



Antenna Model: **THV-11A11/CP-R 04**

Proposal Number: **C-70520-4**  
Date: **13-Feb-19**  
Customer: **Nexstar**  
Location: **Spartanburg, SC**

#### Electrical Specifications

Polarization: **Elliptical**  
Azimuth Pattern: **Omni**  
Antenna Input: **3-1/8"** **50 Ohm** **EIA/DCA**  
VSWR: **Channel** **1.10 : 1**  
Bandwidth: **6 MHz**  
Rated Input Power: **25 kW** **(13.98 dBk)** **Maximum Average Power**

#### Mechanical Specifications

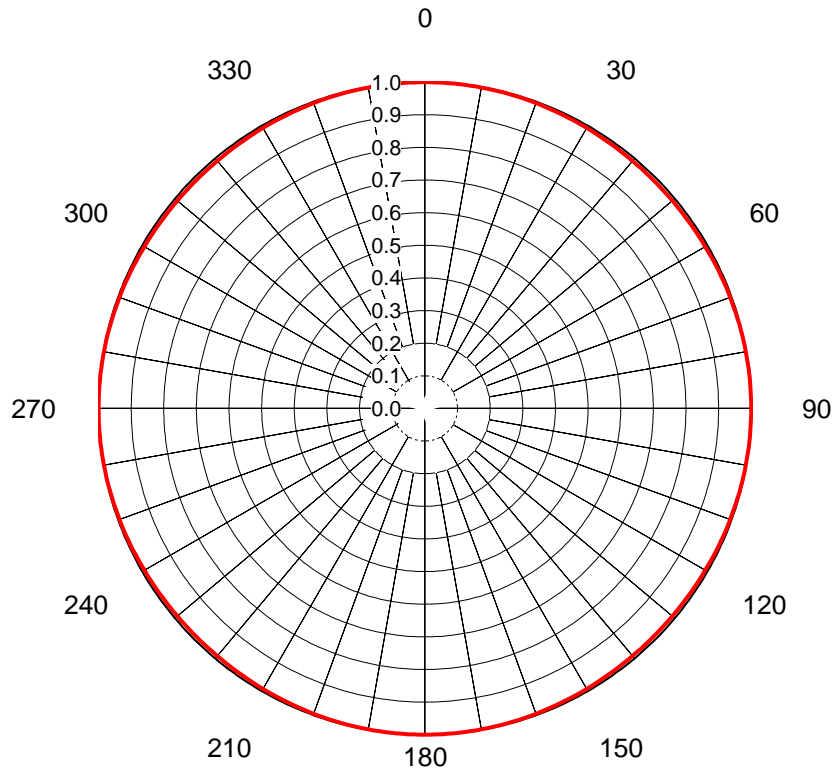
Mounting: **Top Mounted**  
Environmental Protection: **Full Radome**  
Height: **61.7 ft (18.8m)** less Lightning Protector **65.7 ft (20m)** with Lightning Protector  
Weight: **8600 lb (3.9t)** Excludes Mounts  
Effective Projected Area: **94.7 ft² (8.8m²)** **TIA-222-G** Basic Wind Speed: **89 m/h (143.2 km/h)**

#### Channel Specifications

| Call | CH | Freq    | Hpol ERP               | Vpol ERP               | TPO                  | RMS<br>Main Lobe<br>Hpol Gain | RMS<br>Main Lobe<br>Vpol Gain | RMS<br>at Horizontal<br>Hpol Gain | RMS<br>at Horizontal<br>Vpol Gain |
|------|----|---------|------------------------|------------------------|----------------------|-------------------------------|-------------------------------|-----------------------------------|-----------------------------------|
| WSPA | 11 | 201 MHz | 33.5 kW<br>(15.25 dBk) | 32.8 kW<br>(15.16 dBk) | 6.6 kW<br>(8.22 dBk) | 5.56<br>(7.45dB)              | 5.44<br>(7.36dB)              | 5.00<br>(6.99dB)                  | 4.90<br>(6.90dB)                  |

## AZIMUTH PATTERN Horizontal Polarization

Proposal No. **C-70520-4**  
 Date **13-Feb-19**  
 Call Letters **WSPA**  
 Channel **11**  
 Frequency **201 MHz**  
 Antenna Type **THV-11A11/CP-R 04**  
 Gain **1.01 (0.04dB)**  
 Calculated  
 Circularity **+/- 1.0 dB**

