

TECHNICAL EXHIBIT  
AMENDMENT TO  
APPLICATION FOR CONSTRUCTION PERMIT  
WCLY-AM, LLC  
RADIO STATION WCLY  
RALEIGH, NORTH CAROLINA

January 18, 2012

1550 KHZ 1 KW-D 0.007 KW-N ND

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Technical Narrative

The technical exhibit of which this narrative is part has been prepared on behalf of WCLY-AM, LLC, licensee of AM broadcast station WCLY, Raleigh, North Carolina. WCLY is licensed as a Class D station for operation on 1550 kilohertz with daytime power of 1 kilowatt and secondary nighttime power of 0.007 kilowatts, operating with the same non-directional antenna pattern during daytime and nighttime hours. By means of this present application, the licensee proposes to erect a new tower to replace the former one that collapsed due to storm damage. The new tower will be shorter than the former tower and it will continue to serve as a non-directional antenna for both daytime and nighttime operation. The daytime and nighttime power levels will remain unchanged. The daytime and nighttime services are proposed from the same location with a slight geographical coordinate change of one second in latitude based on a recent site survey.

The proposal is classified as a minor change according to 47 CFR 73.3571(a)(2). As a Class D station operating on one of the channels listed in 73.25(b), the proposal satisfies 47 CFR 73.21(a)(3) which permits operation with a

nominal power of not less than 0.25 kilowatt nor more than 50 kilowatts during daytime hours. The Federal Aviation Administration has not been notified of the proposal as the new tower is shorter than the authorized tower and is less than 200 feet in height.

Proposed Transmitter Location

The location of the proposed WCLY facility is at NAD27 coordinates:

35-45-37 North

78-39-26 West

The aerial (satellite) photograph, the proposed transmitter location and antenna site plat are not included as the proposed site continues from the licensed location.

Non-Directional Antenna

The same tower will be employed for the daytime and nighttime non-directional antenna pattern. As indicated on Figure 1, the radiating element for the tower is 57.9 meters (190 feet) in height and has an overall height of 58.5 meters (192 feet) above ground level.

The non-directional antenna pattern has been determined in accordance with 47 CFR 73.190 assuming a two-ohm lumped loss resistance at the current loop of the tower. The effective field at one kilometer for one kilowatt is 317.3 mV/m.

Section 73.24(g)

The provisions of 47 CFR 73.24(g) require that the population within the 1 V/m contour not exceed 300 persons. At the proposed location, during daytime

hours, the proposed 1 V/m contour encompasses 17 persons thus the provisions of 47 CFR 73.24(g) are met.

### Daytime Coverage

The proposed WCLY daytime field strength contours are depicted on Figure 2 and the licensed daytime field strength contours, calculated using the characteristics of the former antenna, are shown on Figure 3. As can be seen from Figure 2, the proposed daytime 5.0 mV/m contour will provide 35.4 percent coverage of the area within the city limits of Raleigh. The licensed daytime 5.0 mV/m contour provided 37.0 percent coverage of the area within the city limits of Raleigh when the antenna was operational. Both the proposed and licensed daytime 5.0 mV/m contours fall short of the 100 percent community of license coverage requirement by approximately the same margin.

### Section 73.24(i) Waiver Request

Section 73.24(i) requires that the daytime 5 mV/m contour encompass the entire principal community to be served. In the case of Raleigh, North Carolina, it has become impossible for a station operating on 1550 kilohertz with no greater than the presently licensed power to satisfy this requirement. The corporate limits of the city have been expanded to include areas at significant distances from its central business district within its highly irregular borders since the present WCLY facility was licensed.

As can be seen from a comparison of Figures 2 and 3, the proposed daytime facility will provide substantially the same level of 5 mV/m service to the Raleigh community as was provided by the licensed non-directional antenna system while it was still in operation. In terms of percentage area coverage of the entire community, the proposal will cover only 1.6 percentage points less than did the licensed facility –

35.4 percent of the land area instead of 37.0 percent. In terms of percentage population coverage of the entire community, the proposal will cover only 0.9 percentage points less than did the licensed facility – 37.8 percent instead of 38.7 percent.

