

## **ENGINEERING EXHIBIT**

### **Digital Low Power Television Station Application for Minor Modification of Licensed Facility** prepared for

**Gray Television Licensee, LLC**  
WANF-LD Jackson, TN  
Facility ID 185366  
Ch. 32 10 kW Directional

*Gray Television Licensee, LLC* (“Gray”) is the licensee of digital Low Power Television station WANF-LD, Channel 32, Facility ID 185366, Jackson TN. WANF-LD is licensed to operate at 1.6 kW effective radiated power (“ERP”) with a directional antenna (file# 0000179060). *Gray* herein seeks a minor modification Construction Permit to relocate WANF-LD and to utilize a different directional antenna at increased ERP and antenna height.

The proposed facility will employ a new antenna system to be side-mounted on the existing tower structure associated with FCC Antenna Structure Registration number 1281655, located 34.7 km (21.6 miles) from the licensed site. No change to the overall structure height is proposed.

The proposed antenna is a Dielectric model TLP-6E having horizontal polarization. The ERP is 10 kW using a “full service” out of channel emission mask. A plot of the directional antenna’s azimuthal pattern is supplied in Figure 1. Figure 2 depicts the coverage contour of the proposed facility as well as that of the licensed facility, demonstrating compliance with §73.3572 for a minor change.

Interference study per OET Bulletin 69<sup>1</sup> shows that the proposal complies with the FCC’s interference protection requirements toward all digital television, television translator, LPTV, and

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<sup>1</sup>FCC Office of Engineering and Technology Bulletin number 69, *Longley-Rice Methodology for Evaluating TV Coverage and Interference*, February 6, 2004 (“OET-69”). This analysis employed the FCC’s current “TVStudy” software with the default application processing template settings, 1 km cell size, and 1 km terrain increment. Comparisons of various results of this computer program (run on a Mac processor) to the FCC’s implementation of TVStudy show excellent correlation.

Class A stations. The results, summarized in Table 1, show that any new interference does not exceed the FCC's interference limits (0.5 percent to full power and Class A stations, and 2.0 percent to secondary stations) to any facility.

### **Human Exposure to Radiofrequency Electromagnetic Field (Environmental)**

The proposed facility was evaluated for human exposure to RF energy using the procedures outlined in the FCC's OET Bulletin Number 65. Based on OET-65 equation (10) and 30 percent antenna relative field in downward elevations (pattern data shows 30 percent or less relative field at angles 10 to 90 degrees below the antenna), the calculated power density attributable to the proposed facility at locations near the transmitter site at a height of two meters above ground level is  $7.5 \mu\text{W}/\text{cm}^2$ , which is 1.9 percent of the general population / uncontrolled maximum permissible exposure limit. This is below the five percent threshold limit described in §1.1307(b) regarding sites with multiple emitters, categorically excluding the applicant from responsibility for taking any corrective action in the areas where the proposal's contribution is less than five percent.

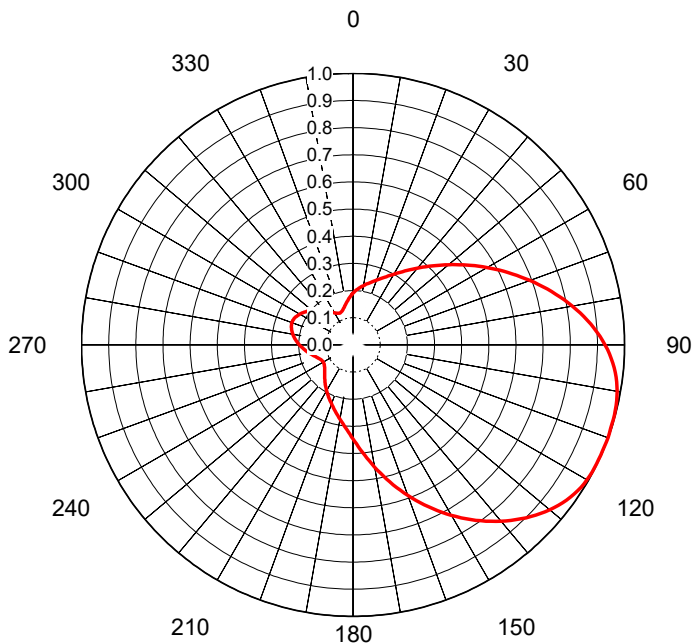
The general public will not be exposed to RF levels attributable to the proposal in excess of the FCC's guidelines. RF exposure warning signs will continue to be posted. With respect to worker safety, the applicant will coordinate exposure procedures with all pertinent stations and will reduce power or cease operation as necessary to protect persons having access to the site, tower, or antenna from RF electromagnetic field exposure in excess of FCC guidelines. This exhibit is limited to the evaluation of exposure to RF electromagnetic field. No increase in structure height is proposed.

#### List of Attachments

|           |   |
|-----------|---|
| Figure 1  | Antenna Azimuthal Pattern   |
| Figure 2  | Coverage Contour Comparison   |
| Table 1   | TVStudy Analysis of Proposal  |
| Form 2100 | Saved Version of Engineering Sections of FCC Form at Time of Upload |

### **Chesapeake RF Consultants, LLC**

|                       |                    |              |
|-----------------------|--------------------|--------------|
| Joseph M. Davis, P.E. | February 2, 2022   |              |
| 207 Old Dominion Road | Yorktown, VA 23692 | 703-650-9600 |



## AZIMUTH PATTERN Horizontal Polarization

Proposal No. **20210914jmd**  
Date **14-Sep-21**  
Call Letters **WHJK-LD**  
Channel **32**  
Frequency **581 MHz**  
Antenna Type **TLP-6E**  
Gain **3.87 (5.88dB)**  
Calculated

