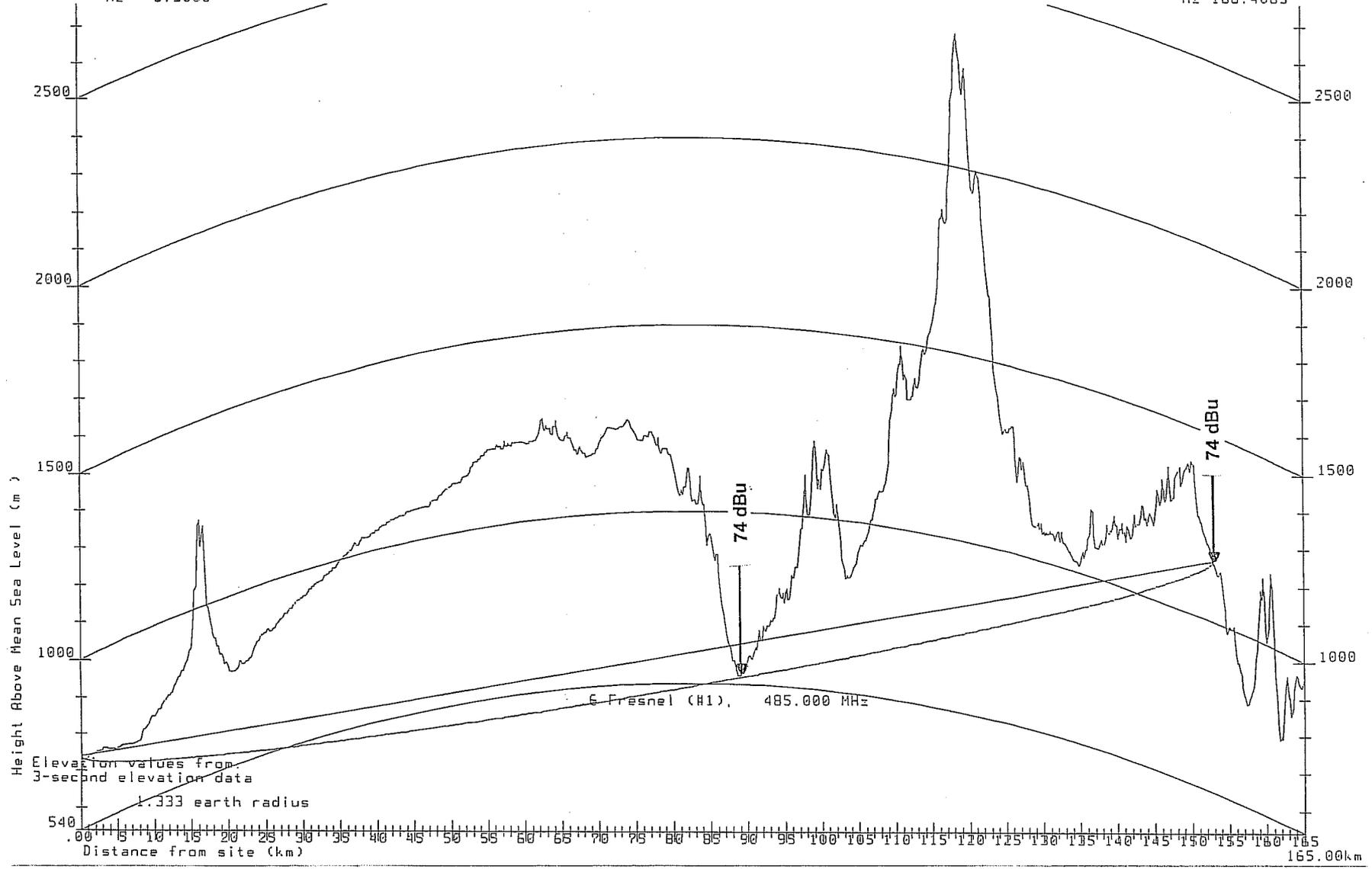
TUCSON
32:13:15.0N 730.10 MSL + 9.10 AGL
110:58:08.0W 739.20 MSL
Az = 4.0000

