

SECOND ADJACENT WAIVER REQUEST

Applicant requests a waiver of the Second Adjacent minimum spacing requirements stated in §73.807 of the FCC rules using U/D no-population inference protocol. The channel second adjacent to proposed are as followed:

|         |               |         |      |     |       |          |
|---------|---------------|---------|------|-----|-------|----------|
| CALL    | COL           | CH/CLS  | DIST | ERP | HAAT  | Field    |
| KMVQ-FM | SAN FRANCISCO | CA 259B | 17.1 | 40  | 383.6 | 88.7 dBu |

At the proposed facility site, KMVQ-FM San Francisco has an estimated signal strength of 88.7 dBu. **50 watts ERP requested (minimum LPFM facilities)**

Contour protection to second adjacent station KMVQ-FM is provided using the ratio method. Using the appropriate U/D ratio of 40 db, the corresponding interfering contour of the proposed facility is thus 128.7 dBu. At 50 watts, this contour would extend to a distance of 18.2 meters from the antenna. However, the field strength of the proposed LPFM's antenna system falls quickly at depression angles below the horizon. Using elevation pattern data provided by Bext (Telecom), the distance to the 128.7 dBu contour at various depression angles is tabulated below. The data shows that the lowest point at which the signal strength rises to 128.6 dBu is 5.8 meters below the center of radiation of the antenna system, or 3.2 meters above the ground. Therefore, this is sufficient clearance, and the interference area encompasses zero population. The table below show that the lowest elevation point of the 128.7 dBu F(50,10) interfering contour is 3.2 meters above the ground. Thus, the applicant requests second adjacent waiver based upon evidence no interference is proposed.

Applicant proposes using a 2-bay (half-wave spacing) Bext Telecom TFC2K antenna. Data for the elevation pattern provided by Bext is attached to this application.

Field Strength at Depression Angles

| MAX ERP | DEPRESSION<br>ANGLE<br>BELOW<br>HORIZON | RELATIVE<br>FIELD | dB FROM<br>RELATIVE | ERP   | ANGULAR<br>DISTANCE<br>TO 124.25<br>dBu<br>CONTOUR | VERTICAL<br>DISTANCE<br>(below<br>antenna) | HORIZONTAL<br>DISTANCE TO<br>125.25 dBu<br>CONTOUR | CLEARANCE<br>OF CONTOUR<br>ABOVE<br>GROUND |
|---------|---|-------------------|---------------------|-------|--|--|--|--|
| 50      | 0.3                                     | 1                 | 0.000               | 50.00 | 18.2   | 0  | 18.1   | 9  |
| 50      | 0.6                                     | 0.999             | -0.009              | 49.90 | 18.1   | 0.1  | 18   | 8.9  |
| 50      | 0.8                                     | 0.998             | -0.017              | 49.80 | 18.1   | 0.2  | 18   | 8.8  |
| 50      | 1.1                                     | 0.997             | -0.026              | 49.70 | 18.1   | 0.3  | 18   | 8.7  |
| 50      | 1.4                                     | 0.996             | -0.035              | 49.60 | 18.1   | 0.4  | 18   | 8.6  |
| 50      | 1.7                                     | 0.995             | -0.044              | 49.50 | 18.1   | 0.5  | 18   | 8.5  |
| 50      | 2                                       | 0.994             | -0.052              | 49.40 | 18   | 0.6  | 17.9   | 8.4  |
| 50      | 2.2                                     | 0.992             | -0.070              | 49.20 | 18   | 0.6  | 17.9   | 8.4  |
| 50      | 2.5                                     | 0.99              | -0.087              | 49.01 | 18   | 0.7  | 17.9   | 8.3  |
| 50      | 2.8                                     | 0.988             | -0.105              | 48.81 | 17.9   | 0.8  | 17.8   | 8.2  |
| 50      | 3.1                                     | 0.986             | -0.122              | 48.61 | 17.9   | 0.9  | 17.8   | 8.1  |
| 50      | 3.4                                     | 0.984             | -0.140              | 48.41 | 17.9   | 1  | 17.8   | 8  |
| 50      | 3.6                                     | 0.981             | -0.167              | 48.12 | 17.8   | 1.1  | 17.7   | 7.9  |
| 50      | 3.9                                     | 0.978             | -0.193              | 47.82 | 17.8   | 1.2  | 17.7   | 7.8  |
| 50      | 4.2                                     | 0.976             | -0.211              | 47.63 | 17.7   | 1.2  | 17.6   | 7.8  |
| 50      | 4.5                                     | 0.973             | -0.238              | 47.34 | 17.7   | 1.3  | 17.6   | 7.7  |
| 50      | 4.8                                     | 0.97              | -0.265              | 47.05 | 17.6   | 1.4  | 17.5   | 7.6  |
| 50      | 5                                       | 0.967             | -0.291              | 46.75 | 17.6   | 1.5  | 17.5   | 7.5  |
| 50      | 5.3                                     | 0.964             | -0.318              | 46.46 | 17.5   | 1.6  | 17.4   | 7.4  |
| 50      | 5.6                                     | 0.961             | -0.346              | 46.18 | 17.4   | 1.6  | 17.3   | 7.4  |
| 50      | 5.9                                     | 0.957             | -0.382              | 45.79 | 17.4   | 1.7  | 17.3   | 7.3  |
| 50      | 6.2                                     | 0.954             | -0.409              | 45.51 | 17.3   | 1.8  | 17.1   | 7.2  |
| 50      | 6.4                                     | 0.95              | -0.446              | 45.13 | 17.2   | 1.9  | 17   | 7.1  |
| 50      | 6.7                                     | 0.946             | -0.482              | 44.75 | 17.2   | 2  | 17   | 7  |
| 50      | 7                                       | 0.942             | -0.519              | 44.37 | 17.1   | 2  | 16.9   | 7  |
| 50      | 7.3                                     | 0.939             | -0.547              | 44.09 | 17   | 2.1  | 16.8   | 6.9  |
| 50      | 7.6                                     | 0.935             | -0.584              | 43.71 | 17   | 2.2  | 16.8   | 6.8  |
| 50      | 7.8                                     | 0.931             | -0.621              | 43.34 | 16.9   | 2.2  | 16.7   | 6.8  |
| 50      | 8.1                                     | 0.927             | -0.658              | 42.97 | 16.8   | 2.3  | 16.6   | 6.7  |
| 50      | 8.4                                     | 0.923             | -0.696              | 42.60 | 16.8   | 2.4  | 16.6   | 6.6  |
| 50      | 8.7                                     | 0.919             | -0.734              | 42.23 | 16.7   | 2.5  | 16.5   | 6.5  |
| 50      | 9                                       | 0.915             | -0.772              | 41.86 | 16.6   | 2.5  | 16.3   | 6.5  |
| 50      | 9.2                                     | 0.911             | -0.810              | 41.50 | 16.5   | 2.6  | 16.2   | 6.4  |
| 50      | 9.5                                     | 0.906             | -0.857              | 41.04 | 16.4   | 2.7  | 16.1   | 6.3  |
| 50      | 9.8                                     | 0.902             | -0.896              | 40.68 | 16.4   | 2.7  | 16.1   | 6.3  |
| 50      | 10.1                                    | 0.898             | -0.934              | 40.32 | 16.3   | 2.8  | 16   | 6.2  |

