



## ENGINEERING STATEMENT

In support of a request for

**Minor Modification to a Digital TV Translator or LPTV Station**

**K22MT-D CH22**

**Idabel, Oklahoma**

**Facility ID: 50174**

### PURPOSE

Intelligent Design and Services, Inc. (“iDSi”) has been retained by the Oklahoma Educational Television Authority (OETA), the “Applicant”, to prepare this engineering statement in support of a request for a Minor Modification. The Applicant has an existing license, LMS 0000059597, for K22MT-D CH22 Digital TV Translator, Facility ID 50174. The Applicant proposes to move the transmitting antenna location with no change in frequency, and the resulting protected contour would overlap a portion of the protected contour of the authorized facilities of the existing station.

### DISCUSSION

The owner of the tower, Antenna Structure Registration Number (ASR) 1010991, where the K22MT-D facility is located will not renew the station’s lease and plans to dismantle the tower later this year. The Applicant proposes to relocate to a multi-use tower, ASR 1313116, approximately 12 miles away. This structure is much shorter than the one at the existing site resulting in a decrease in height as well as a change in location. To maintain a noise-limited contour over the City of License, Idabel, OK, and avoid interference to others from the proposed new location and height, the Applicant proposes to use a directional antenna pattern.

A summary of the proposed technical specifications follows:

Location: 34° 02' 57.3" Latitude  
94° 44' 10.2" Longitude (NAD83)  
ASR 1313116



Height: 81 m Radiation Center Above Ground  
ERP: 9.5 kW  
Antenna: Directional (rotation: 225° True North)

An interference study was performed using the proposed location, height, antenna pattern, and ERP utilizing the FCC TVStudy v2.2.5 software. The study result for this proposal indicates no unacceptable interference to others and is included as **Exhibit 1**.

FCC OET Bulletin No. 65 “Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields”, Edition 97-01, and has been found to comply with the limits set forth in Section 1.1310 of the Rules as shown in **Exhibit 2**. The total exposure as defined by the ANSI standard computations for occupational/controlled area is 0.028 % of the maximum. The total exposure as defined by the ANSI standard computations for general population/uncontrolled area is 0.138 % of the maximum.

The proposed coverage contour shown in **Exhibit 3**.

The proposed antenna technical information is shown in **Exhibit 4**.

## **CONCLUSION**

It is respectfully requested that the Commission grant this request for Minor Modification for the facility as specified herein.

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## DECLARATION

David Sanderford, E.I.T., declares and states that he is a graduate Electrical Engineer with a Bachelor of Science Degree in Electrical Engineering from the Georgia Institute of Technology, and his qualifications are known to the Federal Communications Commission. He is President of Intelligent Design and Services, Inc., a Registered Professional Engineering Firm in the State of Texas, and that firm has been retained by OETA, to perform the engineering support as contained in this report.

All facts contained herein are true of his own knowledge except where stated to be on information or belief provided by others, and as to those facts, he believes them to be true.

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I declare under penalty of perjury that the foregoing is true and correct.

\_\_\_\_\_  
David Sanderford  
President - iDSi

Executed this 23<sup>rd</sup> day of May, 2023



# EXHIBIT 1

tvstudy v2.2.5 (4uoc83)  
Database: localhost, Study: K22MT\_ODOT\_9.5 #17, Model: Longley-Rice  
Start: 2023.05.19 00:40:32

Study created: 2023.05.19 00:40:32

Study build station data: LMS TV 2023-05-17

Proposal: K22MT-D D22 LD LIC IDABEL, OK  
File number: K22MT\_ODOT\_9.5  
Facility ID: 50174  
Station data: User record  
Record ID: 18  
Country: U.S.

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

Stations potentially affected by proposal:

| IX  | Call    | Chan | Svc | Status | City, State        | File Number       | Distance |
|-----|---------|------|-----|--------|--------------------|-------------------|----------|
| No  | KTEV-LD | N19+ | TX  | LIC    | TEXARKANA, AR      | BLTTL20061211AAB  | 90.7 km  |
| Yes | KHBS    | D21  | DT  | LIC    | FORT SMITH, AR     | BLCDT20031121AMR  | 113.7    |
| No  | KKYK-CD | D21  | DC  | LIC    | LITTLE ROCK, AR    | BLANK0000062774   | 221.7    |
| No  | KVPO-LD | D21- | LD  | LIC    | SHREVEPORT, LA     | BLANK0000160538   | 176.9    |
| No  | KVPO-LD | D21  | LD  | CP     | SHREVEPORT, LA     | BLANK0000198683   | 182.5    |
| No  | KDTX-TV | D21  | DT  | LIC    | DALLAS, TX         | BLANK0000075181   | 263.4    |
| No  | K21PE-D | D21  | LD  | LIC    | TYLER, TX          | BLANK0000212512   | 173.7    |
| No  | K22HS-D | D22  | LD  | LIC    | EUREKA SPRINGS, AR | BLDTL20110517ADA  | 272.1    |
| No  | K22OC-D | D22  | LD  | LIC    | FORT SMITH, AR     | BLANK0000151094   | 159.1    |
| No  | K22OC-D | D22  | LD  | CP     | FORT SMITH, AR     | BLANK0000213944   | 159.1    |
| No  | KJNE-LD | D22z | LD  | LIC    | JONESBORO, AR      | BLANK0000055090   | 422.8    |
| No  | KATV    | D22  | DT  | LIC    | LITTLE ROCK, AR    | BLANK0000212657   | 222.2    |
| No  | K22OW-D | D22  | LD  | APP    | ALEXANDRIA, LA     | BLANK0000212612   | 381.9    |
| No  | K22NI-D | D22  | LD  | LIC    | LEESVILLE, LA      | BLANK0000064144   | 344.2    |
| No  | KMCT-TV | D22  | DT  | LIC    | WEST MONROE, LA    | BLANK0000063151   | 295.3    |
| No  | KRBK    | D22  | DT  | LIC    | OSAGE BEACH, MO    | BLANK0000171221   | 387.5    |
| No  | K22JQ-D | D22  | LD  | CP     | ARDMORE, OK        | BLANK0000164280   | 206.1    |
| No  | K22JQ-D | D22  | LD  | LIC    | ARDMORE, OK        | BLDTL20140224ACC  | 222.4    |
| No  | KTOU-LD | D22  | LD  | LIC    | OKLAHOMA CITY, OK  | BLANK0000193102   | 293.0    |
| No  | KOKI-TV | D22  | DT  | LIC    | TULSA, OK          | BLCDT20021127AGL  | 235.9    |
| No  | KNAV-LD | D22  | LD  | LIC    | DALLAS, TX         | BLANK0000120153   | 263.4    |
| Yes | KETK-TV | D22  | DT  | LIC    | JACKSONVILLE, TX   | BMLCDT20120516ABW | 227.4    |
| No  | KGSW-LD | D22  | LD  | LIC    | KEENE, TX          | BLANK0000106132   | 302.7    |
| No  | K22NR-D | D22  | LD  | LIC    | STEPHENVILLE, TX   | BLANK0000074737   | 387.3    |
| No  | KAUZ-TV | D22  | DT  | LIC    | WICHITA FALLS, TX  | BLCDT20090724ACR  | 350.9    |
| No  | K23OW-D | D23  | LD  | LIC    | HOT SPRINGS, AR    | BLANK0000087667   | 179.4    |
| No  | KSLA    | D23  | DT  | LIC    | SHREVEPORT, LA     | BLANK0000192887   | 170.0    |
| No  | KQDA-LD | D23  | LD  | CP     | DENISON, TX        | BLANK0000001210   | 169.4    |
| No  | KQDA-LD | D23  | LD  | LIC    | DENISON, TX        | BLDTL20150106ABO  | 153.1    |
| No  | KTXD-TV | D23  | DT  | LIC    | GREENVILLE, TX     | BLANK0000080284   | 263.4    |
| No  | KVPO-LD | N30- | TX  | LIC    | SHREVEPORT, LA     | BLTTL19950412IB   | 91.4     |

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D22  
Mask: Full Service  
Latitude: 34 2 57.30 N (NAD83)  
Longitude: 94 44 10.20 W  
Height AMSL: 229.7 m  
HAAT: 0.0 m  
Peak ERP: 9.50 kW



Antenna: DLP-C 0.0 deg  
 Elev Pattn: Generic  
 Elec Tilt: 1.00

49.6 dBU contour:

| Azimuth | ERP     | HAAT   | Distance |
|---------|---------|--------|----------|
| 0.0 deg | 1.44 kW | 31.7 m | 20.4 km  |
| 45.0    | 2.64    | 31.3   | 23.1     |
| 90.0    | 1.62    | 98.9   | 33.1     |
| 135.0   | 3.31    | 114.4  | 38.3     |
| 180.0   | 7.73    | 114.5  | 42.6     |
| 225.0   | 9.50    | 109.6  | 43.1     |
| 270.0   | 7.42    | 91.1   | 39.8     |
| 315.0   | 2.84    | 46.8   | 27.7     |

Database HAAT does not agree with computed HAAT  
 Database HAAT: 0 m Computed HAAT: 80 m

Distance to Canadian border: 1339.4 km

Distance to Mexican border: 783.0 km

Conditions at FCC monitoring station: Kingsville TX  
 Bearing: 203.1 degrees Distance: 793.5 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:  
 Bearing: 309.0 degrees Distance: 1147.6 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 BLCDT20031121AMR LIC scenario 1

| Desired:    | Call    | Chan | Svc | Status | City, State       | File Number      | Distance |
|-------------|---------|------|-----|--------|-------------------|------------------|----------|
|             | KHBS    | D21  | DT  | LIC    | FORT SMITH, AR    | BLCDT20031121AMR |          |
| Undesireds: | K22MT-D | D22  | LD  | LIC    | IDABEL, OK        | K22MT_ODOT_9.5   | 113.7 km |
|             | KQCW-DT | D20  | DT  | CP     | MUSKOGEE, OK      | BLANK0000211781  | 138.8    |
|             | KKYK-CD | D21  | DC  | LIC    | LITTLE ROCK, AR   | BLANK0000062774  | 201.2    |
|             | KUOT-CD | D21  | DC  | LIC    | OKLAHOMA CITY, OK | BLANK0000069721  | 254.8    |
|             | KDTX-TV | D21  | DT  | LIC    | DALLAS, TX        | BLANK0000075181  | 347.6    |
|             | KATV    | D22  | DT  | LIC    | LITTLE ROCK, AR   | BLANK0000212657  | 201.8    |
|             | KOKI-TV | D22  | DT  | LIC    | TULSA, OK         | BLCDT20021127AGL | 139.5    |