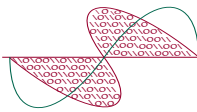
Pattern Number **TLP-E-32 Hpol**

| Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value |
|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|
| 0   | 0.190 | 36  | 0.339 | 72  | 0.719 | 108 | 0.998 | 144 | 0.801 | 180 | 0.346 | 216 | 0.175 | 252 | 0.143 | 288 | 0.239 |
| 1   | 0.194 | 37  | 0.346 | 73  | 0.731 | 109 | 0.998 | 145 | 0.789 | 181 | 0.338 | 217 | 0.172 | 253 | 0.146 | 289 | 0.239 |
| 2   | 0.197 | 38  | 0.354 | 74  | 0.744 | 110 | 1.000 | 146 | 0.776 | 182 | 0.330 | 218 | 0.168 | 254 | 0.149 | 290 | 0.240 |
| 3   | 0.201 | 39  | 0.361 | 75  | 0.757 | 111 | 0.999 | 147 | 0.764 | 183 | 0.322 | 219 | 0.165 | 255 | 0.151 | 291 | 0.240 |
| 4   | 0.204 | 40  | 0.369 | 76  | 0.770 | 112 | 0.999 | 148 | 0.751 | 184 | 0.315 | 220 | 0.162 | 256 | 0.154 | 292 | 0.239 |
| 5   | 0.207 | 41  | 0.377 | 77  | 0.783 | 113 | 0.999 | 149 | 0.738 | 185 | 0.308 | 221 | 0.159 | 257 | 0.157 | 293 | 0.239 |
| 6   | 0.210 | 42  | 0.385 | 78  | 0.795 | 114 | 0.999 | 150 | 0.725 | 186 | 0.301 | 222 | 0.156 | 258 | 0.160 | 294 | 0.238 |
| 7   | 0.213 | 43  | 0.394 | 79  | 0.808 | 115 | 0.998 | 151 | 0.712 | 187 | 0.295 | 223 | 0.153 | 259 | 0.163 | 295 | 0.236 |
| 8   | 0.216 | 44  | 0.402 | 80  | 0.820 | 116 | 0.998 | 152 | 0.699 | 188 | 0.289 | 224 | 0.151 | 260 | 0.166 | 296 | 0.235 |
| 9   | 0.219 | 45  | 0.411 | 81  | 0.833 | 117 | 0.998 | 153 | 0.685 | 189 | 0.283 | 225 | 0.148 | 261 | 0.169 | 297 | 0.233 |
| 10  | 0.222 | 46  | 0.420 | 82  | 0.845 | 118 | 0.997 | 154 | 0.672 | 190 | 0.277 | 226 | 0.146 | 262 | 0.172 | 298 | 0.231 |
| 11  | 0.225 | 47  | 0.430 | 83  | 0.856 | 119 | 0.996 | 155 | 0.659 | 191 | 0.272 | 227 | 0.143 | 263 | 0.175 | 299 | 0.229 |
| 12  | 0.228 | 48  | 0.439 | 84  | 0.868 | 120 | 0.995 | 156 | 0.645 | 192 | 0.267 | 228 | 0.141 | 264 | 0.179 | 300 | 0.226 |
| 13  | 0.231 | 49  | 0.449 | 85  | 0.879 | 121 | 0.993 | 157 | 0.631 | 193 | 0.262 | 229 | 0.139 | 265 | 0.182 | 301 | 0.224 |
| 14  | 0.234 | 50  | 0.459 | 86  | 0.890 | 122 | 0.990 | 158 | 0.618 | 194 | 0.257 | 230 | 0.137 | 266 | 0.185 | 302 | 0.221 |
| 15  | 0.237 | 51  | 0.469 | 87  | 0.900 | 123 | 0.986 | 159 | 0.604 | 195 | 0.253 | 231 | 0.135 | 267 | 0.188 | 303 | 0.219 |
| 16  | 0.240 | 52  | 0.480 | 88  | 0.910 | 124 | 0.982 | 160 | 0.590 | 196 | 0.248 | 232 | 0.133 | 268 | 0.191 | 304 | 0.216 |
| 17  | 0.243 | 53  | 0.490 | 89  | 0.919 | 125 | 0.978 | 161 | 0.577 | 197 | 0.244 | 233 | 0.132 | 269 | 0.194 | 305 | 0.213 |
| 18  | 0.247 | 54  | 0.501 | 90  | 0.928 | 126 | 0.972 | 162 | 0.563 | 198 | 0.240 | 234 | 0.130 | 270 | 0.198 | 306 | 0.210 |
| 19  | 0.250 | 55  | 0.512 | 91  | 0.937 | 127 | 0.966 | 163 | 0.549 | 199 | 0.235 | 235 | 0.129 | 271 | 0.201 | 307 | 0.207 |
| 20  | 0.254 | 56  | 0.523 | 92  | 0.945 | 128 | 0.960 | 164 | 0.536 | 200 | 0.231 | 236 | 0.128 | 272 | 0.204 | 308 | 0.204 |
| 21  | 0.258 | 57  | 0.535 | 93  | 0.952 | 129 | 0.953 | 165 | 0.522 | 201 | 0.227 | 237 | 0.128 | 273 | 0.207 | 309 | 0.200 |
| 22  | 0.262 | 58  | 0.546 | 94  | 0.959 | 130 | 0.945 | 166 | 0.509 | 202 | 0.223 | 238 | 0.127 | 274 | 0.210 | 310 | 0.197 |
| 23  | 0.266 | 59  | 0.558 | 95  | 0.965 | 131 | 0.937 | 167 | 0.495 | 203 | 0.220 | 239 | 0.127 | 275 | 0.212 | 311 | 0.194 |
| 24  | 0.270 | 60  | 0.570 | 96  | 0.971 | 132 | 0.929 | 168 | 0.482 | 204 | 0.216 | 240 | 0.127 | 276 | 0.215 | 312 | 0.191 |
| 25  | 0.275 | 61  | 0.581 | 97  | 0.976 | 133 | 0.920 | 169 | 0.469 | 205 | 0.212 | 241 | 0.127 | 277 | 0.218 | 313 | 0.187 |
| 26  | 0.279 | 62  | 0.593 | 98  | 0.980 | 134 | 0.910 | 170 | 0.457 | 206 | 0.209 | 242 | 0.127 | 278 | 0.220 | 314 | 0.184 |
| 27  | 0.284 | 63  | 0.606 | 99  | 0.984 | 135 | 0.901 | 171 | 0.444 | 207 | 0.205 | 243 | 0.128 | 279 | 0.223 | 315 | 0.181 |
| 28  | 0.289 | 64  | 0.618 | 100 | 0.988 | 136 | 0.891 | 172 | 0.432 | 208 | 0.202 | 244 | 0.129 | 280 | 0.225 | 316 | 0.177 |
| 29  | 0.295 | 65  | 0.630 | 101 | 0.991 | 137 | 0.880 | 173 | 0.420 | 209 | 0.198 | 245 | 0.130 | 281 | 0.227 | 317 | 0.174 |
| 30  | 0.301 | 66  | 0.643 | 102 | 0.993 | 138 | 0.870 | 174 | 0.408 | 210 | 0.195 | 246 | 0.131 | 282 | 0.229 | 318 | 0.171 |
| 31  | 0.306 | 67  | 0.655 | 103 | 0.995 | 139 | 0.859 | 175 | 0.397 | 211 | 0.191 | 247 | 0.133 | 283 | 0.231 | 319 | 0.167 |
| 32  | 0.312 | 68  | 0.668 | 104 | 0.996 | 140 | 0.848 | 176 | 0.386 | 212 | 0.188 | 248 | 0.135 | 284 | 0.233 | 320 | 0.164 |
| 33  | 0.319 | 69  | 0.680 | 105 | 0.996 | 141 | 0.836 | 177 | 0.375 | 213 | 0.185 | 249 | 0.137 | 285 | 0.235 | 321 | 0.161 |
| 34  | 0.325 | 70  | 0.693 | 106 | 0.997 | 142 | 0.825 | 178 | 0.365 | 214 | 0.181 | 250 | 0.139 | 286 | 0.236 | 322 | 0.158 |
| 35  | 0.332 | 71  | 0.706 | 107 | 0.997 | 143 | 0.813 | 179 | 0.356 | 215 | 0.178 | 251 | 0.141 | 287 | 0.238 | 323 | 0.155 |