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|----|------|-------|--------|-------|------|-----|------|-----|
| 50 | 10.4 | 0.894 | -0.973 | 39.96 | 16.2 | 2.9 | 15.9 | 6.1 |
| 50 | 10.6 | 0.89  | -1.012 | 39.61 | 16.2 | 2.9 | 15.9 | 6.1 |
| 50 | 10.9 | 0.885 | -1.061 | 39.16 | 16.1 | 3   | 15.8 | 6   |
| 50 | 11.2 | 0.881 | -1.100 | 38.81 | 16   | 3.1 | 15.6 | 5.9 |
| 50 | 11.5 | 0.877 | -1.140 | 38.46 | 15.9 | 3.1 | 15.5 | 5.9 |
| 50 | 11.8 | 0.873 | -1.180 | 38.11 | 15.8 | 3.2 | 15.4 | 5.8 |
| 50 | 12   | 0.869 | -1.220 | 37.76 | 15.8 | 3.2 | 15.4 | 5.8 |
| 50 | 12.3 | 0.864 | -1.270 | 37.32 | 15.7 | 3.3 | 15.3 | 5.7 |
| 50 | 12.6 | 0.86  | -1.310 | 36.98 | 15.6 | 3.4 | 15.2 | 5.6 |
| 50 | 12.9 | 0.856 | -1.351 | 36.64 | 15.5 | 3.4 | 15.1 | 5.6 |
| 50 | 13.2 | 0.852 | -1.391 | 36.30 | 15.5 | 3.5 | 15   | 5.5 |
| 50 | 13.4 | 0.848 | -1.432 | 35.96 | 15.4 | 3.5 | 14.9 | 5.5 |
| 50 | 13.7 | 0.844 | -1.473 | 35.62 | 15.3 | 3.6 | 14.8 | 5.4 |
| 50 | 14   | 0.84  | -1.514 | 35.28 | 15.2 | 3.6 | 14.7 | 5.4 |
| 50 | 14.3 | 0.836 | -1.556 | 34.94 | 15.2 | 3.7 | 14.7 | 5.3 |
| 50 | 14.6 | 0.832 | -1.598 | 34.61 | 15.1 | 3.8 | 14.6 | 5.2 |
| 50 | 14.8 | 0.828 | -1.639 | 34.28 | 15   | 3.8 | 14.5 | 5.2 |
| 50 | 15.1 | 0.824 | -1.681 | 33.95 | 15   | 3.9 | 14.4 | 5.1 |
| 50 | 15.4 | 0.82  | -1.724 | 33.62 | 14.9 | 3.9 | 14.3 | 5.1 |
| 50 | 15.7 | 0.817 | -1.756 | 33.37 | 14.8 | 4   | 14.2 | 5   |
| 50 | 16   | 0.813 | -1.798 | 33.05 | 14.8 | 4   | 14.2 | 5   |
| 50 | 16.2 | 0.809 | -1.841 | 32.72 | 14.7 | 4   | 14.1 | 5   |
| 50 | 16.5 | 0.806 | -1.873 | 32.48 | 14.6 | 4.1 | 13.9 | 4.9 |
| 50 | 16.8 | 0.802 | -1.917 | 32.16 | 14.6 | 4.2 | 13.9 | 4.8 |
| 50 | 17.1 | 0.798 | -1.960 | 31.84 | 14.5 | 4.2 | 13.8 | 4.8 |
| 50 | 17.4 | 0.795 | -1.993 | 31.60 | 14.4 | 4.3 | 13.7 | 4.7 |
| 50 | 17.6 | 0.792 | -2.025 | 31.36 | 14.4 | 4.3 | 13.7 | 4.7 |
| 50 | 17.9 | 0.789 | -2.058 | 31.13 | 14.3 | 4.3 | 13.6 | 4.7 |
| 50 | 18.2 | 0.785 | -2.103 | 30.81 | 14.2 | 4.4 | 13.4 | 4.6 |
| 50 | 18.5 | 0.782 | -2.136 | 30.58 | 14.2 | 4.5 | 13.4 | 4.5 |
| 50 | 18.8 | 0.779 | -2.169 | 30.34 | 14.1 | 4.5 | 13.3 | 4.5 |
| 50 | 19   | 0.775 | -2.214 | 30.03 | 14.1 | 4.5 | 13.3 | 4.5 |
| 50 | 19.3 | 0.772 | -2.248 | 29.80 | 14   | 4.6 | 13.2 | 4.4 |
| 50 | 19.6 | 0.769 | -2.281 | 29.57 | 14   | 4.6 | 13.1 | 4.4 |
| 50 | 19.9 | 0.766 | -2.315 | 29.34 | 13.9 | 4.7 | 13   | 4.3 |
| 50 | 20.2 | 0.763 | -2.350 | 29.11 | 13.8 | 4.7 | 12.9 | 4.3 |
| 50 | 20.4 | 0.76  | -2.384 | 28.88 | 13.8 | 4.8 | 12.9 | 4.2 |
| 50 | 20.7 | 0.757 | -2.418 | 28.65 | 13.7 | 4.8 | 12.8 | 4.2 |
| 50 | 21   | 0.754 | -2.453 | 28.43 | 13.7 | 4.9 | 12.7 | 4.1 |
| 50 | 21.3 | 0.751 | -2.487 | 28.20 | 13.6 | 4.9 | 12.6 | 4.1 |
| 50 | 21.6 | 0.748 | -2.522 | 27.98 | 13.6 | 5   | 12.6 | 4   |
| 50 | 21.8 | 0.745 | -2.557 | 27.75 | 13.5 | 5   | 12.5 | 4   |
| 50 | 22.1 | 0.742 | -2.592 | 27.53 | 13.5 | 5   | 12.5 | 4   |
| 50 | 22.4 | 0.739 | -2.627 | 27.31 | 13.4 | 5.1 | 12.3 | 3.9 |
| 50 | 22.7 | 0.736 | -2.662 | 27.08 | 13.3 | 5.1 | 12.2 | 3.9 |
| 50 | 23   | 0.733 | -2.698 | 26.86 | 13.3 | 5.1 | 12.2 | 3.9 |
| 50 | 23.2 | 0.73  | -2.734 | 26.65 | 13.2 | 5.1 | 12.1 | 3.9 |
| 50 | 23.5 | 0.727 | -2.769 | 26.43 | 13.2 | 5.2 | 12.1 | 3.8 |