| Service area | Terrain-limited | IX-free, before | IX-free, after | Percent New IX |
|--------------|-----------------|-----------------|----------------|----------------|
| 40307.6      | 632,382         | 35763.8         | 609,980        | 33989.6        |
|              |                 | 564,299         | 33984.6        | 564,254        |
|              |                 |                 |                | 0.01           |
|              |                 |                 |                | 0.01           |

| Undesired          | Total IX | Unique IX, before | Unique IX, after |
|--------------------|----------|-------------------|------------------|
| K22MT-D D22 LD LIC | 29.9     | 123               | 5.0              |
| KQCW-DT D20 DT CP  | 941.1    | 33,028            | 120.8            |
| KKYK-CD D21 DC LIC | 176.5    | 2,903             | 166.5            |
| KUOT-CD D21 DC LIC | 1.0      | 0                 | 1.0              |
| KDTX-TV D21 DT LIC | 475.0    | 944               | 475.0            |
| KATV D22 DT LIC    | 12.0     | 5                 | 2.0              |
| KOKI-TV D22 DT LIC | 998.9    | 38,560            | 178.6            |
|                    |          |                   | 8,806            |
|                    |          |                   | 178.6            |
|                    |          |                   | 8,806            |

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 Interference to BLCDT20031121AMR LIC scenario 2

| Desired:    | Call    | Chan | Svc | Status | City, State    | File Number      | Distance |
|-------------|---------|------|-----|--------|----------------|------------------|----------|
|             | KHBS    | D21  | DT  | LIC    | FORT SMITH, AR | BLCDT20031121AMR |          |
| Undesireds: | K22MT-D | D22  | LD  | LIC    | IDABEL, OK     | K22MT_ODOT_9.5   | 113.7 km |



|         |     |    |     |                   |                   |       |
|---------|-----|----|-----|-------------------|-------------------|-------|
| KQCW-DT | D20 | DT | LIC | MUSKOGEE, OK      | BMLCDT20130823ACR | 127.0 |
| KKYK-CD | D21 | DC | LIC | LITTLE ROCK, AR   | BLANK0000062774   | 201.2 |
| KUOT-CD | D21 | DC | LIC | OKLAHOMA CITY, OK | BLANK0000069721   | 254.8 |
| KDTX-TV | D21 | DT | LIC | DALLAS, TX        | BLANK0000075181   | 347.6 |
| KATV    | D22 | DT | LIC | LITTLE ROCK, AR   | BLANK0000212657   | 201.8 |
| KOKI-TV | D22 | DT | LIC | TULSA, OK         | BLCDDT20021127AGL | 139.5 |

|              |         |                 |         |                 |         |                |         |                |      |
|--------------|---------|-----------------|---------|-----------------|---------|----------------|---------|----------------|------|
| Service area |         | Terrain-limited |         | IX-free, before |         | IX-free, after |         | Percent New IX |      |
| 40307.6      | 632,382 | 35763.8         | 609,980 | 34000.1         | 564,930 | 33995.1        | 564,885 | 0.01           | 0.01 |

|                    |       |  |          |       |                   |       |                  |  |
|--------------------|-------|--|----------|-------|-------------------|-------|------------------|--|
| Undesired          |       |  | Total IX |       | Unique IX, before |       | Unique IX, after |  |
| K22MT-D D22 LD LIC | 29.9  |  | 123      |       |                   | 5.0   | 45               |  |
| KQCW-DT D20 DT LIC | 636.3 |  | 13,203   | 110.3 | 2,643             | 110.3 | 2,643            |  |
| KKYK-CD D21 DC LIC | 176.5 |  | 2,903    | 166.5 | 2,898             | 166.5 | 2,898            |  |
| KUOT-CD D21 DC LIC | 1.0   |  | 0        | 1.0   | 0                 | 1.0   | 0                |  |
| KDTX-TV D21 DT LIC | 475.0 |  | 944      | 475.0 | 944               | 450.1 | 866              |  |
| KATV D22 DT LIC    | 12.0  |  | 5        | 2.0   | 0                 | 2.0   | 0                |  |
| KOKI-TV D22 DT LIC | 998.9 |  | 38,560   | 472.9 | 28,000            | 472.9 | 28,000           |  |

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Interference to BMLCDT20120516ABW LIC scenario 1

|             |         |      |     |        |                  |                   |          |
|-------------|---------|------|-----|--------|------------------|-------------------|----------|
| Desired:    | Call    | Chan | Svc | Status | City, State      | File Number       | Distance |
|             | KETK-TV | D22  | DT  | LIC    | JACKSONVILLE, TX | BMLCDT20120516ABW |          |
| Undesireds: | K22MT-D | D22  | LD  | LIC    | IDABEL, OK       | K22MT_ODOT_9.5    | 227.4 km |
|             | KDTX-TV | D21  | DT  | LIC    | DALLAS, TX       | BLANK0000075181   | 166.2    |
|             | KATV    | D22  | DT  | LIC    | LITTLE ROCK, AR  | BLANK0000212657   | 401.4    |
|             | KLRU    | D22  | DT  | LIC    | AUSTIN, TX       | BLEDT20040305ACK  | 305.6    |
|             | KTMD    | D22  | DT  | LIC    | GALVESTON, TX    | BLANK0000169199   | 277.4    |
|             | KSLA    | D23  | DT  | LIC    | SHREVEPORT, LA   | BLANK0000192887   | 146.5    |
|             | KTXD-TV | D23  | DT  | LIC    | GREENVILLE, TX   | BLANK0000080284   | 166.2    |