KDOS-LP 74 dBu Contour
33:42:17.7N
110:50:41.1W
Az = 184.0676



1UC5UN
32:13:15.0N 730.10 MSL + 9.10 AGL
110:58:08.0W 739.20 MSL
Az 6.3000

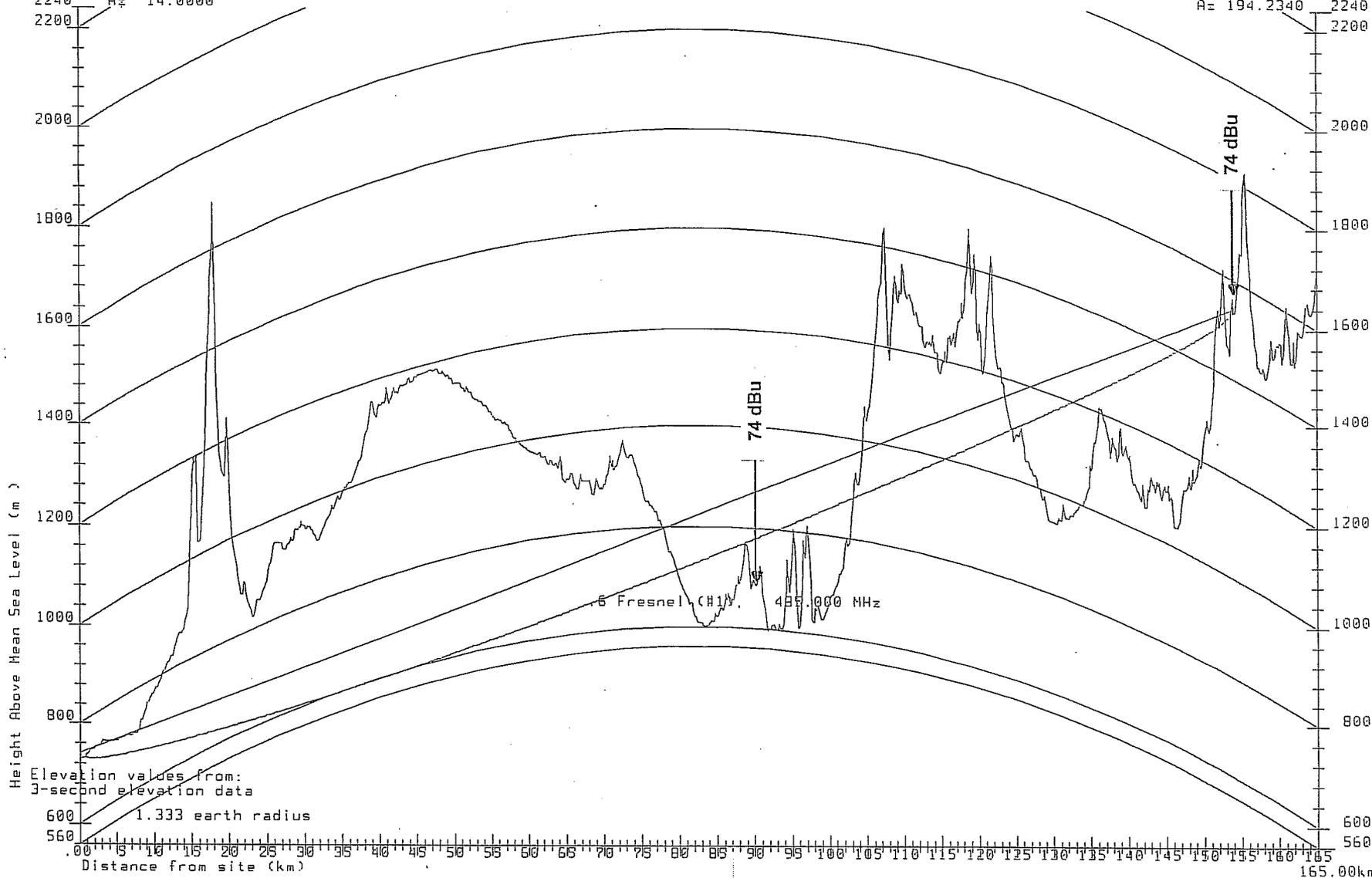
KDOS-LP 74 dBu Contour
33:41:58.1N
110:46:25.0W
Az 186.4063