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| 50 | 23.8 | 0.724 | -2.805 | 26.21 | 13.1 | 5.2 | 11.9 | 3.8 |
| 50 | 24.1 | 0.721 | -2.841 | 25.99 | 13.1 | 5.3 | 11.9 | 3.7 |
| 50 | 24.4 | 0.717 | -2.890 | 25.70 | 13   | 5.3 | 11.8 | 3.7 |
| 50 | 24.6 | 0.714 | -2.926 | 25.49 | 12.9 | 5.3 | 11.7 | 3.7 |
| 50 | 24.9 | 0.711 | -2.963 | 25.28 | 12.9 | 5.4 | 11.7 | 3.6 |
| 50 | 25.2 | 0.708 | -2.999 | 25.06 | 12.8 | 5.4 | 11.5 | 3.6 |
| 50 | 25.5 | 0.705 | -3.036 | 24.85 | 12.8 | 5.5 | 11.5 | 3.5 |
| 50 | 25.8 | 0.701 | -3.086 | 24.57 | 12.7 | 5.5 | 11.4 | 3.5 |
| 50 | 26   | 0.698 | -3.123 | 24.36 | 12.7 | 5.5 | 11.4 | 3.5 |
| 50 | 26.3 | 0.695 | -3.160 | 24.15 | 12.6 | 5.5 | 11.2 | 3.5 |
| 50 | 26.6 | 0.691 | -3.210 | 23.87 | 12.5 | 5.5 | 11.1 | 3.5 |
| 50 | 26.9 | 0.688 | -3.248 | 23.67 | 12.5 | 5.6 | 11.1 | 3.4 |
| 50 | 27.2 | 0.685 | -3.286 | 23.46 | 12.4 | 5.6 | 11   | 3.4 |
| 50 | 27.4 | 0.681 | -3.337 | 23.19 | 12.3 | 5.6 | 10.9 | 3.4 |
| 50 | 27.7 | 0.678 | -3.375 | 22.98 | 12.3 | 5.7 | 10.8 | 3.3 |
| 50 | 28   | 0.674 | -3.427 | 22.71 | 12.2 | 5.7 | 10.7 | 3.3 |
| 50 | 28.3 | 0.67  | -3.479 | 22.45 | 12.1 | 5.7 | 10.6 | 3.3 |
| 50 | 28.6 | 0.666 | -3.531 | 22.18 | 12.1 | 5.7 | 10.6 | 3.3 |
| 50 | 28.8 | 0.662 | -3.583 | 21.91 | 12   | 5.7 | 10.5 | 3.3 |
| 50 | 29.1 | 0.658 | -3.635 | 21.65 | 11.9 | 5.7 | 10.3 | 3.3 |
| 50 | 29.4 | 0.654 | -3.688 | 21.39 | 11.9 | 5.8 | 10.3 | 3.2 |
| 50 | 29.7 | 0.65  | -3.742 | 21.13 | 11.8 | 5.8 | 10.2 | 3.2 |
| 50 | 30   | 0.646 | -3.795 | 20.87 | 11.7 | 5.8 | 10.1 | 3.2 |
| 50 | 30.2 | 0.642 | -3.849 | 20.61 | 11.6 | 5.8 | 10   | 3.2 |
| 50 | 30.5 | 0.638 | -3.904 | 20.35 | 11.6 | 5.8 | 9.9  | 3.2 |
| 50 | 30.8 | 0.633 | -3.972 | 20.03 | 11.5 | 5.8 | 9.8  | 3.2 |
| 50 | 31.1 | 0.629 | -4.027 | 19.78 | 11.4 | 5.8 | 9.7  | 3.2 |
| 50 | 31.4 | 0.624 | -4.096 | 19.47 | 11.3 | 5.8 | 9.6  | 3.2 |
| 50 | 31.6 | 0.619 | -4.166 | 19.16 | 11.2 | 5.8 | 9.5  | 3.2 |
| 50 | 31.9 | 0.614 | -4.237 | 18.85 | 11.1 | 5.8 | 9.4  | 3.2 |
| 50 | 32.2 | 0.609 | -4.308 | 18.54 | 11   | 5.8 | 9.3  | 3.2 |
| 50 | 32.5 | 0.604 | -4.379 | 18.24 | 10.9 | 5.8 | 9.1  | 3.2 |
| 50 | 32.8 | 0.599 | -4.451 | 17.94 | 10.9 | 5.9 | 9.1  | 3.1 |
| 50 | 33   | 0.594 | -4.524 | 17.64 | 10.8 | 5.8 | 9    | 3.2 |
| 50 | 33.3 | 0.589 | -4.598 | 17.35 | 10.7 | 5.8 | 8.9  | 3.2 |
| 50 | 33.6 | 0.584 | -4.672 | 17.05 | 10.6 | 5.8 | 8.8  | 3.2 |
| 50 | 33.9 | 0.579 | -4.746 | 16.76 | 10.5 | 5.8 | 8.7  | 3.2 |
| 50 | 34.2 | 0.573 | -4.837 | 16.42 | 10.4 | 5.8 | 8.6  | 3.2 |
| 50 | 34.4 | 0.568 | -4.913 | 16.13 | 10.3 | 5.8 | 8.5  | 3.2 |
| 50 | 34.7 | 0.562 | -5.005 | 15.79 | 10.2 | 5.8 | 8.3  | 3.2 |
| 50 | 35   | 0.557 | -5.083 | 15.51 | 10.1 | 5.7 | 8.2  | 3.3 |
| 50 | 35.3 | 0.551 | -5.177 | 15.18 | 10   | 5.7 | 8.1  | 3.3 |
| 50 | 35.6 | 0.546 | -5.256 | 14.91 | 9.9  | 5.7 | 8    | 3.3 |
| 50 | 35.8 | 0.54  | -5.352 | 14.58 | 9.8  | 5.7 | 7.9  | 3.3 |
| 50 | 36.1 | 0.534 | -5.449 | 14.26 | 9.7  | 5.7 | 7.8  | 3.3 |
| 50 | 36.4 | 0.528 | -5.547 | 13.94 | 9.6  | 5.6 | 7.7  | 3.4 |
| 50 | 36.7 | 0.522 | -5.647 | 13.62 | 9.5  | 5.6 | 7.6  | 3.4 |
| 50 | 37   | 0.516 | -5.747 | 13.31 | 9.3  | 5.5 | 7.4  | 3.5 |

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| 50 | 37.2 | 0.51  | -5.849  | 13.01 | 9.2 | 5.5 | 7.3 | 3.5 |
| 50 | 37.5 | 0.504 | -5.951  | 12.70 | 9.1 | 5.5 | 7.2 | 3.5 |
| 50 | 37.8 | 0.498 | -6.055  | 12.40 | 9   | 5.5 | 7.1 | 3.5 |
| 50 | 38.1 | 0.492 | -6.161  | 12.10 | 8.9 | 5.4 | 7   | 3.6 |
| 50 | 38.4 | 0.485 | -6.285  | 11.76 | 8.8 | 5.4 | 6.8 | 3.6 |
| 50 | 38.6 | 0.479 | -6.393  | 11.47 | 8.7 | 5.4 | 6.8 | 3.6 |
| 50 | 38.9 | 0.473 | -6.503  | 11.19 | 8.6 | 5.3 | 6.6 | 3.7 |
| 50 | 39.2 | 0.466 | -6.632  | 10.86 | 8.4 | 5.3 | 6.5 | 3.7 |
| 50 | 39.5 | 0.46  | -6.745  | 10.58 | 8.3 | 5.2 | 6.4 | 3.8 |
| 50 | 39.8 | 0.454 | -6.859  | 10.31 | 8.2 | 5.2 | 6.3 | 3.8 |
| 50 | 40   | 0.447 | -6.994  | 9.99  | 8.1 | 5.2 | 6.2 | 3.8 |
| 50 | 40.3 | 0.441 | -7.111  | 9.72  | 8   | 5.1 | 6.1 | 3.9 |
| 50 | 40.6 | 0.435 | -7.230  | 9.46  | 7.9 | 5.1 | 6   | 3.9 |
| 50 | 40.9 | 0.428 | -7.371  | 9.16  | 7.7 | 5   | 5.8 | 4   |
| 50 | 41.2 | 0.422 | -7.494  | 8.90  | 7.6 | 5   | 5.7 | 4   |
| 50 | 41.4 | 0.415 | -7.639  | 8.61  | 7.5 | 4.9 | 5.6 | 4.1 |
| 50 | 41.7 | 0.408 | -7.787  | 8.32  | 7.4 | 4.9 | 5.5 | 4.1 |
| 50 | 42   | 0.402 | -7.915  | 8.08  | 7.3 | 4.8 | 5.4 | 4.2 |
| 50 | 42.3 | 0.395 | -8.068  | 7.80  | 7.1 | 4.7 | 5.2 | 4.3 |
| 50 | 42.6 | 0.389 | -8.201  | 7.57  | 7   | 4.7 | 5.1 | 4.3 |
| 50 | 42.8 | 0.383 | -8.336  | 7.33  | 6.9 | 4.6 | 5   | 4.4 |
| 50 | 43.1 | 0.376 | -8.496  | 7.07  | 6.8 | 4.6 | 4.9 | 4.4 |
| 50 | 43.4 | 0.37  | -8.636  | 6.85  | 6.7 | 4.6 | 4.8 | 4.4 |
| 50 | 43.7 | 0.363 | -8.802  | 6.59  | 6.6 | 4.5 | 4.7 | 4.5 |
| 50 | 44   | 0.357 | -8.947  | 6.37  | 6.4 | 4.4 | 4.6 | 4.6 |
| 50 | 44.2 | 0.351 | -9.094  | 6.16  | 6.3 | 4.3 | 4.5 | 4.7 |
| 50 | 44.5 | 0.344 | -9.269  | 5.92  | 6.2 | 4.3 | 4.4 | 4.7 |
| 50 | 44.8 | 0.338 | -9.422  | 5.71  | 6.1 | 4.2 | 4.3 | 4.8 |
| 50 | 45.1 | 0.332 | -9.577  | 5.51  | 6   | 4.2 | 4.2 | 4.8 |
| 50 | 45.4 | 0.326 | -9.736  | 5.31  | 5.9 | 4.1 | 4.1 | 4.9 |
| 50 | 45.6 | 0.319 | -9.924  | 5.09  | 5.8 | 4.1 | 4   | 4.9 |
| 50 | 45.9 | 0.313 | -10.089 | 4.90  | 5.6 | 4   | 3.8 | 5   |
| 50 | 46.2 | 0.307 | -10.257 | 4.71  | 5.5 | 3.9 | 3.8 | 5.1 |
| 50 | 46.5 | 0.301 | -10.429 | 4.53  | 5.4 | 3.9 | 3.7 | 5.1 |
| 50 | 46.8 | 0.295 | -10.604 | 4.35  | 5.3 | 3.8 | 3.6 | 5.2 |
| 50 | 47   | 0.289 | -10.782 | 4.18  | 5.2 | 3.8 | 3.5 | 5.2 |
| 50 | 47.3 | 0.283 | -10.964 | 4.00  | 5.1 | 3.7 | 3.4 | 5.3 |
| 50 | 47.6 | 0.277 | -11.150 | 3.84  | 5   | 3.6 | 3.3 | 5.4 |
| 50 | 47.9 | 0.272 | -11.309 | 3.70  | 4.9 | 3.6 | 3.2 | 5.4 |
| 50 | 48.2 | 0.266 | -11.502 | 3.54  | 4.8 | 3.5 | 3.2 | 5.5 |
| 50 | 48.4 | 0.26  | -11.701 | 3.38  | 4.7 | 3.5 | 3.1 | 5.5 |
| 50 | 48.7 | 0.254 | -11.903 | 3.23  | 4.6 | 3.4 | 3   | 5.6 |
| 50 | 49   | 0.249 | -12.076 | 3.10  | 4.5 | 3.3 | 2.9 | 5.7 |
| 50 | 49.3 | 0.243 | -12.288 | 2.95  | 4.4 | 3.3 | 2.8 | 5.7 |
| 50 | 49.6 | 0.238 | -12.468 | 2.83  | 4.3 | 3.2 | 2.7 | 5.8 |
| 50 | 49.8 | 0.233 | -12.653 | 2.71  | 4.2 | 3.2 | 2.7 | 5.8 |
| 50 | 50.1 | 0.227 | -12.879 | 2.58  | 4.1 | 3.1 | 2.6 | 5.9 |
| 50 | 50.4 | 0.222 | -13.073 | 2.46  | 4   | 3   | 2.5 | 6   |

