



Order Number	42412
Date	7/14/2016
Call Letters	WPOC
Location	Baltimore, MD
Customer	IHeart
Antenna Type	DCRM3E50RP
Frequency	93.1
Drawing #	SK_P60

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PATTERN CERTIFICATION

Method of Measurement

The azimuth pattern for WPOC, Dielectric Document Sketch #SK_P60, was measured in the following manner.

A single 4.4 to 1 scale model "DCRM3E50RP" bay radiator was mounted on a similarly scaled model of the tower according to information provided to Dielectric by the customer; refer to Dielectric Document Sketch #SK_P60. The antenna under test, all parasitics, all known tower appurtenances, and the tower section were rotated through 360 degrees while receiving a signal at the appropriate frequency from a linear cavity-backed source antenna. Both the horizontal and vertical polarization azimuth patterns were measured in an anechoic test range.

The transmit and scale model antennas are mounted at identical elevations and at opposite ends of the chamber. A Hewlett Packard model 8753ET network analyzer was used to supply the RF signal to the source antenna at 4.4 times the fundamental FM frequency and to receive the signal intercepted by the antenna under test. The received signal was converted to a relative level, referenced to the source. This level was stored on a computer acting as the master controller. The computer controls the measurement system via IEEE-488 control bus through a GPIB card.

Derek Small is a Sr. RF Engineer here at Dielectric. Derek received a BS in Electrical Engineering from the University of Maine in 1986. He has 29 years experience in RF engineering and has been employed by Dielectric since 2015.

Signed by: Derek Small



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FM AZIMUTH PATTERN APPROVAL

The azimuth pattern of the horizontal polarization and vertical polarization as supplied by Dielectric in the document labeled "Pattern SK_P60", is acknowledged as
We understand that Dielectric does not guarantee or predict signal strength in any particular location.

I HEART MEDIA / WPOC
(Customer's name)

By: MICHAEL GUIDOTTI
(Name typed or printed)

Title: SUPV / NORTHEAST

[Signature]
(Signature)



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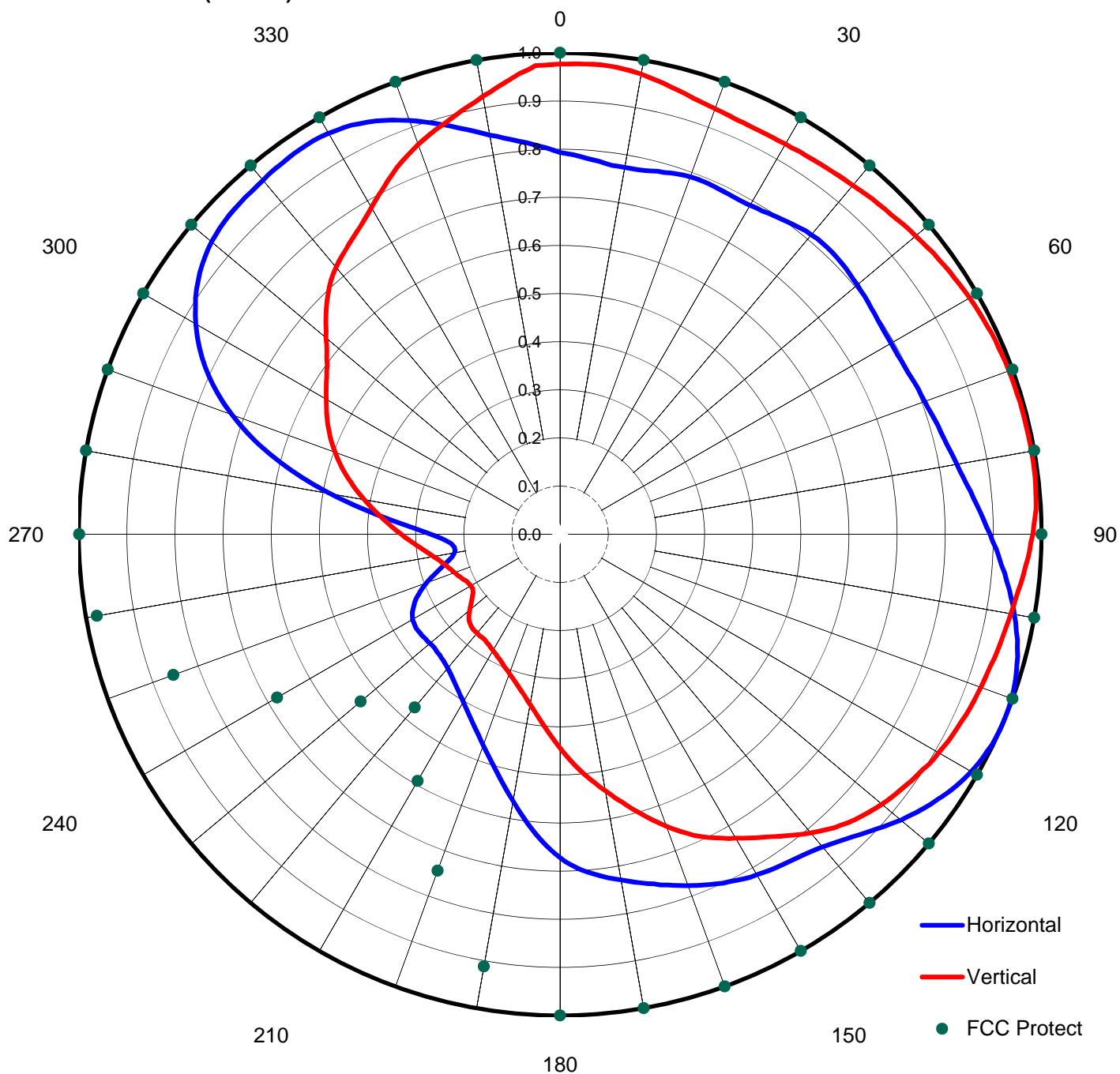
AZIMUTH PATTERN