|              |           |                 |           |                 |           |                |           |                |      |
|--------------|-----------|-----------------|-----------|-----------------|-----------|----------------|-----------|----------------|------|
| Service area |           | Terrain-limited |           | IX-free, before |           | IX-free, after |           | Percent New IX |      |
| 36492.0      | 1,031,357 | 36328.9         | 1,030,318 | 34655.4         | 1,004,918 | 34643.4        | 1,004,721 | 0.03           | 0.02 |

|                    |       |  |          |       |                   |       |                  |  |
|--------------------|-------|--|----------|-------|-------------------|-------|------------------|--|
| Undesired          |       |  | Total IX |       | Unique IX, before |       | Unique IX, after |  |
| K22MT-D D22 LD LIC | 21.0  |  | 208      |       |                   | 12.0  | 197              |  |
| KDTX-TV D21 DT LIC | 35.1  |  | 505      | 0.0   | 0                 | 0.0   | 0                |  |
| KATV D22 DT LIC    | 24.0  |  | 205      | 7.0   | 43                | 2.0   | 43               |  |
| KLRU D22 DT LIC    | 114.9 |  | 481      | 20.3  | 0                 | 20.3  | 0                |  |
| KTMD D22 DT LIC    | 814.6 |  | 8,687    | 716.9 | 8,181             | 716.9 | 8,181            |  |
| KSLA D23 DT LIC    | 715.2 |  | 14,812   | 695.2 | 14,625            | 694.2 | 14,625           |  |
| KTXD-TV D23 DT LIC | 119.5 |  | 1,883    | 84.3  | 1,378             | 84.3  | 1,378            |  |

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Interference to proposal scenario 1

|             |         |      |     |        |                  |                   |          |
|-------------|---------|------|-----|--------|------------------|-------------------|----------|
| Desired:    | Call    | Chan | Svc | Status | City, State      | File Number       | Distance |
|             | K22MT-D | D22  | LD  | LIC    | IDABEL, OK       | K22MT_ODOT_9.5    |          |
| Undesireds: | K22OC-D | D22  | LD  | LIC    | FORT SMITH, AR   | BLANK0000151094   | 159.1 km |
|             | KATV    | D22  | DT  | LIC    | LITTLE ROCK, AR  | BLANK0000212657   | 222.2    |
|             | K22JQ-D | D22  | LD  | CP     | ARDMORE, OK      | BLANK0000164280   | 206.1    |
|             | KETK-TV | D22  | DT  | LIC    | JACKSONVILLE, TX | BMLCDT20120516ABW | 227.4    |

|              |        |                 |        |         |        |            |      |
|--------------|--------|-----------------|--------|---------|--------|------------|------|
| Service area |        | Terrain-limited |        | IX-free |        | Percent IX |      |
| 3779.1       | 32,112 | 3762.0          | 32,112 | 3708.8  | 31,995 | 1.41       | 0.36 |

|                    |      |  |          |      |           |                 |      |
|--------------------|------|--|----------|------|-----------|-----------------|------|
| Undesired          |      |  | Total IX |      | Unique IX | Prcnt Unique IX |      |
| KATV D22 DT LIC    | 11.9 |  | 93       | 7.9  | 72        | 0.21            | 0.22 |
| KETK-TV D22 DT LIC | 45.3 |  | 45       | 41.3 | 24        | 1.10            | 0.07 |



**EXHIBIT 2**

**ENVIRONMENTAL STATEMENT**

The proposed facility complies in full with the requirements of 47 C.F.R. Section 1.1306 and will have no significant environmental impact. Population is very scattered and sparse near the immediate location of the proposed site. The proposed site does not involve any of the conditions specified in Section 1.1307(a)(1) - (6) of the Rules.

The **K22MT-D** facility has been studied in accordance with the procedures set forth in the FCC OET Bulletin No. 65 “Evaluating Compliance With FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields”, Edition 97-01, and has been found to comply with the limits set forth in Section 1.1310 of the Rules. The total exposure attributable to this station as defined by the ANSI standard computations for occupational/controlled area is **0.03 %** of the maximum and is **0.14 %** of the maximum for general population/uncontrolled area. As this is less than the 5% limit set forth by the rules in Section 1.1307(b) for a multi-use tower site, the station is categorically excluded from taking action to bring the site into compliance should the guidelines be exceeded. The proposed facility complies with the Commission’s guidelines.

