

TECHNICAL REPORT

This technical report has been developed in support of an amendment to an application (BNPFTB-20081022AAM) for a new FM booster for the licensed KHYZ facility.

I. Allocation Analysis:

The data for all terrain utilized in this report were obtained from the V-Soft 30 second database

Exhibit E1 demonstrates that the proposed KHYZ .370 kW booster meets all Commission Section 74.1203 requirements with respect to existing or protected facilities. The HAAT has been calculated over 12 evenly spaced radials to be 454 meters. The booster's 54 dBu will be contained within the KHYZ licensed 54 dBu as demonstrated in exhibits E2 and E2A. The proposed antenna is an ERI 1091-1CP-DA one bay directional panel antenna, and the rotated pattern is included as E3 followed by the manufacturer's original pattern documentation. The antenna has been rotated to 260 degrees True to produce the proposed pattern.

It is also noted that the proposed facility meets the required I.F. separation required for its equivalent class of C3 based on the ERP and HAAT.

II. Site:

The proposed facility will be located on an existing, non registered communications tower. A TOWERAIR study is attached demonstrating exemption from registration requirements. The site coordinates are:

(NAD 27) N 35-56-50 W 115-03-04

III. Antenna System and RF calculation:

The single bay panel antenna will be mounted at 24 meters AGL. The vertical pattern included as E3A has been used in the RF calculation, and the RF was calculated based on a worst case vertical factor of .260 at -85 degrees elevation.

The RF contribution of the proposed booster was calculated to be 2.9

Anderson Communications, LLC

Broadcast Consultants
1519 Euclid Avenue
Bowling Green, KY 42103

Telephone 270-782-0246
Fax 270-793-9129
Cell 270-535-4432

microwatts/cm2 at 2 meters AGL or 1.45% of the maximum 200 uwatts/cm2 for general public exposure and less than the 5% of the applicable limit required for consideration.

$$S \text{ (RF in microwatts/cm2)} = \frac{33.4 (F2 - \text{Vert Factor}) X (H \text{ ERP} + V \text{ ERP in watts})}{R^2 \text{ (distance to radiation center in meters)}}$$

IV. Conclusion:

It is concluded that the proposed KHYZ booster meets all applicable Commission rules and policies.



Charles M. Anderson December 19, 2008

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E1 KHYZ-2 AMENDMENT CHANNEL STUDY

REFERENCE
35 56 50.0 N.
115 03 04.0 W.

CH# 259C3 - 99.7 MHz, Pwr= 0.37 kW, HAAT= 450.8 M, COR= 1247 M
Average Protected F(50-50)= 30.13 km
Standard Directional