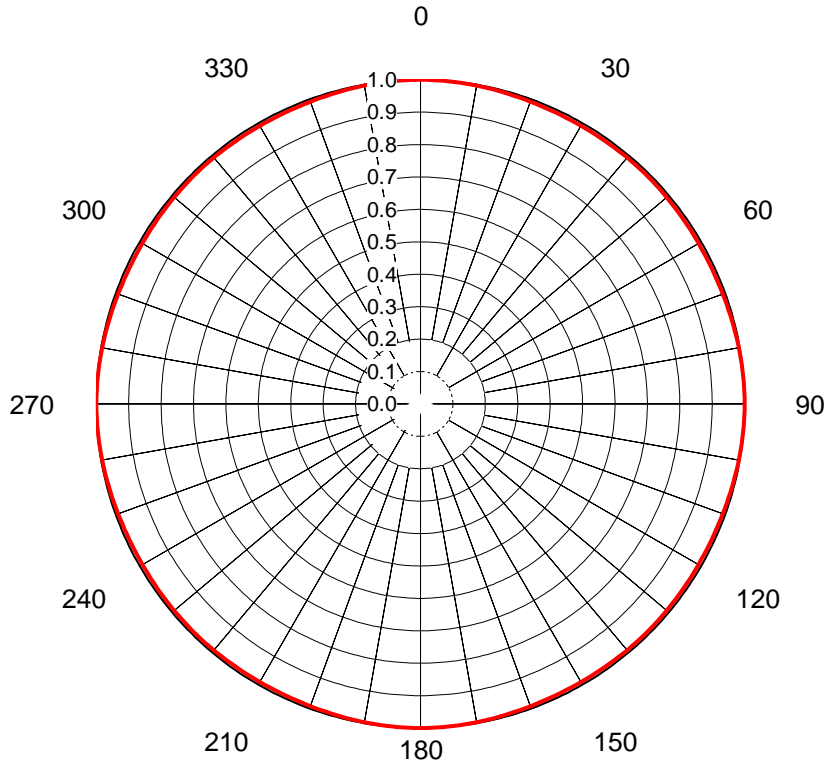


| Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value |
|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|
| 0   | 1.000 | 36  | 0.991 | 72  | 0.996 | 108 | 0.996 | 144 | 0.991 | 180 | 1.000 | 216 | 0.991 | 252 | 0.996 | 288 | 0.996 | 324 | 0.991 |
| 1   | 1.000 | 37  | 0.991 | 73  | 0.997 | 109 | 0.996 | 145 | 0.991 | 181 | 1.000 | 217 | 0.991 | 253 | 0.997 | 289 | 0.996 | 325 | 0.991 |
| 2   | 1.000 | 38  | 0.990 | 74  | 0.997 | 110 | 0.996 | 146 | 0.991 | 182 | 1.000 | 218 | 0.990 | 254 | 0.997 | 290 | 0.996 | 326 | 0.991 |
| 3   | 1.000 | 39  | 0.990 | 75  | 0.997 | 111 | 0.995 | 147 | 0.992 | 183 | 1.000 | 219 | 0.990 | 255 | 0.997 | 291 | 0.995 | 327 | 0.992 |
| 4   | 1.000 | 40  | 0.990 | 76  | 0.998 | 112 | 0.995 | 148 | 0.992 | 184 | 1.000 | 220 | 0.990 | 256 | 0.998 | 292 | 0.995 | 328 | 0.992 |
| 5   | 1.000 | 41  | 0.990 | 77  | 0.998 | 113 | 0.995 | 149 | 0.992 | 185 | 1.000 | 221 | 0.990 | 257 | 0.998 | 293 | 0.995 | 329 | 0.992 |
| 6   | 1.000 | 42  | 0.990 | 78  | 0.998 | 114 | 0.994 | 150 | 0.992 | 186 | 1.000 | 222 | 0.990 | 258 | 0.998 | 294 | 0.994 | 330 | 0.992 |
| 7   | 0.999 | 43  | 0.990 | 79  | 0.999 | 115 | 0.994 | 151 | 0.993 | 187 | 0.999 | 223 | 0.990 | 259 | 0.999 | 295 | 0.994 | 331 | 0.993 |
| 8   | 0.999 | 44  | 0.990 | 80  | 0.999 | 116 | 0.994 | 152 | 0.993 | 188 | 0.999 | 224 | 0.990 | 260 | 0.999 | 296 | 0.994 | 332 | 0.993 |
| 9   | 0.999 | 45  | 0.990 | 81  | 0.999 | 117 | 0.993 | 153 | 0.993 | 189 | 0.999 | 225 | 0.990 | 261 | 0.999 | 297 | 0.993 | 333 | 0.993 |
| 10  | 0.999 | 46  | 0.990 | 82  | 0.999 | 118 | 0.993 | 154 | 0.994 | 190 | 0.999 | 226 | 0.990 | 262 | 0.999 | 298 | 0.993 | 334 | 0.994 |