85.3% Ccov 50.6% Hrms - 49.4% Vrms

Gain 1.77 (2.47 dB) HPOL
1.83 (2.64 dB) VPOL

Calculated / Measured

Measured





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TABULATION OF HORIZONTAL AZIMUTH PATTERN

Angle	Field	dBk	ERP kW
	0.793	10.027	10.062
10	0.774	9.816	9.585
20	0.790	9.994	9.986
30	0.789	9.983	9.960
40	0.812	10.232	10.550
50	0.806	10.168	10.394
60	0.794	10.038	10.087
70	0.806	10.168	10.394
80	0.837	10.496	11.209
90	0.893	11.058	12.759
100	0.958	11.669	14.684
110	0.998	12.024	15.936
120	0.986	11.919	15.555
130	0.924	11.355	13.660
140	0.848	10.609	11.506
150	0.817	10.286	10.680
160	0.777	9.850	9.660
170	0.729	9.296	8.503
180	0.672	8.589	7.225
190	0.563	7.051	5.072
200	0.467	5.428	3.489
210	0.402	4.126	2.586
220	0.363	3.239	2.108
230	0.353	2.997	1.994
240	0.354	3.021	2.005
250	0.295	1.438	1.392
260	0.223	-0.993	0.796
270	0.269	0.636	1.158
280	0.485	5.756	3.764
290	0.725	9.248	8.410
300	0.874	10.871	12.222
310	0.945	11.550	14.288
320	0.960	11.687	14.746
330	0.962	11.705	14.807
340	0.915	11.270	13.396
350	0.842	10.547	11.343
Additional Point 112	1.000	12.041	16.000



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TABULATION OF VERTICAL AZIMUTH PATTERN