The calculated effective field values at one kilometer for the proposed and licensed WCLY non-directional antennas are 317.3 and 338 mV/m, respectively – differing by 0.55 dB. The 90 to 105 percent tolerance for operating power allowed by Section 73.1560(a) of the FCC Rules covers a span of 0.67 dB. As the difference in field level between the proposed and former towers is less than could be the case for operation with differing power levels falling within the requirements of the Rules with tower height held constant, the proposed difference in coverage due to the proposed reduction in tower height may clearly be regarded as *de minimis*.

WCLY has been rendered incapable of satisfying the daytime coverage requirements of Section 73.24(i) of the FCC’s Rules, with even the presently licensed facility, due to circumstances beyond the licensee’s control – the annexation of disparate areas within the corporate boundaries of Raleigh, North Carolina. The proposed antenna has been designed to closely replicate the licensed coverage and any difference in coverage will be *de minimis*. The necessary waiver of Section 73.24(i) of the FCC Rules is therefore requested.

#### Daytime Allocation Study

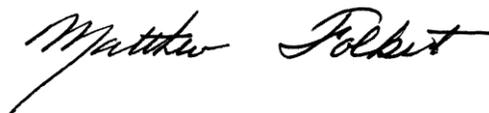
The proposed non-directional antenna has a calculated effective field at one kilometer for one kilowatt of 317.3 mV/m. The existing non-directional antenna has a calculated effective field at one kilometer for one kilowatt of 338 mV/m. Therefore, all proposed coverage and interference contours will be completely encompassed by the corresponding existing contours. Based on this analysis, the proposed WCLY facility will comply with all relevant allocation criteria.

Nighttime Allocation Study

The proposed WCLY facility will afford nighttime protection to all stations and international allotments operating on 1540 kHz, 1550 kHz, and 1560 kHz. Figure 4 contains pertinent calculation data to support a conclusion that this proposal comports with all nighttime interference protection requirements.

Environmental Considerations

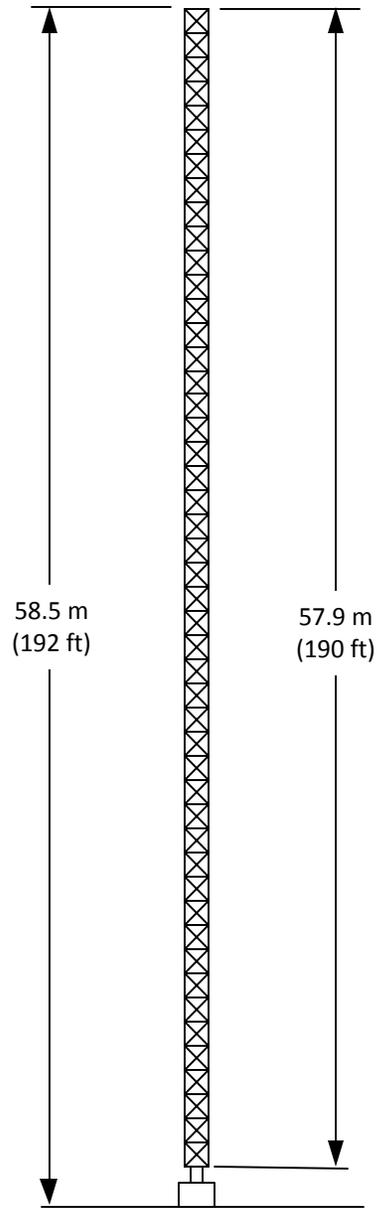
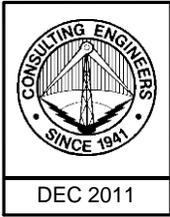
The proposed WCLY operation was evaluated in terms of both the electric and magnetic field components which will be present at the base of each tower. Using Figures 1 through 4 of Supplement A to OET Bulletin 65, the worst case interpolated distance at which the electric and magnetic fields would fall below ANSI guidelines is 2 meters. Accordingly, the areas surrounding the base of each tower will be appropriately restricted with a fence having a minimum radius of 2 meters (7 feet) unless data obtained after construction has been completed indicates otherwise. The fence will assure that persons on the property outside the fenced area will not be exposed to radiofrequency field levels in excess of those recommended by the ANSI. In addition, warning signs will be posted.