TUCSON
32:13:15.0N 730.10 MSL + 9.10 AGL
110:58:00.0W 739.20 MSL
2240 A_z 14.0000

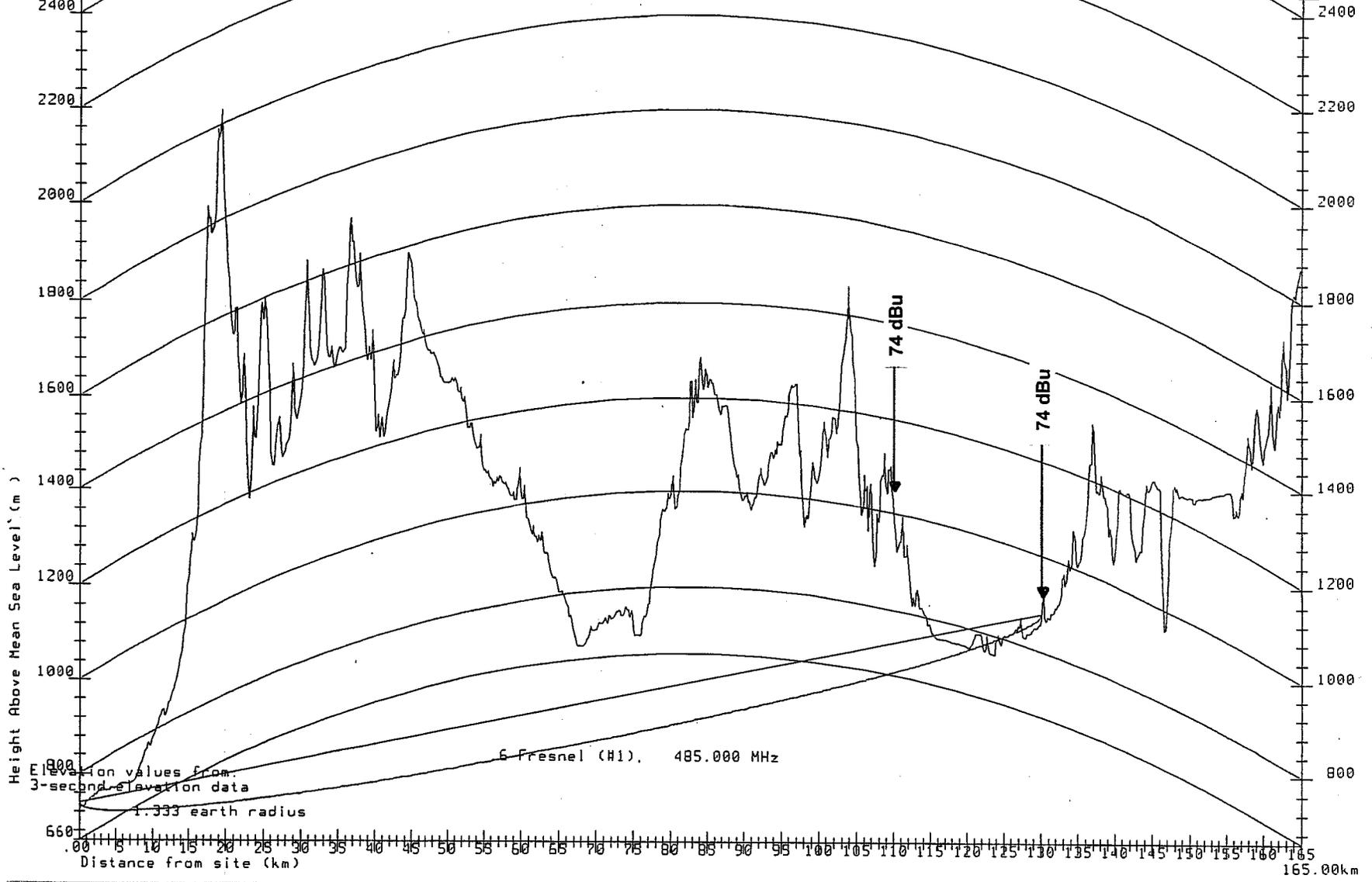