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|----|------|-------|---------|------|-----|-----|-----|-----|
| 50 | 50.7 | 0.217 | -13.271 | 2.35 | 3.9 | 3   | 2.4 | 6   |
| 50 | 51   | 0.212 | -13.473 | 2.25 | 3.8 | 2.9 | 2.3 | 6.1 |
| 50 | 51.2 | 0.207 | -13.681 | 2.14 | 3.7 | 2.8 | 2.3 | 6.2 |
| 50 | 51.5 | 0.202 | -13.893 | 2.04 | 3.6 | 2.8 | 2.2 | 6.2 |
| 50 | 51.8 | 0.197 | -14.111 | 1.94 | 3.5 | 2.7 | 2.1 | 6.3 |
| 50 | 52.1 | 0.192 | -14.334 | 1.84 | 3.4 | 2.6 | 2   | 6.4 |
| 50 | 52.4 | 0.188 | -14.517 | 1.77 | 3.4 | 2.6 | 2   | 6.4 |
| 50 | 52.6 | 0.183 | -14.751 | 1.67 | 3.3 | 2.6 | 2   | 6.4 |
| 50 | 52.9 | 0.178 | -14.992 | 1.58 | 3.2 | 2.5 | 1.9 | 6.5 |
| 50 | 53.2 | 0.174 | -15.189 | 1.51 | 3.1 | 2.4 | 1.8 | 6.6 |
| 50 | 53.5 | 0.17  | -15.391 | 1.45 | 3   | 2.4 | 1.7 | 6.6 |
| 50 | 53.8 | 0.165 | -15.650 | 1.36 | 3   | 2.4 | 1.7 | 6.6 |
| 50 | 54   | 0.161 | -15.863 | 1.30 | 2.9 | 2.3 | 1.7 | 6.7 |
| 50 | 54.3 | 0.157 | -16.082 | 1.23 | 2.8 | 2.2 | 1.6 | 6.8 |
| 50 | 54.6 | 0.153 | -16.306 | 1.17 | 2.7 | 2.2 | 1.5 | 6.8 |
| 50 | 54.9 | 0.149 | -16.536 | 1.11 | 2.7 | 2.2 | 1.5 | 6.8 |
| 50 | 55.2 | 0.145 | -16.773 | 1.05 | 2.6 | 2.1 | 1.4 | 6.9 |
| 50 | 55.4 | 0.141 | -17.016 | 0.99 | 2.5 | 2   | 1.4 | 7   |
| 50 | 55.7 | 0.137 | -17.266 | 0.94 | 2.4 | 1.9 | 1.3 | 7.1 |
| 50 | 56   | 0.133 | -17.523 | 0.88 | 2.4 | 1.9 | 1.3 | 7.1 |
| 50 | 56.3 | 0.13  | -17.721 | 0.84 | 2.3 | 1.9 | 1.2 | 7.1 |
| 50 | 56.6 | 0.126 | -17.993 | 0.79 | 2.2 | 1.8 | 1.2 | 7.2 |
| 50 | 56.8 | 0.122 | -18.273 | 0.74 | 2.2 | 1.8 | 1.2 | 7.2 |
| 50 | 57.1 | 0.119 | -18.489 | 0.71 | 2.1 | 1.7 | 1.1 | 7.3 |
| 50 | 57.4 | 0.116 | -18.711 | 0.67 | 2.1 | 1.7 | 1.1 | 7.3 |
| 50 | 57.7 | 0.112 | -19.016 | 0.63 | 2   | 1.6 | 1   | 7.4 |
| 50 | 58   | 0.109 | -19.251 | 0.59 | 1.9 | 1.6 | 1   | 7.4 |
| 50 | 58.2 | 0.106 | -19.494 | 0.56 | 1.9 | 1.6 | 1   | 7.4 |
| 50 | 58.5 | 0.103 | -19.743 | 0.53 | 1.8 | 1.5 | 0.9 | 7.5 |
| 50 | 58.8 | 0.1   | -20.000 | 0.50 | 1.8 | 1.5 | 0.9 | 7.5 |
| 50 | 59.1 | 0.097 | -20.265 | 0.47 | 1.7 | 1.4 | 0.8 | 7.6 |
| 50 | 59.4 | 0.094 | -20.537 | 0.44 | 1.7 | 1.4 | 0.8 | 7.6 |
| 50 | 59.6 | 0.091 | -20.819 | 0.41 | 1.6 | 1.3 | 0.8 | 7.7 |
| 50 | 59.9 | 0.088 | -21.110 | 0.39 | 1.6 | 1.3 | 0.8 | 7.7 |
| 50 | 60.2 | 0.086 | -21.310 | 0.37 | 1.5 | 1.3 | 0.7 | 7.7 |
| 50 | 60.5 | 0.083 | -21.618 | 0.34 | 1.5 | 1.3 | 0.7 | 7.7 |
| 50 | 60.8 | 0.081 | -21.830 | 0.33 | 1.4 | 1.2 | 0.6 | 7.8 |
| 50 | 61   | 0.078 | -22.158 | 0.30 | 1.4 | 1.2 | 0.6 | 7.8 |
| 50 | 61.3 | 0.076 | -22.384 | 0.29 | 1.3 | 1.1 | 0.6 | 7.9 |
| 50 | 61.6 | 0.073 | -22.734 | 0.27 | 1.3 | 1.1 | 0.6 | 7.9 |
| 50 | 61.9 | 0.071 | -22.975 | 0.25 | 1.2 | 1   | 0.5 | 8   |
| 50 | 62.2 | 0.069 | -23.223 | 0.24 | 1.2 | 1   | 0.5 | 8   |
| 50 | 62.4 | 0.066 | -23.609 | 0.22 | 1.2 | 1   | 0.5 | 8   |
| 50 | 62.7 | 0.064 | -23.876 | 0.20 | 1.1 | 0.9 | 0.5 | 8.1 |
| 50 | 63   | 0.062 | -24.152 | 0.19 | 1.1 | 0.9 | 0.4 | 8.1 |
| 50 | 63.3 | 0.06  | -24.437 | 0.18 | 1   | 0.8 | 0.4 | 8.2 |
| 50 | 63.6 | 0.058 | -24.731 | 0.17 | 1   | 0.8 | 0.4 | 8.2 |
| 50 | 63.8 | 0.056 | -25.036 | 0.16 | 1   | 0.8 | 0.4 | 8.2 |