Angle	Field	dBk	ERP kW
	0.977	11.839	15.272
10	0.971	11.786	15.085
20	0.941	11.513	14.168
30	0.936	11.467	14.018
40	0.946	11.559	14.319
50	0.964	11.723	14.869
60	0.982	11.883	15.429
70	0.992	11.971	15.745
80	0.995	11.998	15.840
90	0.982	11.883	15.429
100	0.951	11.605	14.470
110	0.930	11.411	13.838
120	0.908	11.203	13.191
130	0.873	10.861	12.194
140	0.810	10.211	10.498
150	0.729	9.296	8.503
160	0.646	8.246	6.677
170	0.541	6.705	4.683
180	0.445	5.008	3.168
190	0.359	3.143	2.062
200	0.308	1.812	1.518
210	0.279	0.953	1.245
220	0.268	0.604	1.149
230	0.245	-0.175	0.960
240	0.214	-1.351	0.733
250	0.233	-0.612	0.869
260	0.267	0.571	1.141
270	0.330	2.411	1.742
280	0.413	4.360	2.729
290	0.497	5.968	3.952
300	0.561	7.020	5.036
310	0.635	8.097	6.452
320	0.724	9.236	8.387
330	0.784	9.928	9.834
340	0.862	10.751	11.889
350	0.924	11.355	13.660