KDOS-LP 74 dBu Contour

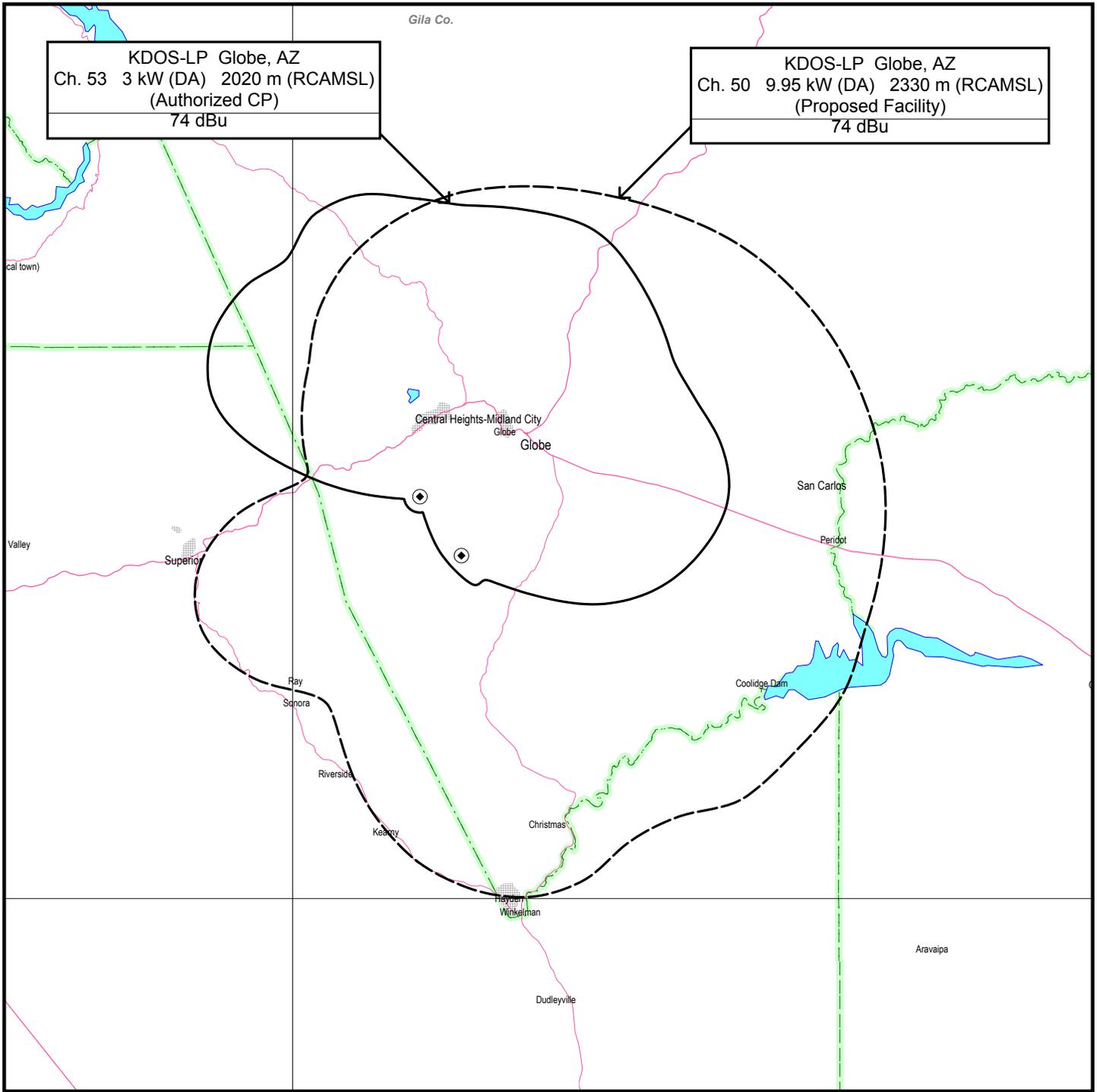
33:39:49.3N
110:32:18.8W
A = 194.2340 2240