|     |      |       |         |      |     |     |     |     |
|-----|------|-------|---------|------|-----|-----|-----|-----|
| 50  | 64.1 | 0.054 | -25.352 | 0.15 | 0.9 | 0.8 | 0.3 | 8.2 |
| 50  | 64.4 | 0.052 | -25.680 | 0.14 | 0.9 | 0.8 | 0.3 | 8.2 |
| 50  | 64.7 | 0.051 | -25.849 | 0.13 | 0.9 | 0.8 | 0.3 | 8.2 |
| 50  | 65   | 0.049 | -26.196 | 0.12 | 0.8 | 0.7 | 0.3 | 8.3 |
| 50  | 65.2 | 0.047 | -26.558 | 0.11 | 0.8 | 0.7 | 0.3 | 8.3 |
| 50  | 65.5 | 0.045 | -26.936 | 0.10 | 0.8 | 0.7 | 0.3 | 8.3 |
| 50  | 65.8 | 0.044 | -27.131 | 0.10 | 0.8 | 0.7 | 0.3 | 8.3 |
| 50  | 66.1 | 0.042 | -27.535 | 0.09 | 0.7 | 0.6 | 0.2 | 8.4 |
| 50  | 66.4 | 0.041 | -27.744 | 0.08 | 0.7 | 0.6 | 0.2 | 8.4 |
| 50  | 66.6 | 0.039 | -28.179 | 0.08 | 0.7 | 0.6 | 0.2 | 8.4 |
| 50  | 66.9 | 0.038 | -28.404 | 0.07 | 0.6 | 0.5 | 0.2 | 8.5 |
| 50  | 67.2 | 0.036 | -28.874 | 0.06 | 0.6 | 0.5 | 0.2 | 8.5 |
| 50  | 67.5 | 0.035 | -29.119 | 0.06 | 0.6 | 0.5 | 0.2 | 8.5 |
| 50  | 67.8 | 0.034 | -29.370 | 0.06 | 0.6 | 0.5 | 0.2 | 8.5 |
| 50  | 68   | 0.032 | -29.897 | 0.05 | 0.5 | 0.4 | 0.1 | 8.6 |
| 50  | 68.3 | 0.031 | -30.173 | 0.05 | 0.5 | 0.4 | 0.1 | 8.6 |
| 50  | 68.6 | 0.03  | -30.458 | 0.05 | 0.5 | 0.4 | 0.1 | 8.6 |
| 50  | 68.9 | 0.029 | -30.752 | 0.04 | 0.5 | 0.4 | 0.1 | 8.6 |
| 50  | 69.2 | 0.027 | -31.373 | 0.04 | 0.4 | 0.3 | 0.1 | 8.7 |
| 50  | 69.4 | 0.026 | -31.701 | 0.03 | 0.4 | 0.3 | 0.1 | 8.7 |
| 50  | 69.7 | 0.025 | -32.041 | 0.03 | 0.4 | 0.3 | 0.1 | 8.7 |
| 50  | 70   | 0.024 | -32.396 | 0.03 | 0.4 | 0.3 | 0.1 | 8.7 |
| 50  | 70.3 | 0.023 | -32.765 | 0.03 | 0.4 | 0.3 | 0.1 | 8.7 |
| 50  | 70.6 | 0.022 | -33.152 | 0.02 | 0.4 | 0.3 | 0.1 | 8.7 |
| 50  | 70.8 | 0.021 | -33.556 | 0.02 | 0.3 | 0.2 | 0   | 8.8 |
| 50  | 71.1 | 0.02  | -33.979 | 0.02 | 0.3 | 0.2 | 0   | 8.8 |
| 50  | 71.4 | 0.019 | -34.425 | 0.02 | 0.3 | 0.2 | 0   | 8.8 |
| 50  | 71.7 | 0.019 | -34.425 | 0.02 | 0.3 | 0.2 | 0   | 8.8 |
| 50  | 72   | 0.018 | -34.895 | 0.02 | 0.3 | 0.2 | 0   | 8.8 |
| 50  | 72.2 | 0.017 | -35.391 | 0.01 | 0.3 | 0.2 | 0   | 8.8 |
| 50  | 72.5 | 0.016 | -35.918 | 0.01 | 0.2 | 0.1 | 0   | 8.9 |
| 100 | 72.8 | 0.015 | -36.478 | 0.02 | 0.3 | 0.2 | 0   | 8.8 |
| 100 | 73.1 | 0.015 | -36.478 | 0.02 | 0.3 | 0.2 | 0   | 8.8 |
| 100 | 73.4 | 0.014 | -37.077 | 0.02 | 0.3 | 0.2 | 0   | 8.8 |
| 100 | 73.6 | 0.013 | -37.721 | 0.02 | 0.3 | 0.2 | 0   | 8.8 |
| 100 | 73.9 | 0.013 | -37.721 | 0.02 | 0.3 | 0.2 | 0   | 8.8 |
| 100 | 74.2 | 0.012 | -38.416 | 0.01 | 0.3 | 0.2 | 0   | 8.8 |
| 100 | 74.5 | 0.011 | -39.172 | 0.01 | 0.2 | 0.1 | 0   | 8.9 |
| 100 | 74.8 | 0.011 | -39.172 | 0.01 | 0.2 | 0.1 | 0   | 8.9 |
| 100 | 75   | 0.01  | -40.000 | 0.01 | 0.2 | 0.1 | 0   | 8.9 |
| 100 | 75.3 | 0.01  | -40.000 | 0.01 | 0.2 | 0.1 | 0   | 8.9 |
| 100 | 75.6 | 0.009 | -40.915 | 0.01 | 0.2 | 0.1 | 0   | 8.9 |
| 100 | 75.9 | 0.008 | -41.938 | 0.01 | 0.2 | 0.1 | 0   | 8.9 |
| 100 | 76.2 | 0.008 | -41.938 | 0.01 | 0.2 | 0.1 | 0   | 8.9 |
| 100 | 76.4 | 0.007 | -43.098 | 0.00 | 0.1 | 0   | 0   | 9   |
| 100 | 76.7 | 0.007 | -43.098 | 0.00 | 0.1 | 0   | 0   | 9   |
| 100 | 77   | 0.007 | -43.098 | 0.00 | 0.1 | 0   | 0   | 9   |
| 100 | 77.3 | 0.006 | -44.437 | 0.00 | 0.1 | 0   | 0   | 9   |