DISPLAY DATES
DATA 12-18-08
SEARCH 12-18-08

CH CITY	CALL	TYPE STATE	ANT AZI <--	DI ST FILE #	LAT LNG	PWR(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
259D Las Vegas	KHYZ-2	APP DC_ NV	30.8 210.8	7.8 BNPFTB20081022AAM	36 00 27.0 115 00 24.0	0.220	11.4 1039	3.6 Khwy, Inc.	-12.7*	-30.1(1)
259B Mountain Pass	KHYZ%	CP _CX CA	215.9 35.6	65.6 BPH20080403AAQ	35 28 05.0 115 28 32.0	50.000 150	176.6 1378	80.6 Khwy, Inc.	177.5R	-111.9M(2)
259B Mountain Pass	KHYZ%	LIC _C_ CA	222.2 41.9	68.3 BMLH20020228ADC	35 29 27.0 115 33 27.0	8.400 551	158.8 1864	73.0 Khwy, Inc.	177.5R	-109.2M(3)
259D Las Vegas	KHYZ-FM1	CP DC_ NV	30.8 210.8	7.8 BMPFTB20061027AAA	36 00 27.0 115 00 24.0	2.500	35.4 1039	10.1 Khwy, Inc.	-36.7*	-36.7*(4)
257CO Indian Springs	KRGTY%	LIC _CX NV	312.4 132.1	62.5 BLH20021203ACS	36 19 28.0 115 33 58.0	31.000 690	10.4 2661	90.8 Uni vi si on Radi o Li cense Co	80.5R	-18.0M(5)
257C Indian Springs	KRGTY%	RSV _N NV	308.0 127.5	86.2	36 25 18.0 115 48 35.0	100.000 600	3.2 2477	31.0 Uni vi si on Radi o Li cense Co	89.5R	-3.3M(5)
257D Las Vegas	KRGTY-FM1	LIC DC_ NV	31.2 211.2	7.9 BLFTB20050815AED	36 00 29.0 115 00 20.0	6.000	0.8 1027	6.2 Hbc Li cense Corporati on	-2.0*	1.6
205C Las Vegas	KNPR	CP _CX NV	273.0 92.7	40.5 BPED20061108AIA	35 57 55.0 115 29 58.8	22.000 1190	104.5 2639	71.9 Nevada Publ ic Radi o	30.5R	10.0M
205C Las Vegas	KNPR	LIC _C_ NV	273.3 93.0	40.7 BLED20031205AFO	35 58 02.0 115 30 06.0	24.500 1122	104.5 2573	71.9 Nevada Publ ic Radi o	30.5R	10.2M
261D Las Vegas	K261BZ	LIC DHN NV	261.5 81.2	40.5 BLFT19880429TA	35 53 34.0 115 29 40.0	0.165 560	0.6 1909	23.2 Hi ll top Church	11.1	15.9
260C St. George	RDEL«	DEL _ UT	48.0 229.0	205.9	37 10 27.0 113 19 34.0	100.000 600	146.2 1737	99.9 Smoke & Mi rrors, Li c Et. A	175.5R	30.4M
259D Las Vegas	K259BL	LIC _C_ NV	28.1 208.4	96.1 BLFT20080311ABT	36 42 33.0 114 32 35.0	0.050	36.1 710	10.8 Ondas De Vi da Network, Inc	50.6	49.7
259D Laughlin	650375	APP DH_ NV	156.4 336.6	94.2 BNPFT20030317KXH	35 10 08.0 114 38 05.0	0.079	2.7 454	1.6 Cameron Broadcasti ng, Inc.	80.0	50.3
259A Beatty	RADD«	ADD _ NV	304.8 123.8	195.0	36 56 05.0 116 51 00.0	6.000 100	93.9 1361	33.8 Kei lly Mi ller	141.5R	53.5M
259A Beatty	1197537«	RSV _ NV	304.8 123.8	195.0	36 56 05.0 116 51 00.0	6.000 100	93.9 1361	33.8 Kei lly Mi ller	141.5R	53.5M
259A Beatty	1197384«	APP _CX NV	304.8 123.8	195.0 BNPH20070727AHY	36 56 05.0 116 51 00.0	0.210 514	87.5 1774	29.7 Kei lly Mi ller	141.5R	53.5M

- (1) Existing application. Amendment proposed.
- (2) Main facility CP.
- (3) Licensed KHYZ facility.
- (4) KHYZ-FM1 booster for CP facility. Will not be activated until CP is buildt.
- (5) Second adjacent channel main and booster facilities. No protection required.

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E2
KHYZ LICENSED FACILITY
AND PROPOSED BOOSTER
54 DBU DEMONSTRATING
THAT THE BOOSTER'S
54 DBU (50,50) IS CONTAIN
WITHIN THE LICENSED CONTOUR.

KHYZ LICENSED 54 DBU

PROPOSED KHYZ-2 54 DBU

North Las Vegas

Las Vegas

Clark

East Las Vegas

Henderson

KHYZ-2.A

KHYZ-2.A

BNPFTB20081022AAM
Latitude: 35-56-50 N
Longitude: 115-03-04 W
ERP: 0.37 kW
HAAT: 454.1 m
Channel: 259
Frequency: 99.7 MHz
RCAMSL Height: 1247.0 m
Site Elevation: 1223.0 m
Horiz. Pattern: Directional
Vert. Pattern: No
Prop Model: None

KHYZ

BMLH20020228ADC
Latitude: 35-29-27 N
Longitude: 115-33-27 W
ERP: 8.40 kW
HAAT: 551.0 m
Channel: 259
Frequency: 99.7 MHz
RCAMSL Height: 1864.0 m
Site Elevation: 1820.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

Scale 1:300,000



V-Soft Communications LLC ©

E2A
KHYZ LICENSED FACILITY
AND PROPOSED BOOSTER
54 DBU DEMONSTRATING
THAT THE BOOSTER'S
54 DBU (50,50) IS CONTAIN
WITHIN THE LICENSED CONTOUR.