TUCSDN
32:13:15.0N 730.10 MSL + 9.10 AGL
110:58:00.0W 739.20 MSL
2440 Az 24.0000

KDOS-LP 74 dBu Contour
33:34:40.6N
110:14:45.9W
Az 204.3926 2440





FCC PREDICTED 74 dBu COVERAGE CONTOURS

LPTV STATION KDOS-LP
GLOBE, ARIZONA

CH 50 9.95 KW (MAX-DA) 2330 M (RCAMSL)

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

OET-69 INTERFERENCE ANALYSIS

TV INTERFERENCE and SPACING ANALYSIS PROGRAM

1990 Census data selected

Date: 12-15-2005 Time: 18:30:07

Record Selected for Analysis

KDOS-LP USERRECORD-01 GLOBE AZ US
Channel 50 ERP 9.95 kW HAAT 1113. m RCAMSL 02330 m
Latitude 033-17-21 Longitude 0110-49-45
Status APP Zone 2 Border Offset +
Dir Antenna Make CDB Model 00000000016942 Beam tilt N Ref Azimuth 80.
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

Not full service station

Facility meets maximum power limit

Azimuth (Deg)	ERP (kW)	HAAT (m)	74.0 dBu F(50,50) (km)
0.0	3.727	1113.5	34.2
45.0	7.662	1104.7	39.4
90.0	9.732	950.1	39.2
135.0	5.657	801.3	33.3
180.0	0.205	1107.5	15.3
225.0	0.021	1035.7	5.8
270.0	0.045	1048.9	8.2
315.0	0.040	796.8	7.3

Contour Overlap Evaluation from LPTV Station to Full Service TV & DTV

Contour overlap to station

KPPX 51 TOLLESON AZ BLCT 19990226KH

Contour Overlap Evaluation from LPTV to Full Service TV & DTV Complete

Contour Overlap Evaluation from LPTV Station to LPTV Stations

Contour overlap to station
K50DZ 50 FORT APACHE AZ BLTT 19961125JI

Contour overlap to station
K50FV 50 TUCSON AZ BLTT 20030414ABH

Contour Overlap Evaluation from LPTV to LPTV Stations Complete

Contour Overlap to Proposed Station

Station
K50DZ 50 FORT APACHE AZ BLTT19961125JI causes

Contour overlap to station
KDOS-LP 50 GLOBE AZ USERRECORD01

Contour Overlap Evaluation to Proposed Station Complete

Proposed facility OK to FCC Monitoring Stations

Proposed facility OK toward West Virginia quite zone

Proposed facility OK toward Table Mountain

Proposed facility is beyond the Canadian coordination distance

Proposed facility is within the Mexican coordination distance
Distance to border = 210.3km

Proposed station is OK toward AM broadcast stations

Start of Interference Analysis

Channel	Call	Proposed Station City/State	ARN
50	KDOS-LP	GLOBE AZ	USERRECORD01

Stations Potentially Affected by Proposed Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
50	K50DZ	FORT APACHE AZ	84.0	LIC	BLTT	-19961125JI
50	K50FV	TUCSON AZ	97.7	LIC	BLTT	-20030414ABH
51	KPPX	TOLLESON AZ	114.5	LIC	BLCT	-19990226KH