|     |      |            |          |      |     |   |   |   |
|-----|------|------------|----------|------|-----|---|---|---|
| 100 | 77.6 | 0.006      | -44.437  | 0.00 | 0.1 | 0 | 0 | 9 |
| 100 | 77.8 | 0.005      | -46.021  | 0.00 | 0.1 | 0 | 0 | 9 |
| 100 | 78.1 | 0.005      | -46.021  | 0.00 | 0.1 | 0 | 0 | 9 |
| 100 | 78.4 | 0.005      | -46.021  | 0.00 | 0.1 | 0 | 0 | 9 |
| 100 | 78.7 | 0.004      | -47.959  | 0.00 | 0.1 | 0 | 0 | 9 |
| 100 | 79   | 0.004      | -47.959  | 0.00 | 0.1 | 0 | 0 | 9 |
| 100 | 79.2 | 0.004      | -47.959  | 0.00 | 0.1 | 0 | 0 | 9 |
| 100 | 79.5 | 0.003      | -50.458  | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 79.8 | 0.003      | -50.458  | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 80.1 | 0.003      | -50.458  | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 80.4 | 0.003      | -50.458  | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 80.6 | 0.002      | -53.979  | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 80.9 | 0.002      | -53.979  | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 81.2 | 0.002      | -53.979  | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 81.5 | 0.002      | -53.979  | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 81.8 | 0.002      | -53.979  | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 82   | 0.001      | -60.000  | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 82.3 | 0.001      | -60.000  | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 82.6 | 0.001      | -60.000  | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 82.9 | 0.001      | -60.000  | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 83.2 | 0.001      | -60.000  | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 83.4 | 0.001      | -60.000  | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 83.7 | 0.001      | -60.000  | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 84   | 0.001      | -60.000  | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 84.3 | 0.001      | -60.000  | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 84.6 | 0.00000001 | -160.000 | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 84.8 | 0          | -160.000 | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 85.1 | 0          | -160.000 | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 85.4 | 0          | -160.000 | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 85.7 | 0          | -160.000 | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 86   | 0          | -160.000 | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 86.2 | 0          | -160.000 | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 86.5 | 0          | -160.000 | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 86.8 | 0          | -160.000 | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 87.1 | 0          | -160.000 | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 87.4 | 0          | -160.000 | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 87.6 | 0          | -160.000 | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 87.9 | 0          | -160.000 | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 88.2 | 0          | -160.000 | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 88.5 | 0          | -160.000 | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 88.8 | 0          | -160.000 | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 89   | 0          | -160.000 | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 89.3 | 0          | -160.000 | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 89.6 | 0          | -160.000 | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 89.9 | 0          | -160.000 | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 90.2 | 0          | -160.000 | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 90.4 | 0          | -160.000 | 0.00 | 0   | 0 | 0 | 9 |
| 100 | 90.7 | 0          | -160.000 | 0.00 | 0   | 0 | 0 | 9 |



|     |       |       |          |      |   |   |   |   |
|-----|-------|-------|----------|------|---|---|---|---|
| 100 | 91    | 0     | -160.000 | 0.00 | 0 | 0 | 0 | 9 |
| 100 | 91.3  | 0     | -160.000 | 0.00 | 0 | 0 | 0 | 9 |
| 100 | 91.6  | 0     | -160.000 | 0.00 | 0 | 0 | 0 | 9 |
| 100 | 91.8  | 0     | -160.000 | 0.00 | 0 | 0 | 0 | 9 |
| 100 | 92.1  | 0     | -160.000 | 0.00 | 0 | 0 | 0 | 9 |
| 100 | 92.4  | 0     | -160.000 | 0.00 | 0 | 0 | 0 | 9 |
| 100 | 92.7  | 0     | -160.000 | 0.00 | 0 | 0 | 0 | 9 |
| 100 | 93    | 0     | -160.000 | 0.00 | 0 | 0 | 0 | 9 |
| 100 | 93.2  | 0     | -160.000 | 0.00 | 0 | 0 | 0 | 9 |
| 100 | 93.5  | 0     | -160.000 | 0.00 | 0 | 0 | 0 | 9 |
| 100 | 93.8  | 0     | -160.000 | 0.00 | 0 | 0 | 0 | 9 |
| 100 | 94.1  | 0     | -160.000 | 0.00 | 0 | 0 | 0 | 9 |
| 100 | 94.4  | 0     | -160.000 | 0.00 | 0 | 0 | 0 | 9 |
| 100 | 94.6  | 0     | -160.000 | 0.00 | 0 | 0 | 0 | 9 |
| 100 | 94.9  | 0     | -160.000 | 0.00 | 0 | 0 | 0 | 9 |
| 100 | 95.2  | 0     | -160.000 | 0.00 | 0 | 0 | 0 | 9 |
| 100 | 95.5  | 0     | -160.000 | 0.00 | 0 | 0 | 0 | 9 |
| 100 | 95.8  | 0     | -160.000 | 0.00 | 0 | 0 | 0 | 9 |
| 100 | 96    | 0.001 | -60.000  | 0.00 | 0 | 0 | 0 | 9 |
| 100 | 96.3  | 0.001 | -60.000  | 0.00 | 0 | 0 | 0 | 9 |
| 100 | 96.6  | 0.001 | -60.000  | 0.00 | 0 | 0 | 0 | 9 |
| 100 | 96.9  | 0.001 | -60.000  | 0.00 | 0 | 0 | 0 | 9 |
| 100 | 97.2  | 0.001 | -60.000  | 0.00 | 0 | 0 | 0 | 9 |
| 100 | 97.4  | 0.001 | -60.000  | 0.00 | 0 | 0 | 0 | 9 |
| 100 | 97.7  | 0.001 | -60.000  | 0.00 | 0 | 0 | 0 | 9 |
| 100 | 98    | 0.001 | -60.000  | 0.00 | 0 | 0 | 0 | 9 |
| 100 | 98.3  | 0.001 | -60.000  | 0.00 | 0 | 0 | 0 | 9 |
| 100 | 98.6  | 0.002 | -53.979  | 0.00 | 0 | 0 | 0 | 9 |
| 100 | 98.8  | 0.002 | -53.979  | 0.00 | 0 | 0 | 0 | 9 |
| 100 | 99.1  | 0.002 | -53.979  | 0.00 | 0 | 0 | 0 | 9 |
| 100 | 99.4  | 0.002 | -53.979  | 0.00 | 0 | 0 | 0 | 9 |
| 100 | 99.7  | 0.002 | -53.979  | 0.00 | 0 | 0 | 0 | 9 |
| 100 | 100   | 0.003 | -50.458  | 0.00 | 0 | 0 | 0 | 9 |
| 100 | 100.2 | 0.003 | -50.458  | 0.00 | 0 | 0 | 0 | 9 |
| 100 | 100.5 | 0.003 | -50.458  | 0.00 | 0 | 0 | 0 | 9 |