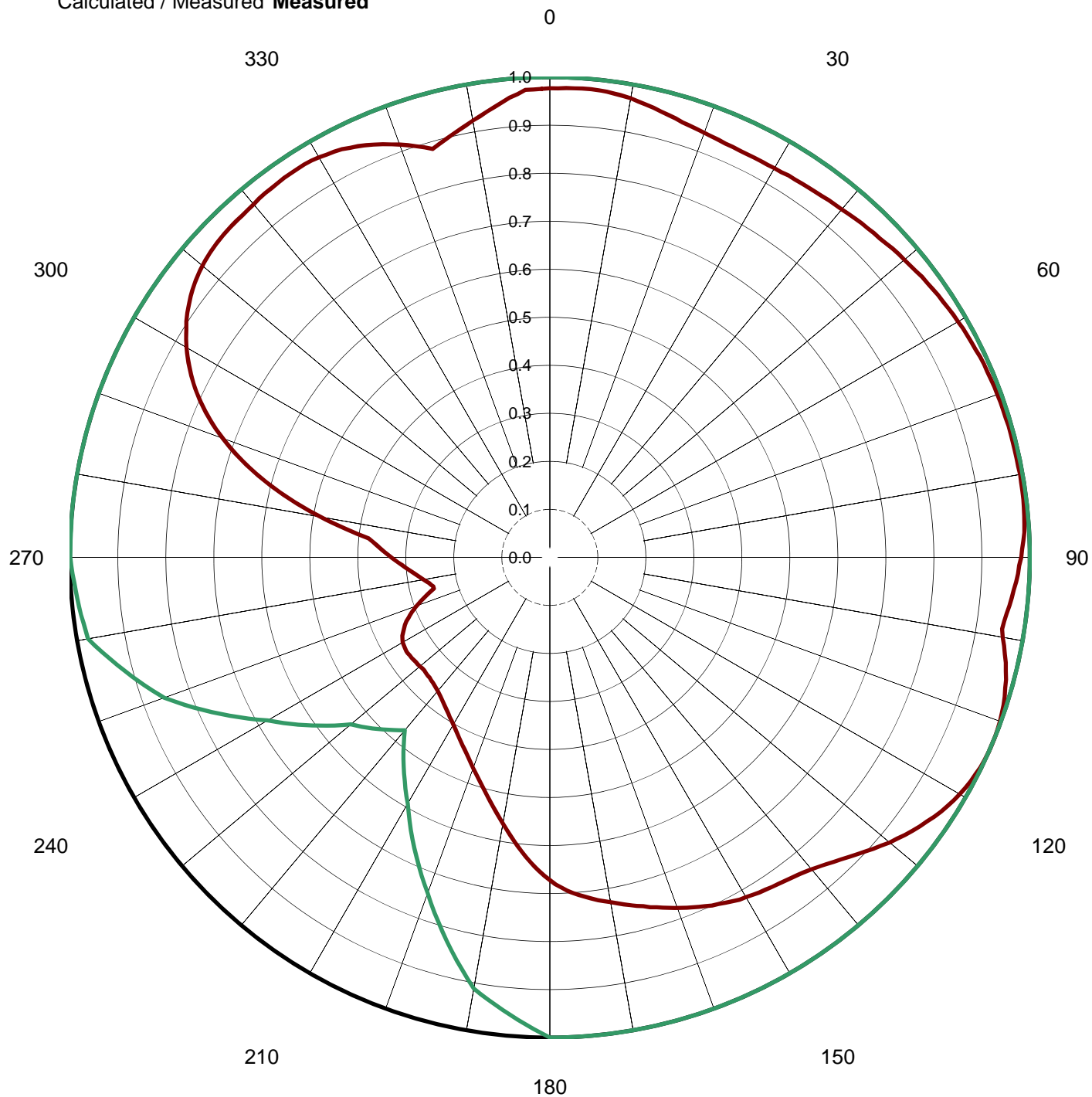


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COMPOSITE AZIMUTH PATTERN

Calculated / Measured **Measured**





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TABULATION OF COMPOSITE AZIMUTH PATTERN

Angle	Field	dBk	Power kW	Input Power
	0.977	11.839	15.272	16.000
10	0.971	11.786	15.085	16.000
20	0.941	11.513	14.168	16.000
30	0.936	11.467	14.018	16.000
40	0.946	11.559	14.319	16.000
50	0.964	11.723	14.869	16.000
60	0.982	11.883	15.429	16.000
70	0.992	11.971	15.745	16.000
80	0.995	11.998	15.840	16.000
90	0.982	11.883	15.429	16.000
100	0.958	11.669	14.684	16.000
110	0.998	12.024	15.936	16.000
120	0.986	11.919	15.555	16.000
130	0.924	11.355	13.660	16.000
140	0.848	10.609	11.506	16.000
150	0.817	10.286	10.680	16.000
160	0.777	9.850	9.660	16.000
170	0.729	9.296	8.503	16.000
180	0.672	8.589	7.225	16.000
190	0.563	7.051	5.072	16.000
200	0.467	5.428	3.489	16.000
210	0.402	4.126	2.586	16.000
220	0.363	3.239	2.108	16.000
230	0.353	2.997	1.994	16.000
240	0.354	3.021	2.005	16.000
250	0.295	1.438	1.392	16.000
260	0.267	0.571	1.141	16.000
270	0.330	2.411	1.742	16.000
280	0.485	5.756	3.764	16.000
290	0.725	9.248	8.410	16.000
300	0.874	10.871	12.222	16.000
310	0.945	11.550	14.288	16.000
320	0.960	11.687	14.746	16.000
330	0.962	11.705	14.807	16.000
340	0.915	11.270	13.396	16.000
350	0.924	11.355	13.660	16.000
Additional Point 112	1.000	12.041	16.000	16.000



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CUSTOMER GAIN SUMMARY

Azimuth Pattern Gain of Horizontal Polarization	1.77 (2.47 dB)
Elevation Pattern Gain Per Polarization	1.08 (0.31 dB)
Peak Gain of Horizontal Polarization	1.90 (2.79 dB)



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ELEVATION PATTERN

RMS Gain at Main Lobe **1.08 (0.31 dB)**
Per Polarization
Calculated / Measured **Calculated**