%%%

Analysis of Interference to Affected Station 1

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
50	K50DZ	FORT APACHE AZ	BLTT	-19961125JI

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
50	K50HU	FLAGSTAFF AZ	183.5	LIC	BLTTL	-20030807ACR
50	NEW	PRESCOTT AZ	181.9	APP	BNPTTL	-20000828AHZ
50	NEW	PRESCOTT AZ	181.9	APP	BNPTTL	-20000829AXJ
50	NEW	PRESCOTT AZ	208.6	APP	BNPTTL	-20000831CFD
50	NEW	PRESCOTT AZ	181.9	APP	BNPTTL	-20000828AQR
50	K50FV	TUCSON AZ	172.4	LIC	BLTT	-20030414ABH
50	KASY-TV	ALBUQUERQUE NM	385.2	LIC	BLCT	-20011102ABA
50	KDOS-LP	GLOBE AZ	84.0	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.
50	K50FV	TUCSON AZ	BLTT	-20030414ABH

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
42	KHRR-DT	TUCSON AZ	42.0	PLN	DTVPLN	-DTVP1182
42	KHRR	TUCSON AZ	42.0	CP	BPCDT	-19991028AFS
43	960710LC	COOLIDGE AZ	110.9	APP	BPET	-19960710LC
43	960709KP	COOLIDGE AZ	111.0	APP	BPET	-19960709KP
47	KXGR-DT	GREEN VALLEY AZ	0.1	PLN	DTVPLN	-DTVP1351
47	KUVE-TV	GREEN VALLEY AZ	0.1	CP	BPCDT	-20000501AEM
50	NEW	BISBEE AZ	125.9	APP	BNPTTL	-20000828AIX
50	KAJB	CALIPATRIA CA	390.9	APP	BPCDT	-19991101AEM
50	KAJB-DT	CALIPATRIA CA	391.0	PLN	DTVPLN	-DTVP1439
50	KDOS-LP	GLOBE AZ	97.7	APP	USERRECORD-01	

Proposal causes no interference

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Analysis of Interference to Affected Station 3

NTSC Baseline Analysis

Channel	Call	City/State	Application	Ref. No.
51	KAJW	TOLLESON AZ	DTVPLN	-NPLN1789

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
43	NEW	COOLIDGE AZ	51.5	PLN	DTVPLN	-NPLN1634
49	KASW-DT	PHOENIX AZ	0.2	PLN	DTVPLN	-DTVP1410
52	KAJW-DT	TOLLESON AZ	0.0	PLN	DTVPLN	-DTVP1499

Results for: 51N AZ TOLLESON		DTVPLN	NPLN1789	PLN
		POPULATION	AREA (sq km)	
within Noise Limited Contour		2224197	31446.6	
not affected by terrain losses		2208868	23201.3	
lost to NTSC IX		479	48.5	
lost to additional IX by ATV		0	0.0	
lost to all IX		479	48.5	

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
51	KPPX	TOLLESON AZ	BLCT	-19990226KH

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
43	960710LC	COOLIDGE AZ	51.6	APP	BPET	-19960710LC
43	960709KP	COOLIDGE AZ	51.5	APP	BPET	-19960709KP
49	KASW-DT	PHOENIX AZ	0.2	PLN	DTVPLN	-DTVP1410
49	KASW	PHOENIX AZ	0.2	CP MOD	BMPCDT	-20020531AAR
52	KAJW-DT	TOLLESON AZ	0.0	PLN	DTVPLN	-DTVP1499
50	KDOS-LP	GLOBE AZ	114.5	APP	USERRECORD-01	