# Elevation Pattern Data

Vertical diagram at an azimuth of 64.7°

| Dep (°) | Er (%) | ERP (W) | Dep (°) | Er (%) | ERP (W) | Dep (°) | Er (%) | ERP (W) |
|---------|--------|---------|---------|--------|---------|---------|--------|---------|
| 0.0     | 100.1  | 0.7     | 16.6    | 80.2   | 0.4     | 33.6    | 58.4   | 0.2     |
| 0.3     | 100.0  | 0.7     | 17.1    | 79.8   | 0.4     | 33.9    | 57.9   | 0.2     |
| 0.6     | 99.9   | 0.7     | 17.4    | 79.5   | 0.4     | 34.2    | 57.3   | 0.2     |
| 0.8     | 99.8   | 0.7     | 17.6    | 79.2   | 0.4     | 34.4    | 56.8   | 0.2     |
| 1.1     | 99.7   | 0.7     | 17.9    | 78.9   | 0.4     | 34.7    | 56.2   | 0.2     |
| 1.4     | 99.6   | 0.7     | 18.2    | 78.5   | 0.4     | 35.0    | 55.7   | 0.2     |
| 1.7     | 99.5   | 0.7     | 18.5    | 78.2   | 0.4     | 35.3    | 55.1   | 0.2     |
| 2.0     | 99.4   | 0.7     | 18.8    | 77.9   | 0.4     | 35.6    | 54.6   | 0.2     |
| 2.2     | 99.2   | 0.7     | 19.0    | 77.5   | 0.4     | 35.8    | 54.0   | 0.2     |
| 2.5     | 99.0   | 0.7     | 19.3    | 77.2   | 0.4     | 36.1    | 53.4   | 0.2     |
| 2.8     | 98.8   | 0.7     | 19.6    | 76.9   | 0.4     | 36.4    | 52.8   | 0.2     |
| 3.1     | 98.6   | 0.7     | 19.9    | 76.6   | 0.4     | 36.7    | 52.2   | 0.2     |
| 3.4     | 98.4   | 0.7     | 20.2    | 76.3   | 0.4     | 37.0    | 51.6   | 0.2     |
| 3.6     | 98.1   | 0.6     | 20.4    | 76.0   | 0.4     | 37.2    | 51.0   | 0.2     |
| 3.9     | 97.8   | 0.6     | 20.7    | 75.7   | 0.4     | 37.5    | 50.4   | 0.2     |
| 4.2     | 97.6   | 0.6     | 21.0    | 75.4   | 0.4     | 37.8    | 49.8   | 0.2     |
| 4.5     | 97.3   | 0.6     | 21.3    | 75.1   | 0.4     | 38.1    | 49.2   | 0.2     |
| 4.8     | 97.0   | 0.6     | 21.6    | 74.8   | 0.4     | 38.4    | 48.5   | 0.2     |
| 5.0     | 96.7   | 0.6     | 21.8    | 74.5   | 0.4     | 38.6    | 47.9   | 0.2     |
| 5.3     | 96.4   | 0.6     | 22.1    | 74.2   | 0.4     | 38.9    | 47.3   | 0.2     |
| 5.6     | 96.1   | 0.6     | 22.4    | 73.9   | 0.4     | 39.2    | 46.6   | 0.1     |
| 5.9     | 95.7   | 0.6     | 22.7    | 73.6   | 0.4     | 39.5    | 46.0   | 0.1     |
| 6.2     | 95.4   | 0.6     | 23.0    | 73.3   | 0.4     | 39.8    | 45.4   | 0.1     |
| 6.4     | 95.0   | 0.6     | 23.2    | 73.0   | 0.4     | 40.0    | 44.7   | 0.1     |
| 6.7     | 94.6   | 0.6     | 23.5    | 72.7   | 0.4     | 40.3    | 44.1   | 0.1     |
| 7.0     | 94.2   | 0.6     | 23.8    | 72.4   | 0.4     | 40.6    | 43.5   | 0.1     |
| 7.3     | 93.9   | 0.6     | 24.1    | 72.1   | 0.3     | 40.9    | 42.8   | 0.1     |
| 7.6     | 93.5   | 0.6     | 24.4    | 71.7   | 0.3     | 41.2    | 42.2   | 0.1     |
| 7.8     | 93.1   | 0.6     | 24.6    | 71.4   | 0.3     | 41.4    | 41.5   | 0.1     |
| 8.1     | 92.7   | 0.6     | 24.9    | 71.1   | 0.3     | 41.7    | 40.8   | 0.1     |
| 8.4     | 92.3   | 0.6     | 25.2    | 70.8   | 0.3     | 42.0    | 40.2   | 0.1     |
| 8.7     | 91.9   | 0.6     | 25.5    | 70.5   | 0.3     | 42.3    | 39.5   | 0.1     |
| 9.0     | 91.5   | 0.6     | 25.8    | 70.1   | 0.3     | 42.6    | 38.9   | 0.1     |
| 9.2     | 91.1   | 0.6     | 26.0    | 69.8   | 0.3     | 42.8    | 38.3   | 0.1     |
| 9.5     | 90.6   | 0.6     | 26.3    | 69.5   | 0.3     | 43.1    | 37.6   | 0.1     |
| 9.8     | 90.2   | 0.5     | 26.6    | 69.1   | 0.3     | 43.4    | 37.0   | 0.1     |
| 10.1    | 89.8   | 0.5     | 26.9    | 68.8   | 0.3     | 43.7    | 36.3   | 0.1     |
| 10.4    | 89.4   | 0.5     | 27.2    | 68.5   | 0.3     | 44.0    | 35.7   | 0.1     |
| 10.6    | 89.0   | 0.5     | 27.4    | 68.1   | 0.3     | 44.2    | 35.1   | 0.1     |
| 10.9    | 88.5   | 0.5     | 27.7    | 67.8   | 0.3     | 44.5    | 34.4   | 0.1     |
| 11.2    | 88.1   | 0.5     | 28.0    | 67.4   | 0.3     | 44.8    | 33.8   | 0.1     |
| 11.5    | 87.7   | 0.5     | 28.3    | 67.0   | 0.3     | 45.1    | 33.2   | 0.1     |
| 11.8    | 87.3   | 0.5     | 28.6    | 66.6   | 0.3     | 45.4    | 32.6   | 0.1     |
| 12.0    | 86.9   | 0.5     | 28.8    | 66.2   | 0.3     | 45.6    | 31.9   | 0.1     |
| 12.3    | 86.4   | 0.5     | 29.1    | 65.8   | 0.3     | 45.9    | 31.3   | 0.1     |
| 12.6    | 86.0   | 0.5     | 29.4    | 65.4   | 0.3     | 46.2    | 30.7   | 0.1     |
| 12.9    | 85.6   | 0.5     | 29.7    | 65.0   | 0.3     | 46.5    | 30.1   | 0.1     |
| 13.2    | 85.2   | 0.5     | 30.0    | 64.6   | 0.3     | 46.8    | 29.5   | 0.1     |
| 13.4    | 84.8   | 0.5     | 30.2    | 64.2   | 0.3     | 47.0    | 28.9   | 0.1     |
| 13.7    | 84.4   | 0.5     | 30.5    | 63.8   | 0.3     | 47.3    | 28.3   | 0.1     |
| 14.0    | 84.0   | 0.5     | 30.8    | 63.3   | 0.3     | 47.6    | 27.7   | 0.1     |
| 14.3    | 83.6   | 0.5     | 31.1    | 62.9   | 0.3     | 47.9    | 27.2   | 0.0     |
| 14.6    | 83.2   | 0.5     | 31.4    | 62.4   | 0.3     | 48.2    | 26.6   | 0.0     |
| 14.8    | 82.8   | 0.5     | 31.6    | 61.9   | 0.3     | 48.4    | 26.0   | 0.0     |
| 15.1    | 82.4   | 0.5     | 31.9    | 61.4   | 0.3     | 48.7    | 25.4   | 0.0     |
| 15.4    | 82.0   | 0.5     | 32.2    | 60.9   | 0.2     | 49.0    | 24.9   | 0.0     |
| 15.7    | 81.7   | 0.4     | 32.5    | 60.4   | 0.2     | 49.3    | 24.3   | 0.0     |
| 16.0    | 81.3   | 0.4     | 32.8    | 59.9   | 0.2     | 49.6    | 23.8   | 0.0     |
| 16.2    | 80.9   | 0.4     | 33.0    | 59.4   | 0.2     | 49.8    | 23.3   | 0.0     |
| 16.5    | 80.6   | 0.4     | 33.3    | 58.9   | 0.2     | 50.1    | 22.7   | 0.0     |