KHYZ LICENSED 54 DBU

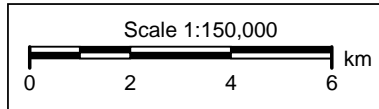
PROPOSED KHYZ-2 54 DBU

KHYZ-2.A

BNPFTB20081022AAM
Latitude: 35-56-50 N
Longitude: 115-03-04 W
ERP: 0.37 kW
HAAT: 454.1 m
Channel: 259
Frequency: 99.7 MHz
RCAMSL Height: 1247.0 m
Site Elevation: 1223.0 m
Horiz. Pattern: Directional
Vert. Pattern: No
Prop Model: None

KHYZ

BMLH20020228ADC
Latitude: 35-29-27 N
Longitude: 115-33-27 W
ERP: 8.40 kW
HAAT: 551.0 m
Channel: 259
Frequency: 99.7 MHz
RCAMSL Height: 1864.0 m
Site Elevation: 1820.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None



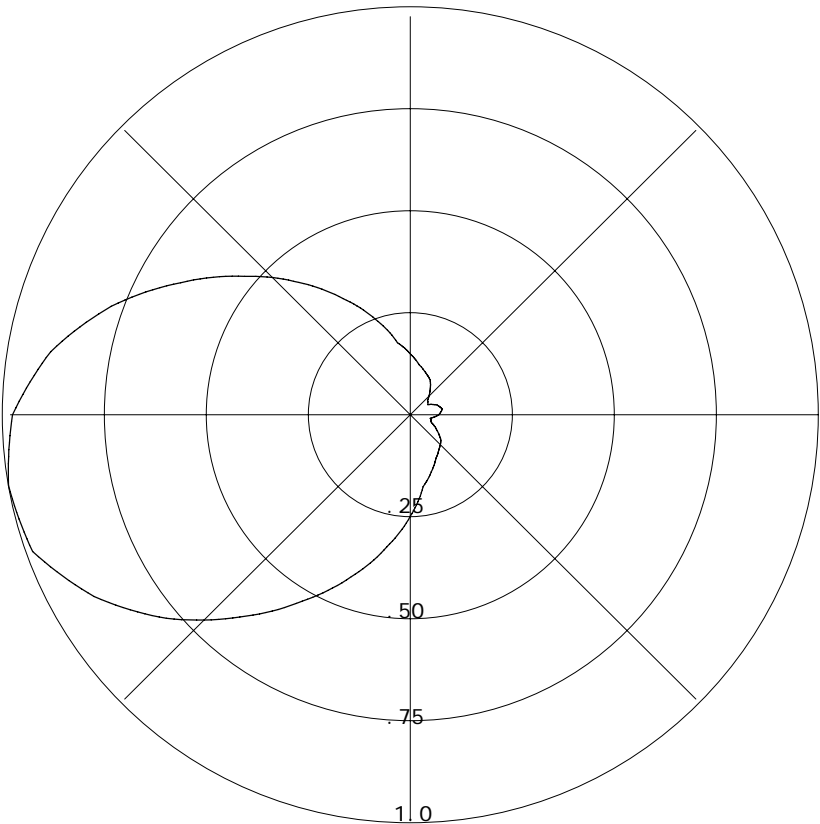
E3 PROPOSED KHYZ-2 DA

RMS(V)= .473

Bearing Field % Vol tage

000	=	0.150
010	=	0.125
020	=	0.110
030	=	0.098
040	=	0.075
050	=	0.055
060	=	0.050
070	=	0.070
080	=	0.080
090	=	0.070
100	=	0.050
110	=	0.055
120	=	0.075
130	=	0.098
140	=	0.110
150	=	0.125
160	=	0.150
170	=	0.180
180	=	0.250
190	=	0.330
200	=	0.425
210	=	0.530
220	=	0.650
230	=	0.780
240	=	0.895
250	=	0.985
260	=	1.000
270	=	0.975
280	=	0.895
290	=	0.780
300	=	0.650
310	=	0.530
320	=	0.425
330	=	0.330
340	=	0.250
350	=	0.180