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January 18, 2012



New Tower

Site Coordinates(NAD 27)

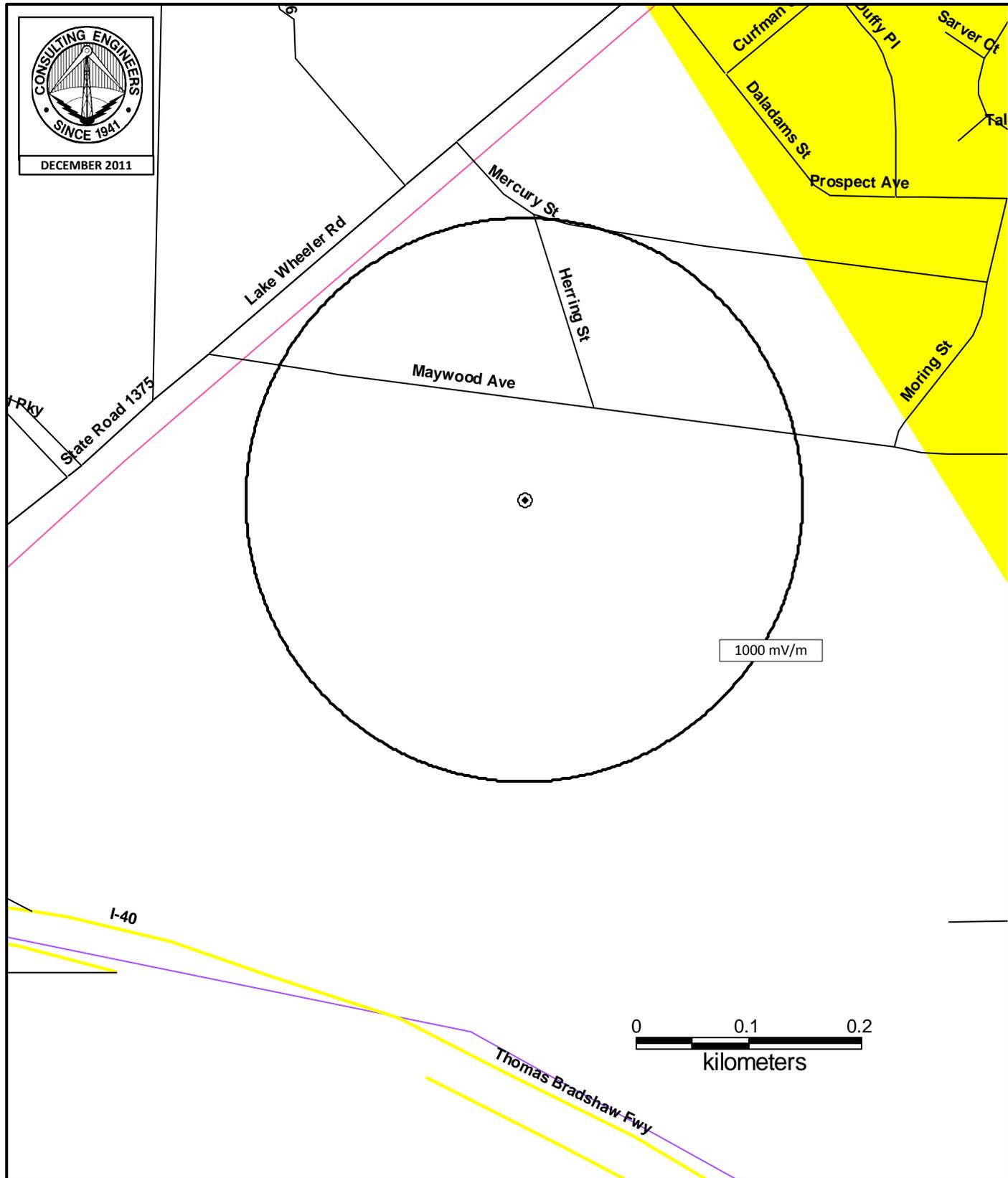
35° 45' 37" N  
78° 39' 26" W

Not To Scale