**Figure 1**  
**Antenna Azimuthal Pattern**  
**WANF-LD Jackson, TN**  
**Facility ID 185366**  
**Ch. 32 10 kW Directional**

prepared for  
**Gray Television Licensee, LLC**

February, 2022

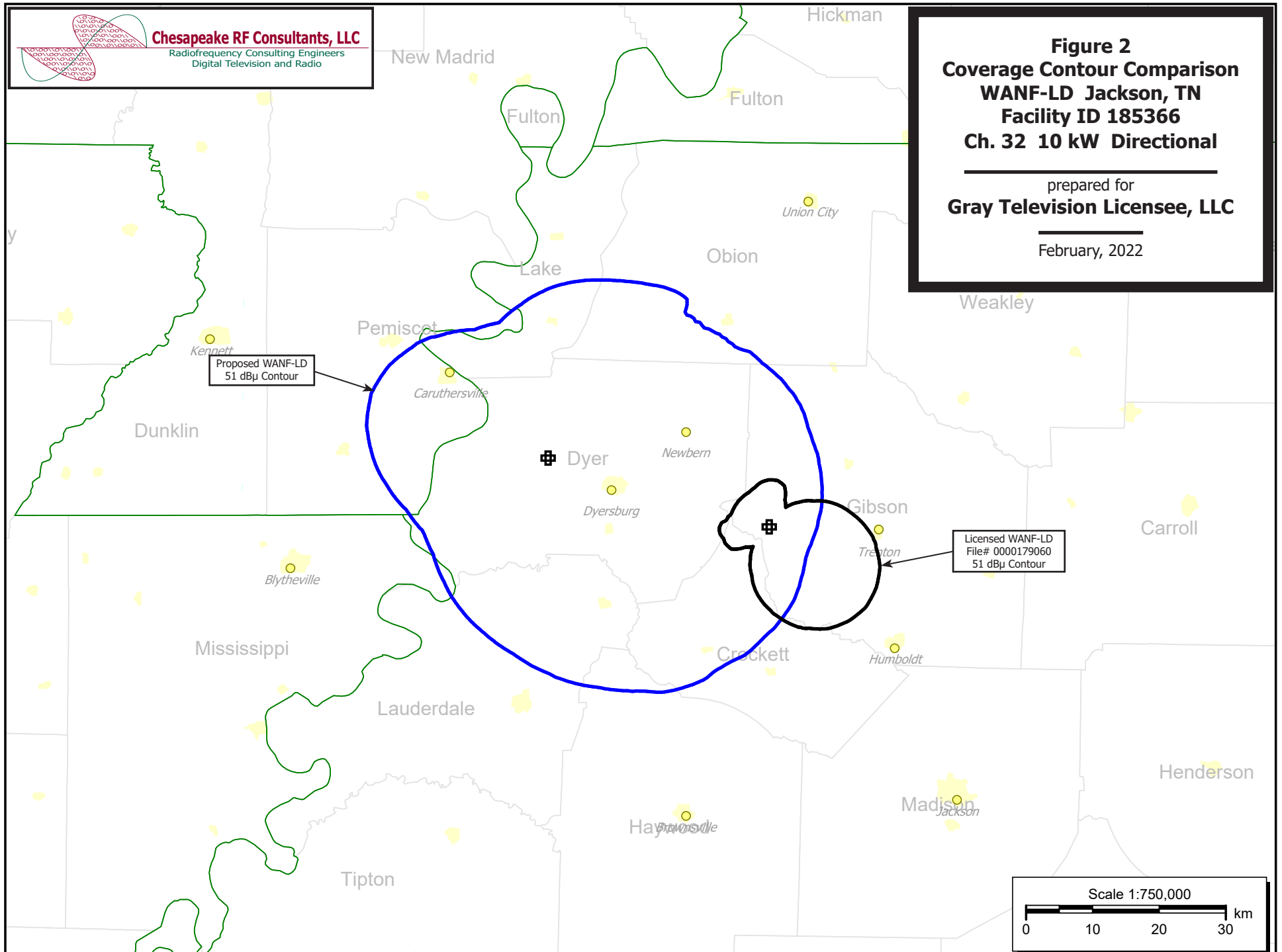


**Chesapeake RF Consultants, LLC**  
Radiofrequency Consulting Engineers  
Digital Television and Radio

**Figure 2**  
**Coverage Contour Comparison**  
**WANF-LD Jackson, TN**  
**Facility ID 185366**  
**Ch. 32 10 kW Directional**

prepared for  
**Gray Television Licensee, LLC**

February, 2022



# **Table 1 WANF-LD TVStudy Analysis of Proposal** (page 1 of 5)



tvstudy v2.2.5 (4uoc83)  
Database: localhost, Study: WANF-LD prop 1281655, Model: Longley-Rice  
Start: 2022.02.02 09:51:25

Study created: 2022.02.02 09:51:25

Study build station data: LMS TV 2022-02-02

Proposal: WANF-LD D32 LD APP JACKSON, TN  
File number: WANF-LD prop 1281655  
Facility ID: 185366  
Station data: User record  
Record ID: 4180  
Country: U.S.