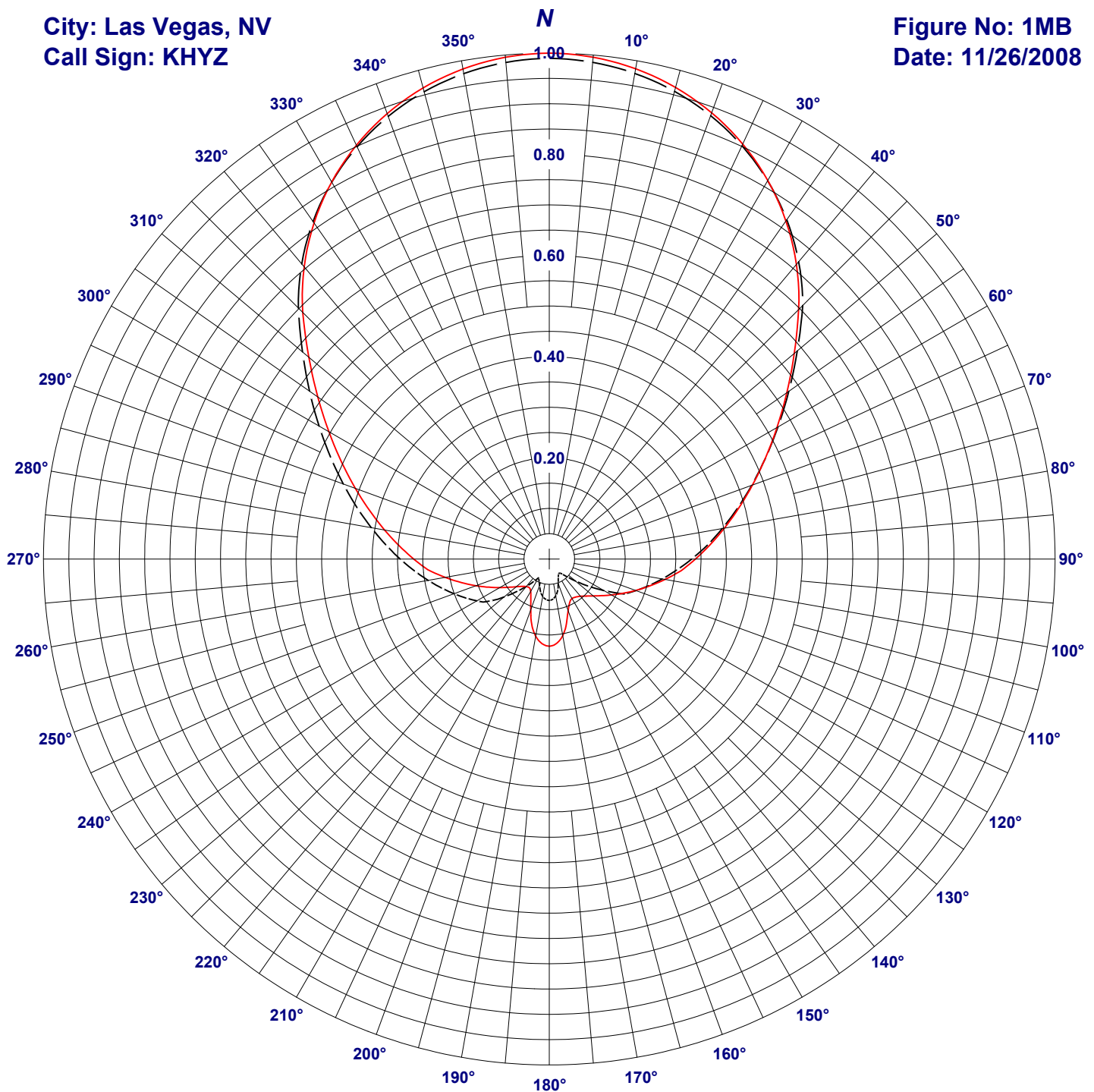
Graph i s Percent Relative Field Vol tage



ERI[®] Horizontal Plane Relative Field Pattern

City: Las Vegas, NV
Call Sign: KHYZ

Figure No: 1MB
Date: 11/26/2008



Frequency: 99.7 MHz
Antenna Type: 1091-1CP-DA
Antenna Orientation: 0° True
Antenna Mounting: Custom
Tower Type Tower