| 11  | 0.999 | 47  | 0.990 | 83  | 0.999 | 119 | 0.993 | 155 | 0.994 | 191 | 0.999 | 227 | 0.990 | 263 | 0.999 | 299 | 0.993 | 335 | 0.994 |
| 12  | 0.998 | 48  | 0.990 | 84  | 1.000 | 120 | 0.992 | 156 | 0.994 | 192 | 0.998 | 228 | 0.990 | 264 | 1.000 | 300 | 0.992 | 336 | 0.994 |
| 13  | 0.998 | 49  | 0.990 | 85  | 1.000 | 121 | 0.992 | 157 | 0.995 | 193 | 0.998 | 229 | 0.990 | 265 | 1.000 | 301 | 0.992 | 337 | 0.995 |
| 14  | 0.998 | 50  | 0.990 | 86  | 1.000 | 122 | 0.992 | 158 | 0.995 | 194 | 0.998 | 230 | 0.990 | 266 | 1.000 | 302 | 0.992 | 338 | 0.995 |
| 15  | 0.997 | 51  | 0.990 | 87  | 1.000 | 123 | 0.992 | 159 | 0.995 | 195 | 0.997 | 231 | 0.990 | 267 | 1.000 | 303 | 0.992 | 339 | 0.995 |
| 16  | 0.997 | 52  | 0.990 | 88  | 1.000 | 124 | 0.991 | 160 | 0.996 | 196 | 0.997 | 232 | 0.990 | 268 | 1.000 | 304 | 0.991 | 340 | 0.996 |
| 17  | 0.997 | 53  | 0.991 | 89  | 1.000 | 125 | 0.991 | 161 | 0.996 | 197 | 0.997 | 233 | 0.991 | 269 | 1.000 | 305 | 0.991 | 341 | 0.996 |
| 18  | 0.996 | 54  | 0.991 | 90  | 1.000 | 126 | 0.991 | 162 | 0.996 | 198 | 0.996 | 234 | 0.991 | 270 | 1.000 | 306 | 0.991 | 342 | 0.996 |
| 19  | 0.996 | 55  | 0.991 | 91  | 1.000 | 127 | 0.991 | 163 | 0.997 | 199 | 0.996 | 235 | 0.991 | 271 | 1.000 | 307 | 0.991 | 343 | 0.997 |
| 20  | 0.996 | 56  | 0.991 | 92  | 1.000 | 128 | 0.990 | 164 | 0.997 | 200 | 0.996 | 236 | 0.991 | 272 | 1.000 | 308 | 0.990 | 344 | 0.997 |
| 21  | 0.995 | 57  | 0.992 | 93  | 1.000 | 129 | 0.990 | 165 | 0.997 | 201 | 0.995 | 237 | 0.992 | 273 | 1.000 | 309 | 0.990 | 345 | 0.997 |
| 22  | 0.995 | 58  | 0.992 | 94  | 1.000 | 130 | 0.990 | 166 | 0.998 | 202 | 0.995 | 238 | 0.992 | 274 | 1.000 | 310 | 0.990 | 346 | 0.998 |
| 23  | 0.995 | 59  | 0.992 | 95  | 1.000 | 131 | 0.990 | 167 | 0.998 | 203 | 0.995 | 239 | 0.992 | 275 | 1.000 | 311 | 0.990 | 347 | 0.998 |