Build options:  
Protect pre-transition records not on baseline channel

Search options:  
Baseline record excluded if station has CP

Stations potentially affected by proposal:

| IX  | Call    | Chan | Svc | Status | City, State        | File Number       | Distance |
|-----|---------|------|-----|--------|--------------------|-------------------|----------|
| No  | WKMA-TV | D31  | DT  | LIC    | MADISONVILLE, KY   | BLANK0000087442   | 215.4 km |
| No  | K30NE-D | D31  | LD  | CP     | CAPE GIRARDEAU, MO | BLANK0000071795   | 142.2    |
| Yes | WLMT    | D31  | DT  | LIC    | MEMPHIS, TN        | BLCDT20050427ABN  | 92.8     |
| No  | DW50BO  | D32+ | LD  | APP    | ASHVILLE, AL       | BLANK0000054790   | 391.7    |
| No  | WBMA-LD | D32  | LD  | LIC    | BIRMINGHAM, AL     | BLANK0000120220   | 377.5    |
| No  | WMJN-LD | D32  | LD  | LIC    | Huntsville, AL     | BLANK0000130267   | 296.2    |
| No  | W32EQ-D | D32  | LD  | LIC    | TUSCALOOSA, AL     | BLANK0000177226   | 354.8    |
| No  | KWNL-CD | D32  | DC  | LIC    | BENTONVILLE, AR    | BLANK0000055355   | 421.7    |
| No  | KARK-TV | D32  | DT  | LIC    | LITTLE ROCK, AR    | BLANK0000149977   | 307.3    |
| No  | WICD    | D32  | DT  | LIC    | CHAMPAIGN, IL      | BLANK0000059351   | 464.7    |
| No  | WTJR    | D32  | DT  | LIC    | QUINCY, IL         | BLCDT20091110ADL  | 461.8    |
| No  | W32FR-D | D32  | LD  | CP     | EVANSVILLE, IN     | BNPDTL20090825AZT | 275.3    |
| No  | WDRB    | D32  | DT  | LIC    | LOUISVILLE, KY     | BLANK0000087865   | 409.5    |
| Yes | KFVS-TV | D32  | DT  | CP     | CAPE GIRARDEAU, MO | BLANK0000150355   | 150.3    |
| No  | KRMS-LD | D32  | LD  | LIC    | Lake Ozark, MO     | BLANK0000181605   | 360.4    |
| No  | KUMO-LD | D32  | LD  | CP     | ST LOUIS, MO       | BLANK0000030456   | 287.2    |
| No  | WABG-TV | D32  | DT  | LIC    | GREENWOOD, MS      | BLCDT20051024ABR  | 315.5    |
| Yes | W32EV-D | D32  | DC  | LIC    | ADAMSVILLE, TN     | BLANK0000121663   | 138.8    |
| No  | WNPX-TV | D32  | DT  | LIC    | FRANKLIN, TN       | BLANK0000087615   | 256.1    |
| Yes | WQEO-LD | D32  | LD  | LIC    | Memphis, TN        | BLANK0000098540   | 92.8     |
| No  | WPGD-TV | D33  | DT  | LIC    | HENDERSONVILLE, TN | BMLCDT20131125BGF | 242.8    |
| Yes | WPXX-TV | D33  | DT  | LIC    | MEMPHIS, TN        | BLANK0000063435   | 100.6    |
| No  | W33EB-D | D33  | LD  | LIC    | OLIVE HILL, TN     | BLANK0000152237   | 161.6    |
| No  | K27OY-D | N39+ | TX  | LIC    | MEMPHIS, TN        | BLTT19930329IE    | 117.7    |

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D32  
Mask: Full Service  
Latitude: 36 4 38.60 N (NAD83)  
Longitude: 89 29 28.20 W  
Height AMSL: 206.0 m  
HAAT: 0.0 m  
Peak ERP: 10.0 kW  
Antenna: DIE TLP-E 110.0 deg  
Elev Pattn: Generic  
Elec Tilt: 0.50

50.5 dBu contour:

| Azimuth | ERP      | HAAT    | Distance |
|---------|----------|---------|----------|
| 0.0 deg | 0.361 kW | 121.0 m | 26.2 km  |
| 45.0    | 1.71     | 87.3    | 30.9     |
| 90.0    | 8.61     | 102.5   | 40.8     |
| 135.0   | 8.04     | 119.9   | 42.1     |
| 180.0   | 1.20     | 126.2   | 32.8     |

**Table 1 WANF-LD TVStudy Analysis of Proposal**  
(page 2 of 5)



|       |       |       |      |
|-------|-------|-------|------|
| 225.0 | 0.224 | 126.9 | 24.1 |
| 270.0 | 0.392 | 126.0 | 27.0 |
| 315.0 | 0.326 | 128.3 | 26.2 |

Database HAAT does not agree with computed HAAT  
Database HAAT: 0 m    Computed HAAT: 117 m

Distance to Canadian border: 848.9 km

Distance to Mexican border: 1300.6 km

Conditions at FCC monitoring station: Powder Springs GA  
Bearing: 118.2 degrees    Distance: 499.1 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:  
Bearing: 292.8 degrees    Distance: 1445.4 km

Study cell size: 1.00 km  
Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%  
Maximum new IX to LPTV: 2.00%