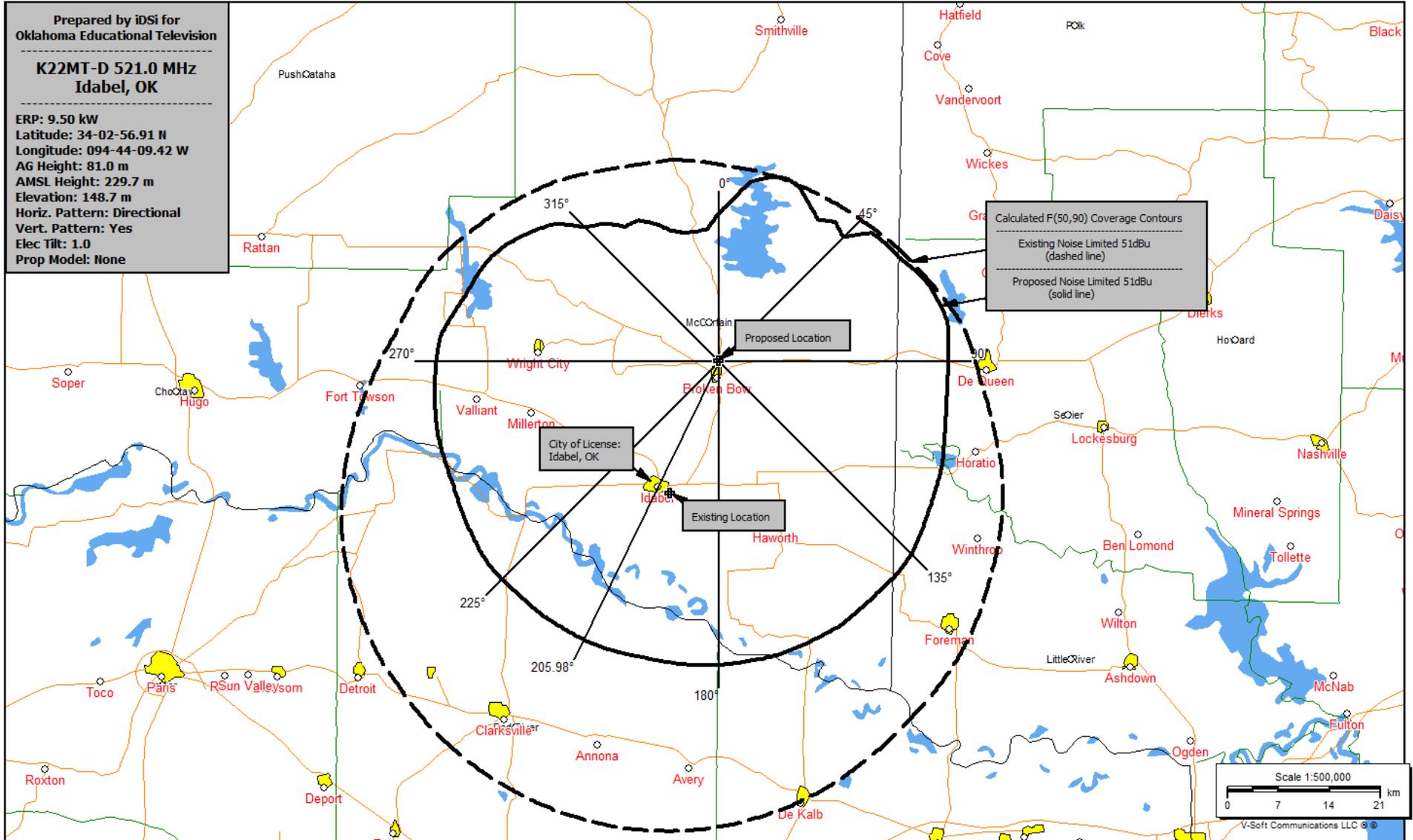
| <b>Multiple Use Tower</b>     |                           |                |                    |                                       |                                   |                                     |
|-------------------------------|---------------------------|----------------|--------------------|---------------------------------------|-----------------------------------|-------------------------------------|
| Location:                     | <b>K22MT-D Idabel, OK</b> |                |                    |                                       |                                   | 5/18/2023                           |
| <b>Channel Frequency Type</b> | <b>Call Letters</b>       | <b>Service</b> | <b>ERP (W) H+V</b> | <b>Ant Center of Radiation AG (m)</b> | <b>% of ANSI/FCC Limit (6min)</b> | <b>% of ANSI/FCC Limit (30 min)</b> |
| <b>22</b>                     | <b>K22MT-D</b>            | LPDTV          | 9,500              | 81.00                                 | 0.028                             | 0.138                               |
| <b>Total %</b>                |                           |                |                    |                                       | <b>0.028</b>                      | <b>0.138</b>                        |
| <b>IN COMPLIANCE</b>          |                           |                |                    |                                       |                                   |                                     |

The Oklahoma Educational Television Authority (Applicant) agrees to maintain full compliance with the safety precautions to workers on the tower (controlled) and the general public (uncontrolled) by reducing or removing radiated power during the time of construction or maintenance on or near the antenna. The Applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from Radiofrequency Electromagnetic exposure in excess of FCC guidelines.

The Applicant is believed to be in full compliance with the Environmental Impact and Commission Rules.