| 24  | 0.994 | 60  | 0.992 | 96  | 1.000 | 132 | 0.990 | 168 | 0.998 | 204 | 0.994 | 240 | 0.992 | 276 | 1.000 | 312 | 0.990 | 348 | 0.998 |
| 25  | 0.994 | 61  | 0.993 | 97  | 0.999 | 133 | 0.990 | 169 | 0.999 | 205 | 0.994 | 241 | 0.993 | 277 | 0.999 | 313 | 0.990 | 349 | 0.999 |
| 26  | 0.994 | 62  | 0.993 | 98  | 0.999 | 134 | 0.990 | 170 | 0.999 | 206 | 0.994 | 242 | 0.993 | 278 | 0.999 | 314 | 0.990 | 350 | 0.999 |
| 27  | 0.993 | 63  | 0.993 | 99  | 0.999 | 135 | 0.990 | 171 | 0.999 | 207 | 0.993 | 243 | 0.993 | 279 | 0.999 | 315 | 0.990 | 351 | 0.999 |
| 28  | 0.993 | 64  | 0.994 | 100 | 0.999 | 136 | 0.990 | 172 | 0.999 | 208 | 0.993 | 244 | 0.994 | 280 | 0.999 | 316 | 0.990 | 352 | 0.999 |
| 29  | 0.993 | 65  | 0.994 | 101 | 0.999 | 137 | 0.990 | 173 | 0.999 | 209 | 0.993 | 245 | 0.994 | 281 | 0.999 | 317 | 0.990 | 353 | 0.999 |
| 30  | 0.992 | 66  | 0.994 | 102 | 0.998 | 138 | 0.990 | 174 | 1.000 | 210 | 0.992 | 246 | 0.994 | 282 | 0.998 | 318 | 0.990 | 354 | 1.000 |
| 31  | 0.992 | 67  | 0.995 | 103 | 0.998 | 139 | 0.990 | 175 | 1.000 | 211 | 0.992 | 247 | 0.995 | 283 | 0.998 | 319 | 0.990 | 355 | 1.000 |
| 32  | 0.992 | 68  | 0.995 | 104 | 0.998 | 140 | 0.990 | 176 | 1.000 | 212 | 0.992 | 248 | 0.995 | 284 | 0.998 | 320 | 0.990 | 356 | 1.000 |
| 33  | 0.992 | 69  | 0.995 | 105 | 0.997 | 141 | 0.990 | 177 | 1.000 | 213 | 0.992 | 249 | 0.995 | 285 | 0.997 | 321 | 0.990 | 357 | 1.000 |
| 34  | 0.991 | 70  | 0.996 | 106 | 0.997 | 142 | 0.990 | 178 | 1.000 | 214 | 0.991 | 250 | 0.996 | 286 | 0.997 | 322 | 0.990 | 358 | 1.000 |
| 35  | 0.991 | 71  | 0.996 | 107 | 0.997 | 143 | 0.991 | 179 | 1.000 | 215 | 0.991 | 251 | 0.996 | 287 | 0.997 | 323 | 0.991 | 359 | 1.000 |