Proposal causes no interference

#####

Analysis of Interference to Affected Station 4

Analysis of current record

Channel	Call	City/State	Application Ref. No.
50	KDOS-LP	GLOBE AZ	USERRECORD-01

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application Ref. No.
42	KHRR-DT	TUCSON AZ	118.7	PLN	DTVPLN -DTVP1182
42	KHRR	TUCSON AZ	118.7	CP	BPCDT -19991028AFS
43	960710LC	COOLIDGE AZ	85.0	APP	BPET -19960710LC
43	960709KP	COOLIDGE AZ	84.8	APP	BPET -19960709KP
47	KXGR-DT	GREEN VALLEY AZ	97.7	PLN	DTVPLN -DTVP1351
47	KUVE-TV	GREEN VALLEY AZ	97.7	CP	BPCDT -20000501AEM
49	KASW-DT	PHOENIX AZ	114.6	PLN	DTVPLN -DTVP1410
49	KASW	PHOENIX AZ	114.6	CP MOD	BMPCDT -20020531AAR
50	K50DZ	FORT APACHE AZ	84.0	LIC	BLTT -19961125JI
50	NEW	PRESCOTT AZ	196.8	APP	BNPTTL -20000829AXJ
50	K50FV	TUCSON AZ	97.7	LIC	BLTT -20030414ABH
50	KAJB	CALIPATRIA CA	372.9	APP	BPCDT -19991101AEM
50	KAJB-DT	CALIPATRIA CA	372.9	PLN	DTVPLN -DTVP1439
51	KPPX	TOLLESON AZ	114.5	LIC	BLCT -19990226KH
52	KAJW-DT	TOLLESON AZ	114.5	PLN	DTVPLN -DTVP1499

Total scenarios = 1

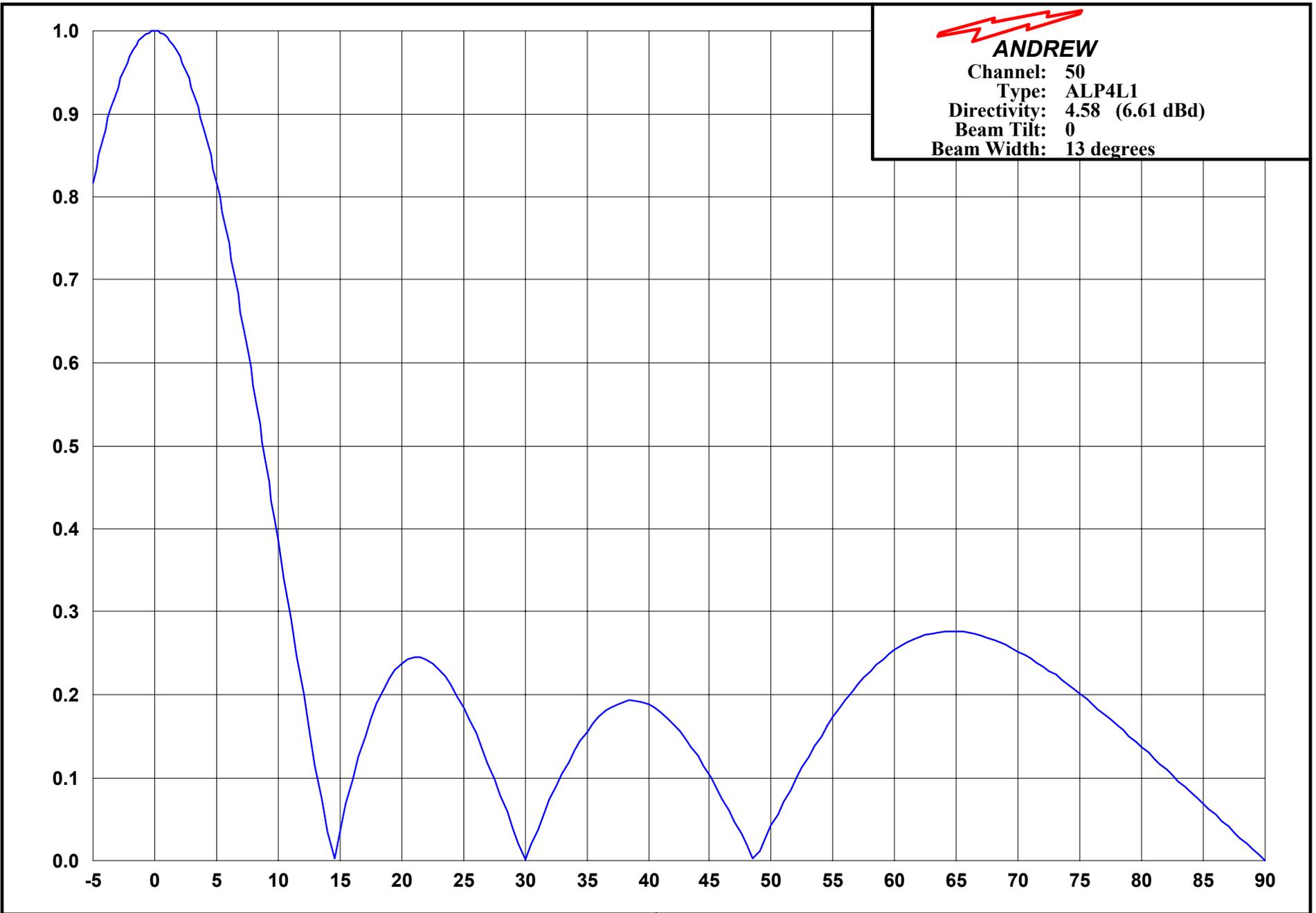
Result key: 1
 Scenario 1 Affected station 4
 Before Analysis