## SKETCH OF ANTENNA ELEMENT

RADIO STATION WCLY  
RALEIGH, NORTH CAROLINA  
1550 KHZ 1 KW-D 0.007 KW-N ND

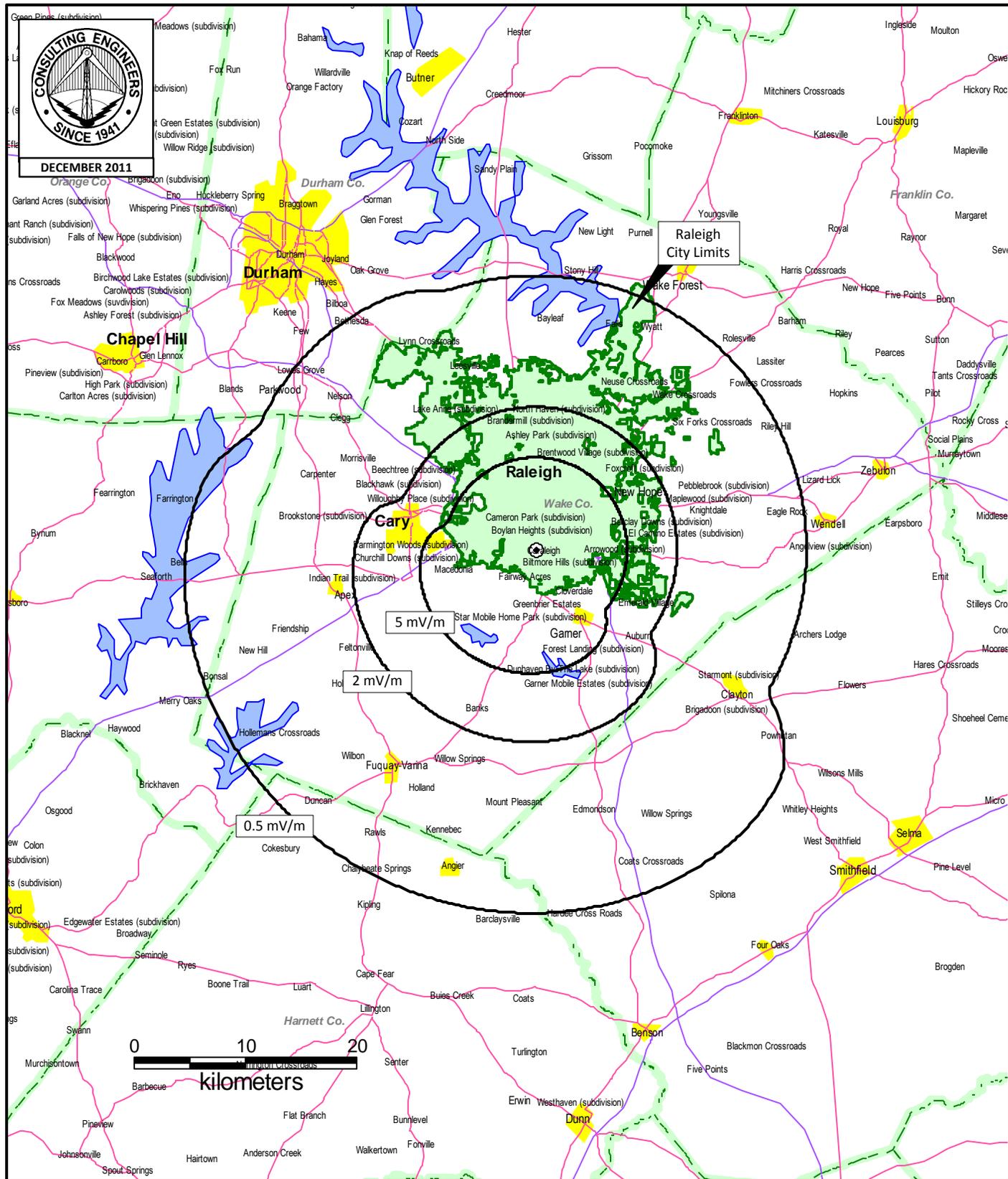
du Treil, Lundin & Rackley, Inc. Sarasota, Florida