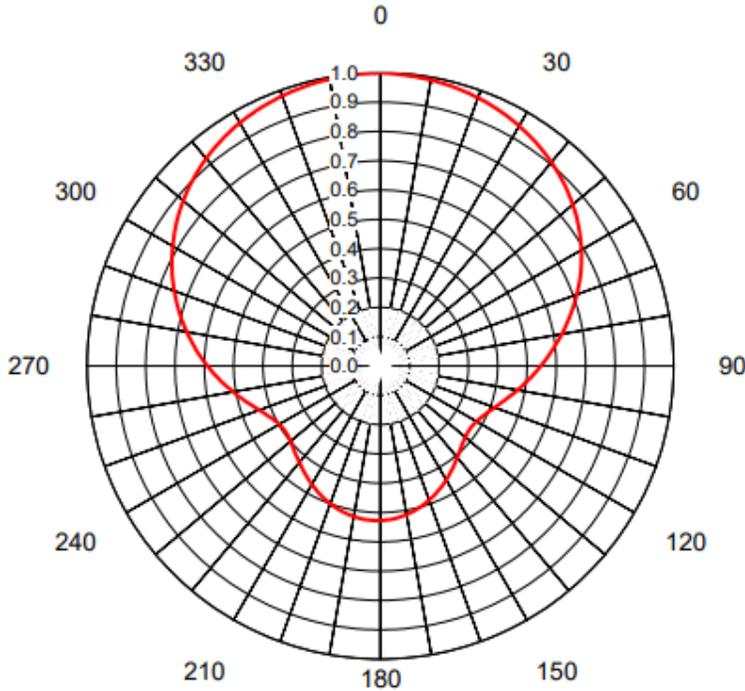
### EXHIBIT 3





**EXHIBIT 4**

**AZIMUTH PATTERN  
Horizontal Polarization**



Proposal No. **DVB 23025**  
 Date **19-May-23**  
 Call Letters **K22MT-D**  
 Channel **22**  
 Frequency **521 MHz**  
 Antenna Type **DLP-8C**  
 Gain **2.09 (3.2dB)**  
 Calculated