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Interference to BLCDT20050427ABN LIC scenario 1

|              |              |                 |           |                 |                            |                                 |                  |      |      |
|--------------|--------------|-----------------|-----------|-----------------|----------------------------|---------------------------------|------------------|------|------|
| Desired:     | Call<br>WLMT | Chan<br>D31     | Svc<br>DT | Status<br>LIC   | City, State<br>MEMPHIS, TN | File Number<br>BLCDT20050427ABN | Distance         |      |      |
| Undesireds:  | WANF-LD      | D32             | LD        | APP             | JACKSON, TN                | WANF-LD prop 1281655            | 92.8 km          |      |      |
|              | WMC-TV       | D30             | DT        | APP             | MEMPHIS, TN                | BLANK0000127522                 | 15.4             |      |      |
|              | KWBM         | D31             | DT        | CP              | HARRISON, AR               | BLANK0000036086                 | 335.4            |      |      |
|              | WKMA-TV      | D31             | DT        | LIC             | MADISONVILLE, KY           | BLANK0000087442                 | 293.9            |      |      |
|              | WGBC         | D31             | DT        | CP              | MERIDIAN, MS               | BLANK0000035926                 | 342.7            |      |      |
|              | W32EV-D      | D32             | DC        | LIC             | ADAMSVILLE, TN             | BLANK0000121663                 | 128.7            |      |      |
| Service area |              | Terrain-limited |           | IX-free, before |                            | IX-free, after                  | Percent New IX   |      |      |
| 31786.7      | 1,733,603    | 31606.5         | 1,728,875 | 31362.4         | 1,721,604                  | 31267.4                         | 1,714,432        | 0.30 | 0.42 |
| Undesired    |              |                 |           | Total IX        | Unique IX, before          |                                 | Unique IX, after |      |      |
| WANF-LD      | D32          | LD              | APP       | 95.1            | 7,172                      | 95.1                            | 7,172            |      |      |
| WMC-TV       | D30          | DT              | APP       | 56.2            | 668                        | 56.2                            | 668              |      |      |
| KWBM         | D31          | DT              | CP        | 51.7            | 3,909                      | 51.7                            | 3,909            |      |      |
| WKMA-TV      | D31          | DT              | LIC       | 4.0             | 159                        | 3.0                             | 159              |      |      |
| WGBC         | D31          | DT              | CP        | 87.4            | 1,989                      | 86.4                            | 1,989            |      |      |
| W32EV-D      | D32          | DC              | LIC       | 46.8            | 546                        | 44.8                            | 546              |      |      |

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Interference to BLCDT20050427ABN LIC scenario 2

|                    |              |                 |           |                 |                            |                                 |                |                  |      |
|--------------------|--------------|-----------------|-----------|-----------------|----------------------------|---------------------------------|----------------|------------------|------|
| Desired:           | Call<br>WLMT | Chan<br>D31     | Svc<br>DT | Status<br>LIC   | City, State<br>MEMPHIS, TN | File Number<br>BLCDT20050427ABN | Distance       |                  |      |
| Undesireds:        | WANF-LD      | D32             | LD        | APP             | JACKSON, TN                | WANF-LD prop 1281655            | 92.8 km        |                  |      |
|                    | WMC-TV       | D30             | DT        | APP             | MEMPHIS, TN                | BLANK0000127522                 | 15.4           |                  |      |
|                    | KWBM         | D31             | DT        | CP              | HARRISON, AR               | BLANK0000036086                 | 335.4          |                  |      |
|                    | WKMA-TV      | D31             | DT        | LIC             | MADISONVILLE, KY           | BLANK0000087442                 | 293.9          |                  |      |
|                    | WGBC         | D31             | DT        | LIC             | MERIDIAN, MS               | BLCDT20071024AAK                | 342.7          |                  |      |
|                    | W32EV-D      | D32             | DC        | LIC             | ADAMSVILLE, TN             | BLANK0000121663                 | 128.7          |                  |      |
| Service area       |              | Terrain-limited |           | IX-free, before |                            | IX-free, after                  | Percent New IX |                  |      |
| 31786.7            | 1,733,603    | 31606.5         | 1,728,875 | 31380.5         | 1,721,944                  | 31285.4                         | 1,714,772      | 0.30             | 0.42 |
| Undesired          |              |                 |           | Total IX        |                            | Unique IX, before               |                | Unique IX, after |      |
| WANF-LD D32 LD APP |              | 95.1            |           | 7,172           |                            | 95.1                            |                | 7,172            |      |
| WMC-TV D30 DT APP  |              | 56.2            |           | 668             |                            | 56.2                            |                | 668              |      |
| KWBM D31 DT CP     |              | 51.7            |           | 3,909           |                            | 51.7                            |                | 3,909            |      |
| WKMA-TV D31 DT LIC |              | 4.0             |           | 159             |                            | 3.0                             |                | 159              |      |
| WGBC D31 DT LIC    |              | 69.3            |           | 1,649           |                            | 68.3                            |                | 1,649            |      |

**Table 1 WANF-LD TV Study Analysis of Proposal**  
(page 3 of 5)



W32EV-D D32 DC LIC 46.8 546 44.8 546 44.8 546

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Interference to BLC DT20050427ABN LIC scenario 3

| Desired:           | Call    | Chan              | Svc        | Status            | City, State      | File Number          | Distance       |
|--------------------|---------|-------------------|------------|-------------------|------------------|----------------------|----------------|
|                    | WLMT    | D31               | DT         | LIC               | MEMPHIS, TN      | BLC DT20050427ABN    |                |
| Undesireds:        | WANF-LD | D32               | LD         | APP               | JACKSON, TN      | WANF-LD prop 1281655 | 92.8 km        |
|                    | WMC-TV  | D30               | DT         | APP               | MEMPHIS, TN      | BLANK0000127522      | 15.4           |
|                    | KWBM    | D31               | DT         | LIC               | HARRISON, AR     | BLC DT20091201ASC    | 335.4          |
|                    | WKMA-TV | D31               | DT         | LIC               | MADISONVILLE, KY | BLANK0000087442      | 293.9          |
|                    | WGBC    | D31               | DT         | CP                | MERIDIAN, MS     | BLANK0000035926      | 342.7          |
|                    | W32EV-D | D32               | DC         | LIC               | ADAMSVILLE, TN   | BLANK0000121663      | 128.7          |
| Service area       |         | Terrain-limited   |            | IX-free, before   |                  | IX-free, after       | Percent New IX |
| 31786.7 1,733,603  |         | 31606.5 1,728,875 |            | 31406.2 1,724,237 |                  | 31311.1 1,717,065    | 0.30 0.42      |
| Undesired          |         |                   | Total IX   | Unique IX, before |                  | Unique IX, after     |                |
| WANF-LD D32 LD APP |         |                   | 95.1 7,172 |                   |                  | 95.1 7,172           |                |
| WMC-TV D30 DT APP  |         |                   | 56.2 668   | 56.2 668          |                  | 56.2 668             |                |
| KWBM D31 DT LIC    |         |                   | 7.9 1,276  | 7.9 1,276         |                  | 7.9 1,276            |                |
| WKMA-TV D31 DT LIC |         |                   | 4.0 159    | 3.0 159           |                  | 3.0 159              |                |
| WGBC D31 DT CP     |         |                   | 87.4 1,989 | 86.4 1,989        |                  | 86.4 1,989           |                |
| W32EV-D D32 DC LIC |         |                   | 46.8 546   | 44.8 546          |                  | 44.8 546             |                |