Results for: 50N AZ GLOBE	USERRECORD01	APP
	POPULATION	AREA (sq km)
within Noise Limited Contour	21415	2035.8
not affected by terrain losses	20563	1777.3
lost to NTSC IX	0	0.0
lost to additional IX by ATV	0	0.0
lost to all IX	0	0.0

Potential Interfering Stations Included in above Scenario 1

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Figure 7



ANDREW

Channel: 50

Type: ALP4L1

Directivity: 4.58 (6.61 dBd)

Beam Tilt: 0

Beam Width: 13 degrees

ANDREW CORPORATION
10500 W. 153rd Street
Orland Park, Illinois U.S.A. 60462

Company:
Site:
Proposal Number:

Author:

Date: 12/16/2005



Antenna Structure Registration

[FCC](#) > [WTB](#) > [ASR](#) > [Online Systems](#) > TOWAIR

[FCC Site Map](#)

TOWAIR Determination Results

[? HELP](#)

[New Search](#) [Printable Page](#)

*** NOTICE ***

TOWAIR's findings are not definitive or binding, and we cannot guarantee that the data in TOWAIR are fully current and accurate. In some instances, TOWAIR may yield results that differ from application of the criteria set out in 47 C.F.R. Section 17.7 and 14 C.F.R. Section 77.13. A positive finding by TOWAIR recommending notification should be given considerable weight. On the other hand, a finding by TOWAIR recommending either for or against notification is not conclusive. It is the responsibility of each ASR participant to exercise due diligence to determine if it must coordinate its structure with the FAA. TOWAIR is only one tool designed to assist ASR participants in exercising this due diligence, and further investigation may be necessary to determine if FAA coordination is appropriate.

DETERMINATION Results

Structure does not require registration. There are no airports within 8 kilometers (5 miles) of the coordinates you provided.

Your Specifications

NAD83 Coordinates

Latitude 33-17-21.0 north
Longitude 110-49-47.0 west

Measurements (Meters)

Overall Structure Height (AGL) 49
Support Structure Height (AGL) 49
Site Elevation (AMSL) 2302

Structure Type

TOWER - Free standing or Guyed Structure used for Communications Purposes

Tower Construction Notification

Notify Tribes and Historic Preservation Officers of your plans to build a tower.

Note: Notification does NOT replace [Section 106 Consultation](#).

ASR Help [ASR License Glossary](#) - [FAQ](#) - [Online Help](#) - [Documentation](#) - [Technical Support](#)

ASR Online