VERTICAL

RMS: .519
Maximum: .99 @ 0°
Minimum: .034 @ 145°

HORIZONTAL

RMS: .519
Maximum: 1 @ 0°
Minimum: .069 @ 215°

Booster antenna pattern. Basket CBR

ERI[®] *Horizontal Plane Relative Field List*

Electronics Research, Inc. 7777 Gardner Rd. Chandler, In 47610 Phone (812) 925-6000 Fax (812) 925-4030 <http://www.eriinc.com/>

Station: KHYZ
Location: Las Vegas, NV
Frequency: 99.7 MHz

Antenna: 1091-1CP-DA
Orientation: 0° True
Tower: Tower

Figure: 1MB
Date: 11/26/2008
Reference: khyz1mb.fig

Angle	Horizontal			Vertical			Angle	Horizontal			Vertical		
	Field	kW	dBk	Field	kW	dBk		Field	kW	dBk	Field	kW	dBk
0°	1.000	0.20	-6.99	0.990	0.20	-7.08	180°	0.172	0.01	-22.26	0.082	0.00	-28.73
5°	0.996	0.20	-7.03	0.985	0.19	-7.12	185°	0.168	0.01	-22.50	0.080	0.00	-28.93
10°	0.984	0.19	-7.13	0.975	0.19	-7.21	190°	0.155	0.00	-23.19	0.075	0.00	-29.50
15°	0.965	0.19	-7.30	0.957	0.18	-7.37	195°	0.134	0.00	-24.45	0.067	0.00	-30.51
20°	0.939	0.18	-7.54	0.933	0.17	-7.60	200°	0.107	0.00	-26.38	0.056	0.00	-32.02
25°	0.905	0.16	-7.86	0.901	0.16	-7.89	205°	0.086	0.00	-28.25	0.048	0.00	-33.40
30°	0.864	0.15	-8.26	0.863	0.15	-8.27	210°	0.074	0.00	-29.64	0.043	0.00	-34.37
35°	0.816	0.13	-8.76	0.819	0.13	-8.73	215°	0.069	0.00	-30.23	0.055	0.00	-32.19
40°	0.760	0.12	-9.37	0.767	0.12	-9.29	220°	0.071	0.00	-29.97	0.071	0.00	-30.01
45°	0.697	0.10	-10.12	0.709	0.10	-9.98	225°	0.076	0.00	-29.34	0.091	0.00	-27.82
50°	0.632	0.08	-10.97	0.640	0.08	-10.86	230°	0.085	0.00	-28.39	0.117	0.00	-25.64
55°	0.573	0.07	-11.82	0.578	0.07	-11.75	235°	0.097	0.00	-27.23	0.145	0.00	-23.76
60°	0.520	0.05	-12.67	0.522	0.05	-12.63	240°	0.113	0.00	-25.94	0.165	0.01	-22.62
65°	0.471	0.04	-13.52	0.472	0.04	-13.52	245°	0.132	0.00	-24.59	0.182	0.01	-21.79
70°	0.427	0.04	-14.37	0.426	0.04	-14.40	250°	0.154	0.00	-23.23	0.200	0.01	-20.95
75°	0.388	0.03	-15.22	0.385	0.03	-15.29	255°	0.180	0.01	-21.90	0.221	0.01	-20.11
80°	0.351	0.02	-16.07	0.347	0.02	-16.17	260°	0.209	0.01	-20.59	0.243	0.01	-19.28
85°	0.319	0.02	-16.92	0.314	0.02	-17.06	265°	0.241	0.01	-19.34	0.268	0.01	-18.44
90°	0.289	0.02	-17.77	0.281	0.02	-18.00	270°	0.268	0.01	-18.43	0.295	0.02	-17.60
95°	0.262	0.01	-18.62	0.253	0.01	-18.94	275°	0.298	0.02	-17.52	0.325	0.02	-16.76
100°	0.232	0.01	-19.66	0.227	0.01	-19.88	280°	0.331	0.02	-16.60	0.357	0.03	-15.93
105°	0.206	0.01	-20.73	0.203	0.01	-20.82	285°	0.367	0.03	-15.69	0.394	0.03	-15.09
110°	0.182	0.01	-21.81	0.183	0.01	-21.76	290°	0.408	0.03	-14.78	0.433	0.04	-14.25
115°	0.160	0.01	-22.89	0.164	0.01	-22.71	295°	0.453	0.04	-13.87	0.477	0.05	-13.42
120°	0.142	0.00	-23.95	0.125	0.00	-25.07	300°	0.503	0.05	-12.96	0.525	0.06	-12.58
125°	0.126	0.00	-24.96	0.093	0.00	-27.65	305°	0.559	0.06	-12.04	0.579	0.07	-11.74
130°	0.113	0.00	-25.89	0.068	0.00	-30.40	310°	0.621	0.08	-11.13	0.637	0.08	-10.91
135°	0.103	0.00	-26.70	0.049	0.00	-33.12	315°	0.689	0.10	-10.22	0.702	0.10	-10.07
140°	0.096	0.00	-27.33	0.038	0.00	-35.34	320°	0.754	0.11	-9.44	0.761	0.12	-9.36
145°	0.092	0.00	-27.74	0.034	0.00	-36.35	325°	0.811	0.13	-8.81	0.814	0.13	-8.77
150°	0.090	0.00	-27.90	0.036	0.00	-35.80	330°	0.860	0.15	-8.30	0.860	0.15	-8.30
155°	0.095	0.00	-27.42	0.042	0.00	-34.49	335°	0.902	0.16	-7.88	0.899	0.16	-7.91
160°	0.109	0.00	-26.25	0.052	0.00	-32.71	340°	0.937	0.18	-7.56	0.931	0.17	-7.61
165°	0.131	0.00	-24.63	0.064	0.00	-30.85	345°	0.964	0.19	-7.31	0.956	0.18	-7.38
170°	0.154	0.00	-23.27	0.074	0.00	-29.64	350°	0.983	0.19	-7.13	0.974	0.19	-7.22
175°	0.167	0.01	-22.52	0.080	0.00	-28.97	355°	0.995	0.20	-7.03	0.985	0.19	-7.12