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Interference to BLC DT20050427ABN LIC scenario 4

| Desired:           | Call    | Chan              | Svc        | Status            | City, State      | File Number          | Distance       |
|--------------------|---------|-------------------|------------|-------------------|------------------|----------------------|----------------|
|                    | WLMT    | D31               | DT         | LIC               | MEMPHIS, TN      | BLC DT20050427ABN    |                |
| Undesireds:        | WANF-LD | D32               | LD         | APP               | JACKSON, TN      | WANF-LD prop 1281655 | 92.8 km        |
|                    | WMC-TV  | D30               | DT         | APP               | MEMPHIS, TN      | BLANK0000127522      | 15.4           |
|                    | KWBM    | D31               | DT         | LIC               | HARRISON, AR     | BLC DT20091201ASC    | 335.4          |
|                    | WKMA-TV | D31               | DT         | LIC               | MADISONVILLE, KY | BLANK0000087442      | 293.9          |
|                    | WGBC    | D31               | DT         | LIC               | MERIDIAN, MS     | BLC DT20071024AAK    | 342.7          |
|                    | W32EV-D | D32               | DC         | LIC               | ADAMSVILLE, TN   | BLANK0000121663      | 128.7          |
| Service area       |         | Terrain-limited   |            | IX-free, before   |                  | IX-free, after       | Percent New IX |
| 31786.7 1,733,603  |         | 31606.5 1,728,875 |            | 31424.3 1,724,577 |                  | 31329.2 1,717,405    | 0.30 0.42      |
| Undesired          |         |                   | Total IX   | Unique IX, before |                  | Unique IX, after     |                |
| WANF-LD D32 LD APP |         |                   | 95.1 7,172 |                   |                  | 95.1 7,172           |                |
| WMC-TV D30 DT APP  |         |                   | 56.2 668   | 56.2 668          |                  | 56.2 668             |                |
| KWBM D31 DT LIC    |         |                   | 7.9 1,276  | 7.9 1,276         |                  | 7.9 1,276            |                |
| WKMA-TV D31 DT LIC |         |                   | 4.0 159    | 3.0 159           |                  | 3.0 159              |                |
| WGBC D31 DT LIC    |         |                   | 69.3 1,649 | 68.3 1,649        |                  | 68.3 1,649           |                |
| W32EV-D D32 DC LIC |         |                   | 46.8 546   | 44.8 546          |                  | 44.8 546             |                |

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Interference to BLANK0000150355 CP scenario 1

| Desired:           | Call    | Chan            | Svc         | Status            | City, State        | File Number          | Distance       |
|--------------------|---------|-----------------|-------------|-------------------|--------------------|----------------------|----------------|
|                    | KFVS-TV | D32             | DT          | CP                | CAPE GIRARDEAU, MO | BLANK0000150355      |                |
| Undesireds:        | WANF-LD | D32             | LD          | APP               | JACKSON, TN        | WANF-LD prop 1281655 | 150.3 km       |
|                    | KDNL-TV | D31             | DT          | LIC               | ST. LOUIS, MO      | BLANK0000158069      | 146.9          |
|                    | KARK-TV | D32             | DT          | LIC               | LITTLE ROCK, AR    | BLANK0000149977      | 397.3          |
|                    | WICD    | D32             | DT          | LIC               | CHAMPAIGN, IL      | BLANK0000059351      | 324.2          |
|                    | WTJR    | D32             | DT          | LIC               | QUINCY, IL         | BLC DT20091110ADL    | 323.9          |
|                    | WDRB    | D32             | DT          | LIC               | LOUISVILLE, KY     | BLANK0000087865      | 336.5          |
|                    | WNPX-TV | D32             | DT          | LIC               | FRANKLIN, TN       | BLANK0000087615      | 269.5          |
|                    | KTVI    | D33             | DT          | LIC               | ST. LOUIS, MO      | BLANK0000158068      | 144.6          |
| Service area       |         | Terrain-limited |             | IX-free, before   |                    | IX-free, after       | Percent New IX |
| 41557.2 910,473    |         | 40885.5 901,067 |             | 40232.0 890,162   |                    | 40162.6 889,691      | 0.17 0.05      |
| Undesired          |         |                 | Total IX    | Unique IX, before |                    | Unique IX, after     |                |
| WANF-LD D32 LD APP |         |                 | 75.5 471    |                   |                    | 69.4 471             |                |
| KDNL-TV D31 DT LIC |         |                 | 207.5 5,625 | 19.1 603          |                    | 19.1 603             |                |
| KARK-TV D32 DT LIC |         |                 | 8.0 17      | 8.0 17            |                    | 6.0 17               |                |
| WICD D32 DT LIC    |         |                 | 126.4 641   | 43.3 291          |                    | 43.3 291             |                |

**Table 1 WANF-LD TVStudy Analysis of Proposal**  
(page 4 of 5)



|                    |       |       |       |       |       |       |
|--------------------|-------|-------|-------|-------|-------|-------|
| WTJR D32 DT LIC    | 73.8  | 2,645 | 33.4  | 1,091 | 33.4  | 1,091 |
| WDRB D32 DT LIC    | 214.1 | 1,598 | 115.0 | 1,171 | 115.0 | 1,171 |
| WNPX-TV D32 DT LIC | 52.4  | 261   | 14.1  | 26    | 10.1  | 26    |
| KTVI D33 DT LIC    | 318.4 | 7,248 | 117.9 | 1,676 | 117.9 | 1,676 |