## PROPOSED DAYTIME FIELD STRENGTH CONTOURS

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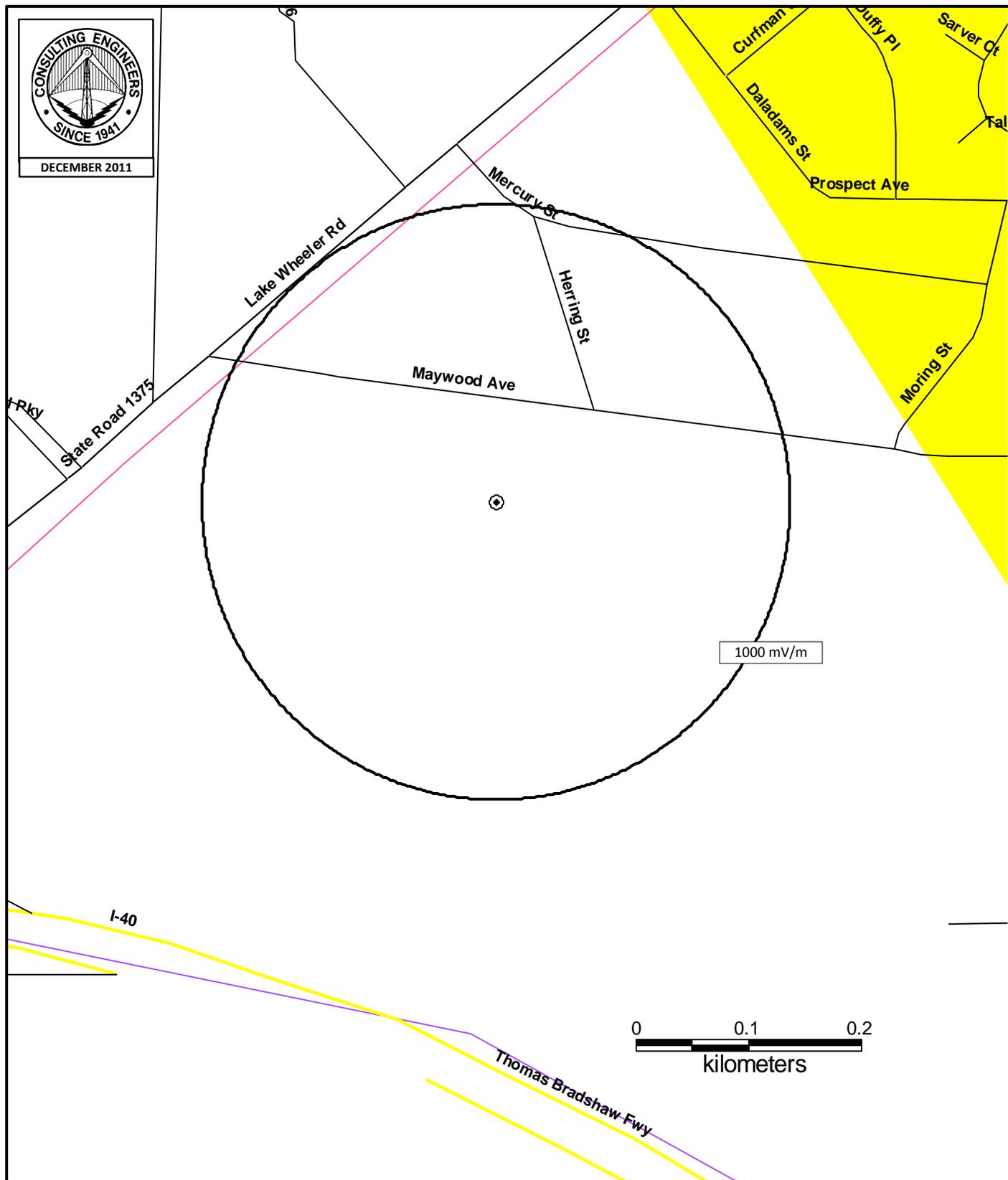
du Treil, Lundin & Rackley, Inc. Sarasota, Florida