Pattern Number **TLP-C-22 Hpol**

| Deg | Value |
|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|
| 0   | 1.000 | 36  | 0.924 | 72  | 0.696 | 108 | 0.425 | 144 | 0.424 | 180 | 0.527 | 216 | 0.444 | 252 | 0.452 | 288 | 0.733 | 324 | 0.939 |
| 1   | 0.999 | 37  | 0.920 | 73  | 0.687 | 109 | 0.420 | 145 | 0.428 | 181 | 0.528 | 217 | 0.440 | 253 | 0.459 | 289 | 0.741 | 325 | 0.942 |
| 2   | 0.998 | 38  | 0.916 | 74  | 0.679 | 110 | 0.414 | 146 | 0.432 | 182 | 0.528 | 218 | 0.437 | 254 | 0.465 | 290 | 0.748 | 326 | 0.946 |
| 3   | 0.997 | 39  | 0.912 | 75  | 0.670 | 111 | 0.410 | 147 | 0.437 | 183 | 0.528 | 219 | 0.433 | 255 | 0.472 | 291 | 0.755 | 327 | 0.949 |
| 4   | 0.996 | 40  | 0.907 | 76  | 0.662 | 112 | 0.405 | 148 | 0.441 | 184 | 0.527 | 220 | 0.430 | 256 | 0.479 | 292 | 0.763 | 328 | 0.952 |
| 5   | 0.995 | 41  | 0.903 | 77  | 0.653 | 113 | 0.401 | 149 | 0.445 | 185 | 0.527 | 221 | 0.426 | 257 | 0.487 | 293 | 0.770 | 329 | 0.955 |
| 6   | 0.995 | 42  | 0.898 | 78  | 0.645 | 114 | 0.396 | 150 | 0.449 | 186 | 0.526 | 222 | 0.423 | 258 | 0.494 | 294 | 0.777 | 330 | 0.958 |
| 7   | 0.994 | 43  | 0.893 | 79  | 0.637 | 115 | 0.393 | 151 | 0.453 | 187 | 0.525 | 223 | 0.419 | 259 | 0.502 | 295 | 0.784 | 331 | 0.960 |
| 8   | 0.993 | 44  | 0.889 | 80  | 0.628 | 116 | 0.389 | 152 | 0.457 | 188 | 0.524 | 224 | 0.416 | 260 | 0.510 | 296 | 0.791 | 332 | 0.963 |
| 9   | 0.992 | 45  | 0.884 | 81  | 0.620 | 117 | 0.386 | 153 | 0.461 | 189 | 0.523 | 225 | 0.413 | 261 | 0.517 | 297 | 0.798 | 333 | 0.965 |
| 10  | 0.990 | 46  | 0.878 | 82  | 0.611 | 118 | 0.383 | 154 | 0.465 | 190 | 0.522 | 226 | 0.410 | 262 | 0.525 | 298 | 0.804 | 334 | 0.968 |
| 11  | 0.989 | 47  | 0.873 | 83  | 0.603 | 119 | 0.381 | 155 | 0.469 | 191 | 0.520 | 227 | 0.407 | 263 | 0.533 | 299 | 0.811 | 335 | 0.970 |
| 12  | 0.988 | 48  | 0.868 | 84  | 0.595 | 120 | 0.378 | 156 | 0.472 | 192 | 0.518 | 228 | 0.405 | 264 | 0.541 | 300 | 0.818 | 336 | 0.972 |
| 13  | 0.986 | 49  | 0.862 | 85  | 0.587 | 121 | 0.377 | 157 | 0.476 | 193 | 0.517 | 229 | 0.402 | 265 | 0.549 | 301 | 0.824 | 337 | 0.974 |
| 14  | 0.985 | 50  | 0.857 | 86  | 0.579 | 122 | 0.375 | 158 | 0.480 | 194 | 0.515 | 230 | 0.400 | 266 | 0.557 | 302 | 0.830 | 338 | 0.976 |
| 15  | 0.983 | 51  | 0.851 | 87  | 0.571 | 123 | 0.374 | 159 | 0.483 | 195 | 0.512 | 231 | 0.398 | 267 | 0.565 | 303 | 0.837 | 339 | 0.978 |
| 16  | 0.981 | 52  | 0.845 | 88  | 0.563 | 124 | 0.373 | 160 | 0.487 | 196 | 0.510 | 232 | 0.396 | 268 | 0.573 | 304 | 0.843 | 340 | 0.980 |
| 17  | 0.980 | 53  | 0.839 | 89  | 0.555 | 125 | 0.373 | 161 | 0.490 | 197 | 0.508 | 233 | 0.395 | 269 | 0.581 | 305 | 0.849 | 341 | 0.982 |
| 18  | 0.978 | 54  | 0.833 | 90  | 0.547 | 126 | 0.373 | 162 | 0.493 | 198 | 0.505 | 234 | 0.394 | 270 | 0.590 | 306 | 0.855 | 342 | 0.983 |
| 19  | 0.976 | 55  | 0.826 | 91  | 0.539 | 127 | 0.374 | 163 | 0.497 | 199 | 0.503 | 235 | 0.393 | 271 | 0.598 | 307 | 0.860 | 343 | 0.985 |
| 20  | 0.973 | 56  | 0.820 | 92  | 0.532 | 128 | 0.375 | 164 | 0.500 | 200 | 0.500 | 236 | 0.393 | 272 | 0.606 | 308 | 0.866 | 344 | 0.986 |
| 21  | 0.971 | 57  | 0.813 | 93  | 0.524 | 129 | 0.376 | 165 | 0.502 | 201 | 0.497 | 237 | 0.394 | 273 | 0.614 | 309 | 0.872 | 345 | 0.988 |
| 22  | 0.969 | 58  | 0.806 | 94  | 0.517 | 130 | 0.378 | 166 | 0.505 | 202 | 0.494 | 238 | 0.395 | 274 | 0.622 | 310 | 0.877 | 346 | 0.989 |
| 23  | 0.966 | 59  | 0.799 | 95  | 0.510 | 131 | 0.380 | 167 | 0.508 | 203 | 0.491 | 239 | 0.396 | 275 | 0.630 | 311 | 0.882 | 347 | 0.990 |
| 24  | 0.964 | 60  | 0.792 | 96  | 0.502 | 132 | 0.382 | 168 | 0.510 | 204 | 0.488 | 240 | 0.398 | 276 | 0.638 | 312 | 0.887 | 348 | 0.991 |
| 25  | 0.961 | 61  | 0.784 | 97  | 0.495 | 133 | 0.385 | 169 | 0.513 | 205 | 0.484 | 241 | 0.400 | 277 | 0.646 | 313 | 0.892 | 349 | 0.993 |
| 26  | 0.958 | 62  | 0.777 | 98  | 0.488 | 134 | 0.387 | 170 | 0.515 | 206 | 0.481 | 242 | 0.403 | 278 | 0.654 | 314 | 0.897 | 350 | 0.994 |
| 27  | 0.955 | 63  | 0.769 | 99  | 0.481 | 135 | 0.390 | 171 | 0.517 | 207 | 0.477 | 243 | 0.406 | 279 | 0.663 | 315 | 0.902 | 351 | 0.995 |
| 28  | 0.952 | 64  | 0.761 | 100 | 0.474 | 136 | 0.394 | 172 | 0.519 | 208 | 0.474 | 244 | 0.410 | 280 | 0.671 | 316 | 0.907 | 352 | 0.995 |
| 29  | 0.949 | 65  | 0.754 | 101 | 0.468 | 137 | 0.397 | 173 | 0.520 | 209 | 0.470 | 245 | 0.414 | 281 | 0.679 | 317 | 0.911 | 353 | 0.996 |
| 30  | 0.946 | 66  | 0.746 | 102 | 0.461 | 138 | 0.401 | 174 | 0.522 | 210 | 0.467 | 246 | 0.419 | 282 | 0.686 | 318 | 0.916 | 354 | 0.997 |
| 31  | 0.942 | 67  | 0.737 | 103 | 0.455 | 139 | 0.404 | 175 | 0.523 | 211 | 0.463 | 247 | 0.423 | 283 | 0.694 | 319 | 0.920 | 355 | 0.998 |
| 32  | 0.939 | 68  | 0.729 | 104 | 0.448 | 140 | 0.408 | 176 | 0.524 | 212 | 0.459 | 248 | 0.429 | 284 | 0.702 | 320 | 0.924 | 356 | 0.998 |
| 33  | 0.935 | 69  | 0.721 | 105 | 0.442 | 141 | 0.412 | 177 | 0.525 | 213 | 0.455 | 249 | 0.434 | 285 | 0.710 | 321 | 0.928 | 357 | 0.999 |
| 34  | 0.932 | 70  | 0.713 | 106 | 0.436 | 142 | 0.416 | 178 | 0.526 | 214 | 0.452 | 250 | 0.440 | 286 | 0.718 | 322 | 0.932 | 358 | 0.999 |
| 35  | 0.928 | 71  | 0.704 | 107 | 0.430 | 143 | 0.420 | 179 | 0.527 | 215 | 0.448 | 251 | 0.446 | 287 | 0.725 | 323 | 0.935 | 359 | 0.999 |