Vertical diagram at an azimuth of 64.7°

| Dep (°) | Er (%) | ERP (W) | Dep (°) | Er (%) | ERP (W) | Dep (°) | Er (%) | ERP (W) |
|---------|--------|---------|---------|--------|---------|---------|--------|---------|
| 50.4    | 22.2   | 0.0     | 67.2    | 3.6    | 0.0     | 84.0    | 0.1    | 0.0     |
| 50.7    | 21.7   | 0.0     | 67.5    | 3.5    | 0.0     | 84.3    | 0.1    | 0.0     |
| 51.0    | 21.2   | 0.0     | 67.8    | 3.4    | 0.0     | 84.6    | 0.0    | 0.0     |
| 51.2    | 20.7   | 0.0     | 68.0    | 3.2    | 0.0     | 84.8    | 0.0    | 0.0     |
| 51.5    | 20.2   | 0.0     | 68.3    | 3.1    | 0.0     | 85.1    | 0.0    | 0.0     |
| 51.8    | 19.7   | 0.0     | 68.6    | 3.0    | 0.0     | 85.4    | 0.0    | 0.0     |
| 52.1    | 19.2   | 0.0     | 68.9    | 2.9    | 0.0     | 85.7    | 0.0    | 0.0     |
| 52.4    | 18.6   | 0.0     | 69.2    | 2.7    | 0.0     | 86.0    | 0.0    | 0.0     |
| 52.6    | 18.3   | 0.0     | 69.4    | 2.6    | 0.0     | 86.2    | 0.0    | 0.0     |
| 52.9    | 17.8   | 0.0     | 69.7    | 2.5    | 0.0     | 86.5    | 0.0    | 0.0     |
| 53.2    | 17.4   | 0.0     | 70.0    | 2.4    | 0.0     | 86.8    | 0.0    | 0.0     |
| 53.5    | 17.0   | 0.0     | 70.3    | 2.3    | 0.0     | 87.1    | 0.0    | 0.0     |
| 53.8    | 16.5   | 0.0     | 70.6    | 2.2    | 0.0     | 87.4    | 0.0    | 0.0     |
| 54.0    | 16.1   | 0.0     | 70.8    | 2.1    | 0.0     | 87.6    | 0.0    | 0.0     |
| 54.3    | 15.7   | 0.0     | 71.1    | 2.0    | 0.0     | 87.9    | 0.0    | 0.0     |
| 54.6    | 15.3   | 0.0     | 71.4    | 1.9    | 0.0     | 88.2    | 0.0    | 0.0     |
| 54.9    | 14.9   | 0.0     | 71.7    | 1.9    | 0.0     | 88.5    | 0.0    | 0.0     |
| 55.2    | 14.5   | 0.0     | 72.0    | 1.8    | 0.0     | 88.8    | 0.0    | 0.0     |
| 55.4    | 14.1   | 0.0     | 72.2    | 1.7    | 0.0     | 89.0    | 0.0    | 0.0     |
| 55.7    | 13.7   | 0.0     | 72.5    | 1.6    | 0.0     | 89.3    | 0.0    | 0.0     |
| 56.0    | 13.3   | 0.0     | 72.8    | 1.5    | 0.0     | 89.6    | 0.0    | 0.0     |
| 56.3    | 13.0   | 0.0     | 73.1    | 1.5    | 0.0     | 89.9    | 0.0    | 0.0     |
| 56.6    | 12.6   | 0.0     | 73.4    | 1.4    | 0.0     | 90.2    | 0.0    | 0.0     |
| 56.8    | 12.2   | 0.0     | 73.6    | 1.3    | 0.0     | 90.4    | 0.0    | 0.0     |
| 57.1    | 11.9   | 0.0     | 73.9    | 1.3    | 0.0     | 90.7    | 0.0    | 0.0     |
| 57.4    | 11.6   | 0.0     | 74.2    | 1.2    | 0.0     | 91.0    | 0.0    | 0.0     |
| 57.7    | 11.2   | 0.0     | 74.5    | 1.1    | 0.0     | 91.3    | 0.0    | 0.0     |
| 58.0    | 10.9   | 0.0     | 74.8    | 1.1    | 0.0     | 91.6    | 0.0    | 0.0     |
| 58.2    | 10.6   | 0.0     | 75.0    | 1.0    | 0.0     | 91.8    | 0.0    | 0.0     |
| 58.5    | 10.3   | 0.0     | 75.3    | 1.0    | 0.0     | 92.1    | 0.0    | 0.0     |
| 58.8    | 10.0   | 0.0     | 75.6    | 0.9    | 0.0     | 92.4    | 0.0    | 0.0     |
| 59.1    | 9.7    | 0.0     | 75.9    | 0.8    | 0.0     | 92.7    | 0.0    | 0.0     |
| 59.4    | 9.4    | 0.0     | 76.2    | 0.8    | 0.0     | 93.0    | 0.0    | 0.0     |
| 59.6    | 9.1    | 0.0     | 76.4    | 0.7    | 0.0     | 93.2    | 0.0    | 0.0     |
| 59.9    | 8.8    | 0.0     | 76.7    | 0.7    | 0.0     | 93.5    | 0.0    | 0.0     |
| 60.2    | 8.6    | 0.0     | 77.0    | 0.7    | 0.0     | 93.8    | 0.0    | 0.0     |
| 60.5    | 8.3    | 0.0     | 77.3    | 0.6    | 0.0     | 94.1    | 0.0    | 0.0     |
| 60.8    | 8.1    | 0.0     | 77.6    | 0.6    | 0.0     | 94.4    | 0.0    | 0.0     |
| 61.0    | 7.8    | 0.0     | 77.8    | 0.5    | 0.0     | 94.6    | 0.0    | 0.0     |
| 61.3    | 7.6    | 0.0     | 78.1    | 0.5    | 0.0     | 94.9    | 0.0    | 0.0     |
| 61.6    | 7.3    | 0.0     | 78.4    | 0.5    | 0.0     | 95.2    | 0.0    | 0.0     |
| 61.9    | 7.1    | 0.0     | 78.7    | 0.4    | 0.0     | 95.5    | 0.0    | 0.0     |
| 62.2    | 6.9    | 0.0     | 79.0    | 0.4    | 0.0     | 95.8    | 0.0    | 0.0     |
| 62.4    | 6.6    | 0.0     | 79.2    | 0.4    | 0.0     | 96.0    | 0.1    | 0.0     |
| 62.7    | 6.4    | 0.0     | 79.5    | 0.3    | 0.0     | 96.3    | 0.1    | 0.0     |
| 63.0    | 6.2    | 0.0     | 79.8    | 0.3    | 0.0     | 96.6    | 0.1    | 0.0     |
| 63.3    | 6.0    | 0.0     | 80.1    | 0.3    | 0.0     | 96.9    | 0.1    | 0.0     |
| 63.6    | 5.8    | 0.0     | 80.4    | 0.3    | 0.0     | 97.2    | 0.1    | 0.0     |
| 63.8    | 5.6    | 0.0     | 80.6    | 0.2    | 0.0     | 97.4    | 0.1    | 0.0     |
| 64.1    | 5.4    | 0.0     | 80.9    | 0.2    | 0.0     | 97.7    | 0.1    | 0.0     |
| 64.4    | 5.2    | 0.0     | 81.2    | 0.2    | 0.0     | 98.0    | 0.1    | 0.0     |
| 64.7    | 5.1    | 0.0     | 81.5    | 0.2    | 0.0     | 98.3    | 0.1    | 0.0     |
| 65.0    | 4.9    | 0.0     | 81.8    | 0.2    | 0.0     | 98.6    | 0.2    | 0.0     |
| 65.2    | 4.7    | 0.0     | 82.0    | 0.1    | 0.0     | 98.8    | 0.2    | 0.0     |
| 65.5    | 4.5    | 0.0     | 82.3    | 0.1    | 0.0     | 99.1    | 0.2    | 0.0     |
| 65.8    | 4.4    | 0.0     | 82.6    | 0.1    | 0.0     | 99.4    | 0.2    | 0.0     |
| 66.1    | 4.2    | 0.0     | 82.9    | 0.1    | 0.0     | 99.7    | 0.2    | 0.0     |
| 66.4    | 4.1    | 0.0     | 83.2    | 0.1    | 0.0     | 100.0   | 0.3    | 0.0     |
| 66.6    | 3.9    | 0.0     | 83.4    | 0.1    | 0.0     | 100.2   | 0.3    | 0.0     |
| 66.9    | 3.8    | 0.0     | 83.7    | 0.1    | 0.0     | 100.5   | 0.3    | 0.0     |

Elevation Pattern