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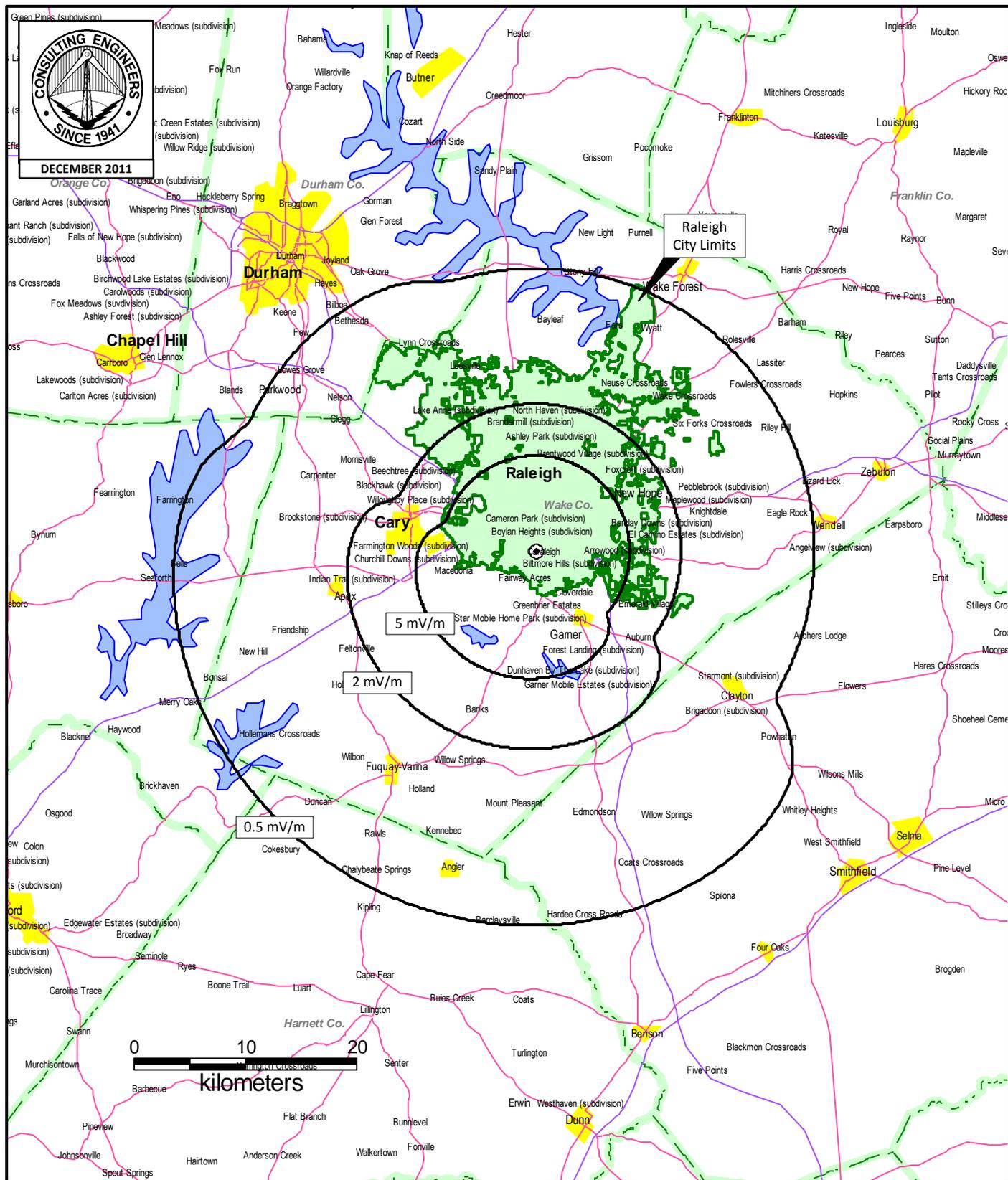
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### EXISTING DAYTIME FIELD STRENGTH CONTOURS