Polarization:
Maximum Field:
Minimum Field:
RMS:
Maximum ERP:

Horizontal
1.000 @ 0° True
0.069 @ 215° True
0.519
0.200 kW

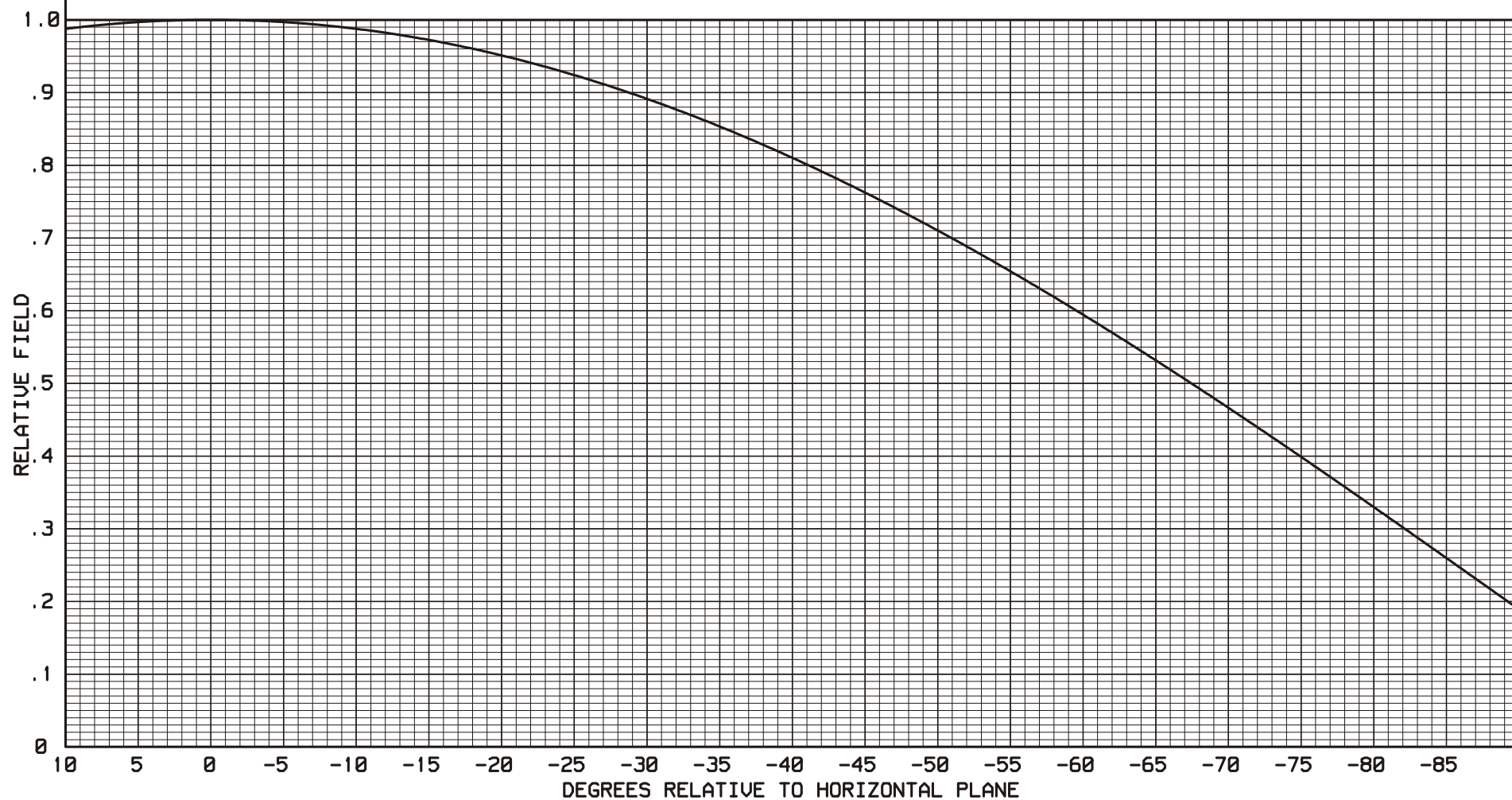
Vertical
0.990 @ 0° True
0.034 @ 145° True
0.519
0.196 kW