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Interference to BLANK0000121663 LIC scenario 1

|              |                 |                 |           |                 |                               |                                |                  |        |
|--------------|-----------------|-----------------|-----------|-----------------|-------------------------------|--------------------------------|------------------|--------|
| Desired:     | Call<br>W32EV-D | Chan<br>D32     | Svc<br>DC | Status<br>LIC   | City, State<br>ADAMSVILLE, TN | File Number<br>BLANK0000121663 | Distance         |        |
| Undesireds:  | WANF-LD         | D32             | LD        | APP             | JACKSON, TN                   | WANF-LD prop 1281655           | 138.8 km         |        |
|              | KFVS-TV         | D32             | DT        | CP              | CAPE GIRARDEAU, MO            | BLANK0000150355                | 264.8            |        |
|              | WABG-TV         | D32             | DT        | LIC             | GREENWOOD, MS                 | BLCDT20051024ABR               | 287.7            |        |
|              | WNPX-TV         | D32             | DT        | LIC             | FRANKLIN, TN                  | BLANK0000087615                | 208.3            |        |
| Service area |                 | Terrain-limited |           | IX-free, before |                               | IX-free, after                 | Percent New IX   |        |
| 4935.5       | 97,362          | 4840.8          |           | 96,817          | 4797.9                        | 96,388                         | 4796.9           | 96,388 |
|              |                 |                 |           |                 |                               |                                | 0.02             | 0.00   |
| Undesired    |                 |                 |           | Total IX        | Unique IX, before             |                                | Unique IX, after |        |
| WANF-LD      | D32             | LD              | APP       | 2.0             | 0                             |                                | 1.0              | 0      |
| KFVS-TV      | D32             | DT              | CP        | 8.0             | 11                            |                                | 7.0              | 11     |
| WABG-TV      | D32             | DT              | LIC       | 5.0             | 50                            |                                | 0.0              | 0      |
| WNPX-TV      | D32             | DT              | LIC       | 35.9            | 418                           |                                | 28.9             | 368    |

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Interference to BLANK0000098540 LIC scenario 1

|              |           |                 |           |          |                 |                      |                |                  |                |  |
|--------------|-----------|-----------------|-----------|----------|-----------------|----------------------|----------------|------------------|----------------|--|
|              | Call      | Chan            | Svc       | Status   | City, State     | File Number          | Distance       |                  |                |  |
| Desired:     | WQEO-LD   | D32             | LD        | LIC      | Memphis, TN     | BLANK0000098540      |                |                  |                |  |
| Undesireds:  | WANF-LD   | D32             | LD        | APP      | JACKSON, TN     | WANF-LD prop 1281655 | 92.8 km        |                  |                |  |
|              | WLMT      | D31             | DT        | LIC      | MEMPHIS, TN     | BLCDT20050427ABN     | 0.0            |                  |                |  |
|              | WABG-TV   | D32             | DT        | LIC      | GREENWOOD, MS   | BLCDT20051024ABR     | 222.8          |                  |                |  |
|              | W32EV-D   | D32             | DC        | LIC      | ADAMSVILLE, TN  | BLANK0000121663      | 128.7          |                  |                |  |
|              | WPXX-TV   | D33             | DT        | LIC      | MEMPHIS, TN     | BLANK0000063435      | 7.9            |                  |                |  |
| Service area |           | Terrain-limited |           |          | IX-free, before |                      | IX-free, after |                  | Percent New IX |  |
| 10484.6      | 1,293,139 | 10483.6         | 1,293,139 | 10308.8  | 1,290,194       | 10293.9              | 1,290,111      | 0.14             | 0.01           |  |
| Undesired    |           |                 |           | Total IX |                 | Unique IX, before    |                | Unique IX, after |                |  |
| WANF-LD      | D32       | LD              | APP       | 16.8     | 89              | 14.9                 | 83             |                  |                |  |
| WLMT         | D31       | DT              | LIC       | 28.9     | 477             | 14.9                 | 329            |                  |                |  |
| WABG-TV      | D32       | DT              | LIC       | 6.0      | 128             | 4.0                  | 101            |                  |                |  |
| W32EV-D      | D32       | DC              | LIC       | 1.0      | 27              | 0.0                  | 0              |                  |                |  |
| WPXX-TV      | D33       | DT              | LIC       | 155.9    | 2,515           | 140.0                | 2,340          |                  |                |  |
|              |           |                 |           |          |                 | 138.0                | 2,334          |                  |                |  |

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Interference to BLANK0000063435 LIC scenario 1

|              |                 |                 |           |                 |                            |                                |                  |                |      |
|--------------|-----------------|-----------------|-----------|-----------------|----------------------------|--------------------------------|------------------|----------------|------|
| Desired:     | Call<br>WPXX-TV | Chan<br>D33     | Svc<br>DT | Status<br>LIC   | City, State<br>MEMPHIS, TN | File Number<br>BLANK0000063435 | Distance         |                |      |
| Undesireds:  | WANF-LD         | D32             | LD        | APP             | JACKSON, TN                | WANF-LD prop 1281655           | 100.6 km         |                |      |
|              | W32EV-D         | D32             | DC        | LIC             | ADAMSVILLE, TN             | BLANK0000121663                | 132.1            |                |      |
|              | WPXH-TV         | D33             | DT        | LIC             | HOOVER, AL                 | BLANK0000105366                | 336.3            |                |      |
|              | KTVI            | D33             | DT        | LIC             | ST. LOUIS, MO              | BLANK0000158068                | 372.8            |                |      |
|              | WPGD-TV         | D33             | DT        | LIC             | HENDERSONVILLE, TN         | BMLCDT20131125BGF              | 296.6            |                |      |
| Service area |                 | Terrain-limited |           | IX-free, before |                            | IX-free, after                 |                  | Percent New IX |      |
| 27385.8      | 1,563,174       | 27208.6         | 1,560,419 | 26950.4         | 1,556,233                  | 26938.2                        | 1,556,199        | 0.05           | 0.00 |
| Undesired    |                 |                 |           | Total IX        | Unique IX, before          |                                | Unique IX, after |                |      |
| WANF-LD      | D32             | LD              | APP       | 21.3            | 40                         | 12.1                           | 34               |                |      |
| W32EV-D      | D32             | DC              | LIC       | 2.0             | 0                          | 1.0                            | 0                |                |      |
| WPXH-TV      | D33             | DT              | LIC       | 33.1            | 451                        | 8.0                            | 98               |                |      |
| KTVI         | D33             | DT              | LIC       | 2.0             | 0                          | 0.0                            | 0                |                |      |
| WPGD-TV      | D33             | DT              | LIC       | 249.2           | 4,088                      | 214.0                          | 3,729            |                |      |