Beam Tilt
Frequency **93.1 MHz**





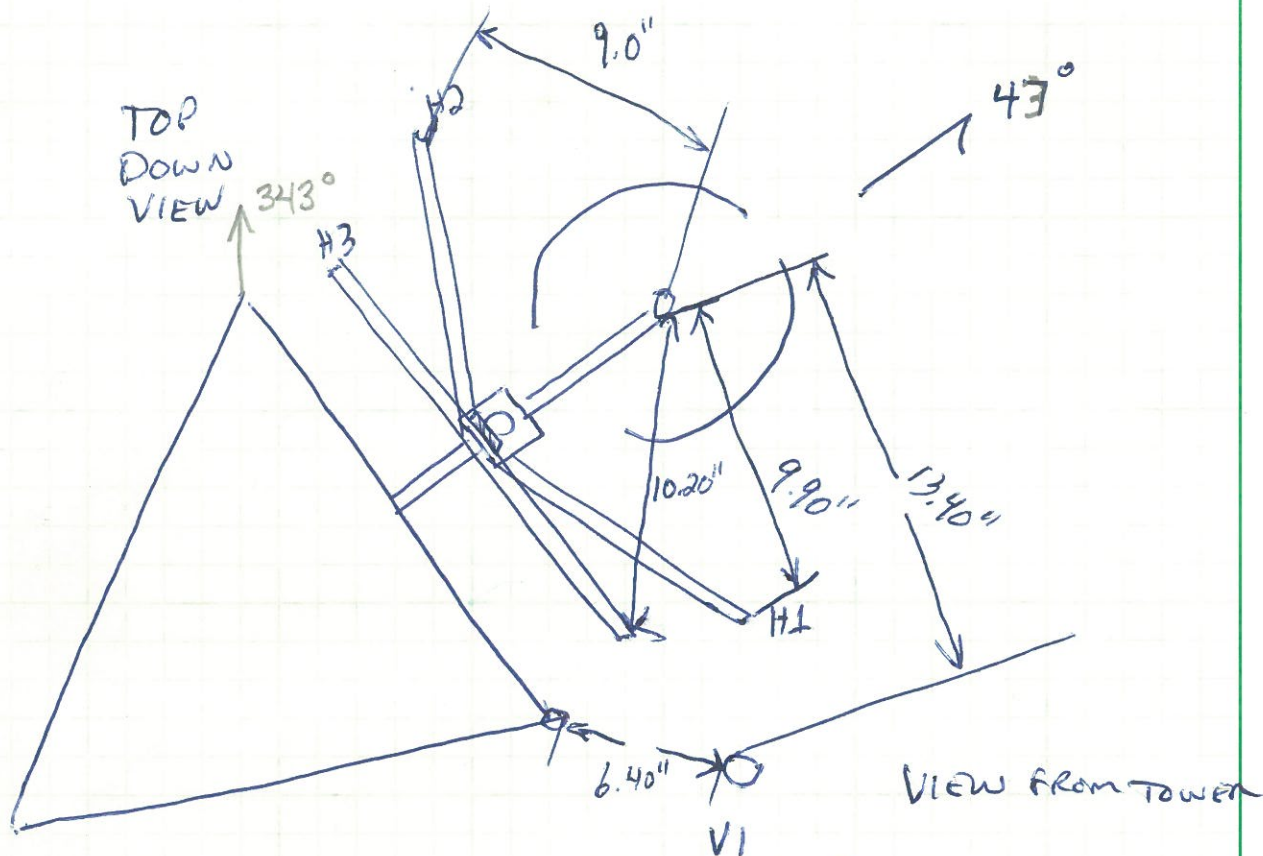
*Input power used will be either Hpol or Vpol depending on composite pattern

Input Power		
Horizontal	Vertical H or V max	
0.793	0.977	16.000
0.774	0.971	16.000
0.790	0.941	16.000
0.789	0.936	16.000
0.812	0.946	16.000
0.806	0.964	16.000
0.794	0.982	16.000
0.806	0.992	16.000
0.837	0.995	16.000
0.893	0.982	16.000
0.958	0.951	16.000
0.998	0.930	16.000
0.986	0.908	16.000
0.924	0.873	16.000
0.848	0.810	16.000
0.817	0.729	16.000
0.777	0.646	16.000
0.729	0.541	16.000
0.672	0.445	16.000
0.563	0.359	16.000
0.467	0.308	16.000
0.402	0.279	16.000
0.363	0.268	16.000
0.353	0.245	16.000
0.354	0.214	16.000
0.295	0.233	16.000
0.223	0.267	16.000
0.269	0.330	16.000
0.485	0.413	16.000
0.725	0.497	16.000
0.874	0.561	16.000
0.945	0.635	16.000
0.960	0.724	16.000
0.962	0.784	16.000
0.915	0.862	16.000
0.842	0.924	16.000

WPOC 93.1
DERM

4.4 SCALE \varnothing #60

- * NON-STD MOUNT 3.6" FROM TWR FACE TO BACK OF BLOCK
- * BAY ARM DISTANCE 1.90" VICE 2.05"
- * SPACER BLOCK BETWEEN TL AND H3 .400" H3 .37" OD MATERIAL
- H1 + H2 MOUNTED TO BACK OF TL
- H3 W SPACER BLOCK MOUNTED TO BACK OF TL



SHOULD BE ON RT SIDE