ELECTRONICS RESEARCH, INC.
7777 GARDNER ROAD
CHANDLER, IN. 47610

FIGURE 3

----THEORETICAL----
VERTICAL PLANE RELATIVE FIELD

ERI TYPE 1091-1CP-DA ANTENNA
0 DEGREE BEAM TILT
0 PERCENT NULL FILL



E4 HAAT TABULATION

N. Lat. = 355650 W. Lng. = 1150304

HAAT and Distance to Contour

FCC, FM 2-10 Mi, 51 pts Method - NGDC 30 SEC

Azi. AV EL HAAT ERP kW 60-F5

000	653.1	593.9	0.0051	10.94
030	735.2	511.8	0.0027	8.35
060	761.5	485.5	0.0017	6.87
090	757.1	489.9	0.0024	7.96
120	655.8	591.2	0.0030	9.09
150	692.1	554.9	0.0065	11.53
180	1027.2	219.8	0.0036	6.55
210	1044.2	202.8	0.0258	10.56
240	940.8	306.2	0.1762	20.95
270	835.1	411.9	0.3656	28.72
300	728.2	518.8	0.1473	26.10
330	690.6	556.4	0.0184	15.80

Ave EI= 793.39 M HAAT= 453.61 M AMSL= 1247 M

TOWAIR Determination Results (USINGNAD83 COORDINATES)

A routine check of the coordinates, heights, and structure type you provided indicates that this structure does not require registration.

*** 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

PASS SLOPE(100:1): NO FAA REQ-RWY MORE THAN 10499 MTRS & 7640.72 MTRS (7.64069 KM) AWAY

Type	C/R	Latitude	Longitude	Name	Address	Lowest Elevation (m)	Runway Length (m)
AIRP	R	35-58-1.00N	115-07-59.00W	HENDERSON EXECUTIVE	CLARK LAS VEGAS, NV	732.1	1981.5

PASS SLOPE(100:1): NO FAA REQ-RWY MORE THAN 10499 MTRS & 7740.70 MTRS (7.74070 KM) AWAY

Type	C/R	Latitude	Longitude	Name	Address	Lowest Elevation (m)	Runway Length (m)
AIRP	R	35-57-46.00N	115-08-8.00W	HENDERSON EXECUTIVE	CLARK LAS VEGAS, NV	732.1	1981.5

Your Specifications

NAD83 Coordinates

Latitude	35-56-49.8 north
Longitude	115-03-06.9 west

Measurements (Meters)

Overall Structure Height (AGL)	46
Support Structure Height (AGL)	46
Site Elevation (AMSL)	1223

Structure Type

TOWER - Free standing or Guyed Structure used for Communications Purposes

Tower Construction Notifications

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