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**EXISTING DAYTIME FIELD STRENGTH CONTOURS**

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Nighttime Allocation Study

Call: WCLY  
Freq: 1550 kHz  
RALEIGH, NC, US  
Hours: N  
Lat: 35-45-37 N  
Lng: 078-39-26 W  
Power: 0.007 kW  
Theo RMS: 317.3 mV/m @ 1km @ 1kW

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	1.000	0.0	0.0	0.0	107.8	0	0	0.0	0.0	0.0	0.0

Call Letters	Ct	St	City	SWFF (100uV/m)	Req Prot (mV/m)	Permis (mV/m)	Cur Rad (mV/m)	Margin (mV/m)
CBE/A (95)	CA	ON	WINDSOR	92.95	0.500	26.92g	25.45	1.47
WBSC	US	SC	BENNETTSVILLE	349.52	2.354	33.67	16.42	17.25
50% = 6.736, 25% = 9.415; CBE/A=6.74 WLTI=3.10 WITK=3.06 WSDK=2.97 WQEW=2.87 XERUV/A=2.68								
UNK-B (5)	CJ		GUN BLUFF	21.30	0.500	117.39S	26.19	91.20
WNZF	US	FL	BUNNELL	71.31	2.301	161.32	25.95	135.37
50% = 8.132, 25% = 9.227; WBSC=5.79 XERUV/A=4.28 WRHC=3.79 XERUV/A=3.70 CBE/A=2.30								
WLTI	US	IN	NEW CASTLE	64.16	2.109	164.33	25.98	138.35
50% = 7.401, 25% = 8.434; CBE/A=7.40 KXEL=3.38 XERUV/A=2.22								
WQEW (220)	US	NY	NEW YORK	91.71	0.500	272.59G	25.50	247.09
WRHC	US	FL	DORAL	39.15	2.321	296.41	26.38	270.02
50% = 8.984, 25% = 9.284; WBSC=6.20 XERUV/A=4.92 XERUV/A=4.25 HITS-C=2.34								
KESJ	US	MO	ST. JOSEPH	20.14	1.214	301.54	26.51	275.03
50% = 4.562, 25% = 4.858; XERUV/A=2.76 CBE/A=2.72 XERUV/A=2.40 KZRK=1.67								
WRHC	US	FL	CORAL GABLES	38.61	2.351	304.49	26.38	278.11
50% = 9.093, 25% = 9.406; WBSC=6.42 XERUV/A=4.87 XERUV/A=4.21 HITS-C=2.41								