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Interference to proposal scenario 1  
6.90% interference received



**Table 1 WANF-LD TVStudy Analysis of Proposal**  
(page 5 of 5)



|                    | Call         | Chan            | Svc    | Status            | City, State        | File Number          | Distance |
|--------------------|--------------|-----------------|--------|-------------------|--------------------|----------------------|----------|
| Desired:           | WANF-LD      | D32             | LD     | APP               | JACKSON, TN        | WANF-LD prop 1281655 |          |
| Undesireds:        | WLMT         | D31             | DT     | LIC               | MEMPHIS, TN        | BLCDT20050427ABN     | 92.8 km  |
|                    | KFVS-TV      | D32             | DT     | CP                | CAPE GIRARDEAU, MO | BLANK0000150355      | 150.3    |
|                    | WQEO-LD      | D32             | LD     | LIC               | Memphis, TN        | BLANK0000098540      | 92.8     |
|                    |              |                 |        |                   |                    |                      |          |
|                    | Service area | Terrain-limited |        | IX-free           |                    | Percent IX           |          |
| 3201.7             | 64,292       | 3186.6          | 64,195 | 2930.7            | 59,765             | 8.03                 | 6.90     |
|                    |              |                 |        |                   |                    |                      |          |
| Undesired          |              |                 |        | Total IX          | Unique IX          | Prct Unique IX       |          |
| WLMT D31 DT LIC    |              |                 |        | 2.0 73 0.0        | 0                  | 0.00                 | 0.00     |
| KFVS-TV D32 DT CP  |              |                 |        | 121.9 2,225 95.8  | 1,415              | 3.01                 | 2.20     |
| WQEO-LD D32 LD LIC |              |                 |        | 160.1 3,015 134.0 | 2,205              | 4.20                 | 3.43     |

**Channel and  
Facility  
Information**

| Section     | Question  | Response |
|-------------|-----------|----------|
| Facility ID | 185366    |          |
| State       | Tennessee |          |
| City        | JACKSON   |          |
| LPD Channel | 32        |          |

**Primary station proposed to be rebroadcast:**

| Facility Id | Call Sign | City | State |
|-------------|-----------|------|-------|
|-------------|-----------|------|-------|

## Antenna Location Data

| Section                        | Question  | Response                              |
|--------------------------------|---|---------------------------------------|
| Antenna Structure Registration | Do you have an FCC Antenna Structure Registration (ASR) Number? | Yes                                   |
|                                | ASR Number  | 1281655                               |
| Coordinates (NAD83)            | Latitude  | 36° 04' 38.6" N+                      |
|                                | Longitude   | 089° 29' 28.2" W-                     |
|                                | Structure Type  | TOWER-A free standing or guyed struct |
|                                | Overall Structure Height  | 79.2 meters                           |
|                                | Support Structure Height  | 79.2 meters                           |
|                                | Ground Elevation (AMSL)   | 140.8 meters                          |
| Antenna Data                   | Height of Radiation Center Above Ground Level                   | 65.2 meters                           |
|                                | Height of Radiation Center Above Mean Sea Level                 | 206.0 meters                          |
|                                | Effective Radiated Power  | 10 kW                                 |

**Antenna  
Technical Data**

| Section                        | Question  | Response           |
|--------------------------------|---|--------------------|
| Antenna Type                   | Antenna Type  | Directional Custom |
|                                | Do you have an Antenna ID?  | No                 |
|                                | Antenna ID  |                    |
| Antenna Manufacturer and Model | Manufacturer:   | Dielectric         |
|                                | Model   | TLP-6E             |
|                                | Rotation  | 110 degrees        |
|                                | Electrical Beam Tilt  | 0.5                |
|                                | Mechanical Beam Tilt  | Not Applicable     |
|                                | toward azimuth  |                    |
|                                | Polarization  | Horizontal         |
| Elevation Radiation Pattern    | Does the proposed antenna propose elevation radiation patterns that vary with azimuth for reasons other than the use of mechanical beam tilt? | No                 |
|                                | Uploaded file for elevation antenna (or radiation) pattern data   |                    |
|                                | Out-of-Channel Emission Mask:   | Full Service       |

**Directional Antenna Relative Field Values (Pre-rotated Pattern)**

| Degree | Value | Degree | Value | Degree | Value | Degree | Value |
|--------|-------|--------|-------|--------|-------|--------|-------|
| 0      | 1.000 | 90     | 0.231 | 180    | 0.240 | 270    | 0.254 |
| 10     | 0.995 | 100    | 0.195 | 190    | 0.226 | 280    | 0.301 |
| 20     | 0.945 | 110    | 0.162 | 200    | 0.197 | 290    | 0.369 |
| 30     | 0.848 | 120    | 0.137 | 210    | 0.164 | 300    | 0.459 |
| 40     | 0.725 | 130    | 0.127 | 220    | 0.136 | 310    | 0.570 |
| 50     | 0.590 | 140    | 0.139 | 230    | 0.128 | 320    | 0.693 |
| 60     | 0.457 | 150    | 0.166 | 240    | 0.153 | 330    | 0.820 |
| 70     | 0.346 | 160    | 0.198 | 250    | 0.190 | 340    | 0.928 |
| 80     | 0.277 | 170    | 0.225 | 260    | 0.222 | 350    | 0.988 |

**Additional Azimuths**

| Degree | V <sub>A</sub> |
|--------|----------------|
|--------|----------------|