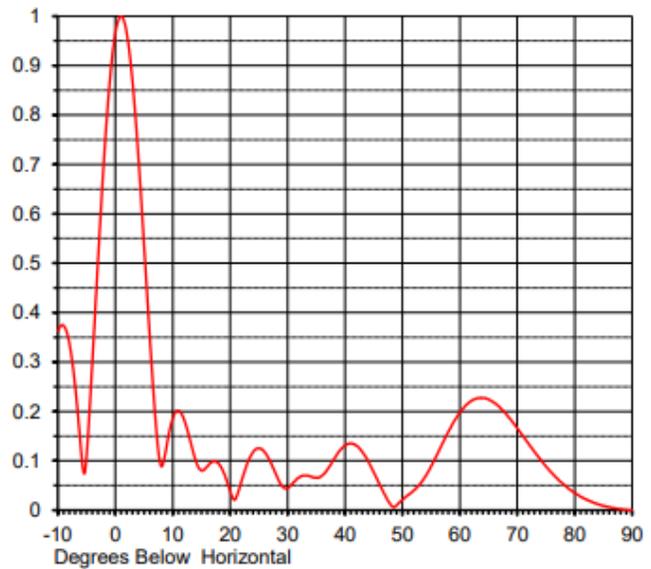
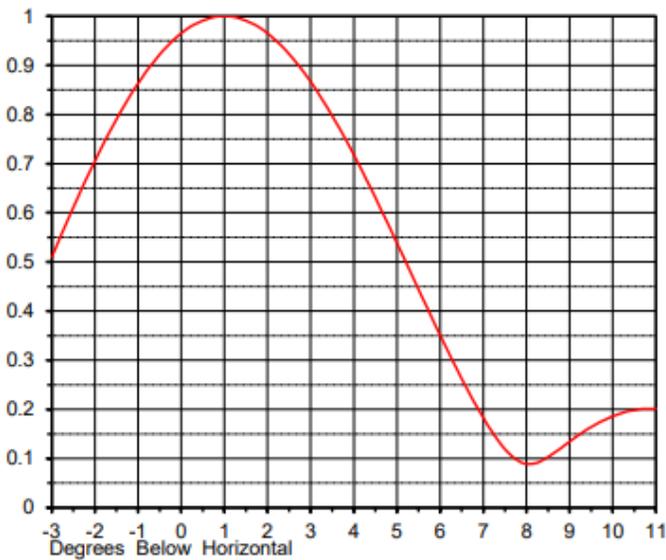


## ELEVATION PATTERN

Proposal No. **DVB 23025**  
 Date **19-May-23**  
 Call Letters **K22MT-D**  
 Channel **22**  
 Frequency **521 MHz**  
 Antenna Type **DLP-8C**

RMS Directivity at Main Lobe **8.1 ( 9.10 dB )**  
 RMS Directivity at Horizontal **7.6 ( 8.81 dB )**  
**Calculated**

Beam Tilt **1.00 deg**  
 Pattern Number **08L081100-22**



| Angle | Field |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| -10.0 | 0.363 | 10.0  | 0.186 | 30.0  | 0.045 | 50.0  | 0.021 | 70.0  | 0.166 |
| -9.0  | 0.373 | 11.0  | 0.201 | 31.0  | 0.056 | 51.0  | 0.031 | 71.0  | 0.150 |
| -8.0  | 0.338 | 12.0  | 0.183 | 32.0  | 0.066 | 52.0  | 0.040 | 72.0  | 0.134 |
| -7.0  | 0.252 | 13.0  | 0.143 | 33.0  | 0.070 | 53.0  | 0.052 | 73.0  | 0.118 |
| -6.0  | 0.125 | 14.0  | 0.101 | 34.0  | 0.068 | 54.0  | 0.068 | 74.0  | 0.103 |
| -5.0  | 0.110 | 15.0  | 0.080 | 35.0  | 0.065 | 55.0  | 0.089 | 75.0  | 0.089 |
| -4.0  | 0.299 | 16.0  | 0.088 | 36.0  | 0.070 | 56.0  | 0.112 | 76.0  | 0.076 |
| -3.0  | 0.510 | 17.0  | 0.099 | 37.0  | 0.083 | 57.0  | 0.136 | 77.0  | 0.064 |
| -2.0  | 0.705 | 18.0  | 0.094 | 38.0  | 0.102 | 58.0  | 0.159 | 78.0  | 0.053 |
| -1.0  | 0.863 | 19.0  | 0.073 | 39.0  | 0.119 | 59.0  | 0.180 | 79.0  | 0.043 |
| 0.0   | 0.965 | 20.0  | 0.039 | 40.0  | 0.131 | 60.0  | 0.198 | 80.0  | 0.035 |
| 1.0   | 1.000 | 21.0  | 0.024 | 41.0  | 0.135 | 61.0  | 0.212 | 81.0  | 0.028 |
| 2.0   | 0.965 | 22.0  | 0.060 | 42.0  | 0.131 | 62.0  | 0.221 | 82.0  | 0.022 |
| 3.0   | 0.867 | 23.0  | 0.095 | 43.0  | 0.118 | 63.0  | 0.226 | 83.0  | 0.017 |
| 4.0   | 0.718 | 24.0  | 0.118 | 44.0  | 0.100 | 64.0  | 0.227 | 84.0  | 0.012 |
| 5.0   | 0.538 | 25.0  | 0.125 | 45.0  | 0.077 | 65.0  | 0.224 | 85.0  | 0.009 |
| 6.0   | 0.351 | 26.0  | 0.118 | 46.0  | 0.053 | 66.0  | 0.217 | 86.0  | 0.006 |
| 7.0   | 0.183 | 27.0  | 0.098 | 47.0  | 0.030 | 67.0  | 0.208 | 87.0  | 0.004 |
| 8.0   | 0.089 | 28.0  | 0.072 | 48.0  | 0.010 | 68.0  | 0.195 | 88.0  | 0.002 |
| 9.0   | 0.134 | 29.0  | 0.049 | 49.0  | 0.010 | 69.0  | 0.181 | 89.0  | 0.001 |
|       |       |       |       |       |       | 90.0  | 0.000 | 90.0  | 0.000 |