**Figure 4**  
**Sheet 2 of 2**

Call Letters	Ct St City	SWFF (100uV/m)	Req Prot (mV/m)	Permis (mV/m)	Cur Rad (mV/m)	Margin (mV/m)
XERUV/A (345)	MX VC ACAJETE	6.68	0.500	374.05S	26.54	347.51
WITK 50% = 24.353, 25% = 24.353; CBE/A=24.35	US PA PITTSTON	75.06	6.088	405.55	25.78	379.77
XERUV/A (25)	MX VC JALAPA	5.92	0.500	421.94S	26.54	395.40
WSDK 50% = 17.938, 25% = 20.021; CBE/A=14.99 WQEW=9.86 WITK=8.89	US CT BLOOMFIELD	51.08	5.005	489.93	26.14	463.80
KZRK 50% = 6.138, 25% = 7.14; XERUV/A=4.62 XERUV/A=4.04 KXEX=2.31 XENU/A=2.10 KWRN=1.89	US TX CANYON	11.39	1.785	783.40	26.54	756.86
KXEL (105)	US IA WATERLOO	26.31	0.500	950.12G	26.45	923.67
NEW 50% = 8.658, 25% = 10.49; CHIN/A=6.15 ZNS-1-A=6.09 KXEL=3.92 WCKY=3.15 KZMP=3.13	US GA RINCON	134.45	2.622	975.28	24.75	950.54
CMOR-D 50% = 3.58, 25% = 3.711; WRHC=2.66 XERUV/A=2.39 HITS-C=0.97	CU NUEVA GERONA	8.65	1.790	1034.81	26.47	1008.33
CMHO-D 50% = 3.724, 25% = 3.875; WBSC=2.40 HITS-C=2.23 WRHC=1.78 HJCB-A=1.07	CU NUEVITAS	8.84	1.862	1053.76	26.47	1027.29
WKFE 50% = 9.004, 25% = 11.075; HITS-C=9.00 HJZI-A=4.20 WBSC=3.85 HJCB-A=3.02	US PR YAUCO	12.61	2.769	1098.12	26.54	1071.58
KGCQ 50% = 5.762, 25% = 7.411; KESJ=3.74 KMRI=3.50 KZRK=2.64 XERUV/A=2.57 KWRN=2.31 XERUV/A=2.24 KXEX=2.18	US CO GOLDEN	7.96	1.853	1163.67	26.54	1137.13
NEW 50% = 10.065, 25% = 10.717; XERUV/A=6.51 XERUV/A=5.70 KZRK=5.14 XENU/A=3.68	US TX MIDLAND	11.25	2.679	1190.71	26.54	1164.17
WPAD 50% = 7.579, 25% = 8.205; WQEW=7.58 XERF/A=3.14	US KY PADUCAH	50.04	2.051	2049.69	26.21	2023.49
WPAD 50% = 7.579, 25% = 8.205; WQEW=7.58 XERF/A=3.14	US KY PADUCAH	50.04	2.051	2049.69	26.21	2023.49
KMRI 50% = 7.253, 25% = 9.227; KXEX=4.47 KZDG=4.41 KWRN=3.64 KRPI=3.06 KKOV=2.92 XEBG/A=2.84 KGCQ=2.56	US UT WEST VALLEY CIT	4.72	2.307	2444.60	26.54	2418.06
NEW 50% = 10.875, 25% = 11.539; ZNS-1-A=10.88 CHIN/A=3.86	US FL TANGELO PARK	57.71	2.885	2499.22	26.15	2473.07
NEW 50% = 11.115, 25% = 11.756; ZNS-1-A=11.12 CHIN/A=3.83	US FL SOUTHCHASE	57.86	2.939	2539.79	26.15	2513.64
NEW 50% = 11.129, 25% = 11.767; ZNS-1-A=11.13 CHIN/A=3.82	US FL SOUTHCHASE	57.72	2.942	2548.14	26.15	2522.00
XEBG/A 50% = 2.849, 25% = 3.799; KMRI=2.42 KKOV=1.51 XERUV/A=1.33 KZDG=1.15 KWRN=1.10 KRPI=1.03 KXEX=0.97	MX BN TIJUANA	2.46	1.424	2895.13	26.54	2868.58