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## AZIMUTH PATTERN Vertical Polarization

Proposal No. **C-70520-4**  
 Date **13-Feb-19**  
 Call Letters **WSPA**  
 Channel **11**  
 Frequency **201 MHz**  
 Antenna Type **THV-11A11/CP-R 04**  
 Gain **1.01 (0.05dB)**  
 Calculated  
 Circularity **+/- 1.0 dB**



| Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value |
|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|
| 0   | 1.000 | 36  | 0.991 | 72  | 0.993 | 108 | 0.993 | 144 | 0.991 | 180 | 1.000 | 216 | 0.991 | 252 | 0.993 | 288 | 0.993 | 324 | 0.991 |
| 1   | 1.000 | 37  | 0.991 | 73  | 0.994 | 109 | 0.993 | 145 | 0.991 | 181 | 1.000 | 217 | 0.991 | 253 | 0.994 | 289 | 0.993 | 325 | 0.991 |
| 2   | 1.000 | 38  | 0.992 | 74  | 0.994 | 110 | 0.992 | 146 | 0.991 | 182 | 1.000 | 218 | 0.992 | 254 | 0.994 | 290 | 0.992 | 326 | 0.991 |
| 3   | 1.000 | 39  | 0.992 | 75  | 0.995 | 111 | 0.992 | 147 | 0.991 | 183 | 1.000 | 219 | 0.992 | 255 | 0.995 | 291 | 0.992 | 327 | 0.991 |
| 4   | 0.999 | 40  | 0.992 | 76  | 0.995 | 112 | 0.992 | 148 | 0.991 | 184 | 0.999 | 220 | 0.992 | 256 | 0.995 | 292 | 0.992 | 328 | 0.991 |
| 5   | 0.999 | 41  | 0.992 | 77  | 0.996 | 113 | 0.991 | 149 | 0.991 | 185 | 0.999 | 221 | 0.992 | 257 | 0.996 | 293 | 0.991 | 329 | 0.991 |
| 6   | 0.999 | 42  | 0.992 | 78  | 0.996 | 114 | 0.991 | 150 | 0.991 | 186 | 0.999 | 222 | 0.992 | 258 | 0.996 | 294 | 0.991 | 330 | 0.991 |
| 7   | 0.998 | 43  | 0.992 | 79  | 0.997 | 115 | 0.991 | 151 | 0.991 | 187 | 0.998 | 223 | 0.992 | 259 | 0.997 | 295 | 0.991 | 331 | 0.991 |
| 8   | 0.998 | 44  | 0.992 | 80  | 0.997 | 116 | 0.991 | 152 | 0.991 | 188 | 0.998 | 224 | 0.992 | 260 | 0.997 | 296 | 0.991 | 332 | 0.991 |
| 9   | 0.998 | 45  | 0.992 | 81  | 0.998 | 117 | 0.991 | 153 | 0.991 | 189 | 0.998 | 225 | 0.992 | 261 | 0.998 | 297 | 0.991 | 333 | 0.991 |
| 10  | 0.997 | 46  | 0.992 | 82  | 0.998 | 118 | 0.991 | 154 | 0.991 | 190 | 0.997 | 226 | 0.992 | 262 | 0.998 | 298 | 0.991 | 334 | 0.991 |
| 11  | 0.997 | 47  | 0.992 | 83  | 0.998 | 119 | 0.991 | 155 | 0.991 | 191 | 0.997 | 227 | 0.992 | 263 | 0.998 | 299 | 0.991 | 335 | 0.991 |
| 12  | 0.996 | 48  | 0.992 | 84  | 0.999 | 120 | 0.991 | 156 | 0.991 | 192 | 0.996 | 228 | 0.992 | 264 | 0.999 | 300 | 0.991 | 336 | 0.991 |
| 13  | 0.996 | 49  | 0.992 | 85  | 0.999 | 121 | 0.991 | 157 | 0.991 | 193 | 0.996 | 229 | 0.992 | 265 | 0.999 | 301 | 0.991 | 337 | 0.991 |
| 14  | 0.995 | 50  | 0.992 | 86  | 0.999 | 122 | 0.991 | 158 | 0.992 | 194 | 0.995 | 230 | 0.992 | 266 | 0.999 | 302 | 0.991 | 338 | 0.992 |
| 15  | 0.995 | 51  | 0.992 | 87  | 1.000 | 123 | 0.991 | 159 | 0.992 | 195 | 0.995 | 231 | 0.992 | 267 | 1.000 | 303 | 0.991 | 339 | 0.992 |
| 16  | 0.994 | 52  | 0.992 | 88  | 1.000 | 124 | 0.991 | 160 | 0.992 | 196 | 0.994 | 232 | 0.992 | 268 | 1.000 | 304 | 0.991 | 340 | 0.992 |
| 17  | 0.994 | 53  | 0.991 | 89  | 1.000 | 125 | 0.991 | 161 | 0.993 | 197 | 0.994 | 233 | 0.991 | 269 | 1.000 | 305 | 0.991 | 341 | 0.993 |
| 18  | 0.993 | 54  | 0.991 | 90  | 1.000 | 126 | 0.991 | 162 | 0.993 | 198 | 0.993 | 234 | 0.991 | 270 | 1.000 | 306 | 0.991 | 342 | 0.993 |
| 19  | 0.993 | 55  | 0.991 | 91  | 1.000 | 127 | 0.991 | 163 | 0.994 | 199 | 0.993 | 235 | 0.991 | 271 | 1.000 | 307 | 0.991 | 343 | 0.994 |
| 20  | 0.992 | 56  | 0.991 | 92  | 1.000 | 128 | 0.992 | 164 | 0.994 | 200 | 0.992 | 236 | 0.991 | 272 | 1.000 | 308 | 0.992 | 344 | 0.994 |
| 21  | 0.992 | 57  | 0.991 | 93  | 1.000 | 129 | 0.992 | 165 | 0.995 | 201 | 0.992 | 237 | 0.991 | 273 | 1.000 | 309 | 0.992 | 345 | 0.995 |
| 22  | 0.992 | 58  | 0.991 | 94  | 0.999 | 130 | 0.992 | 166 | 0.995 | 202 | 0.992 | 238 | 0.991 | 274 | 0.999 | 310 | 0.992 | 346 | 0.995 |
| 23  | 0.991 | 59  | 0.991 | 95  | 0.999 | 131 | 0.992 | 167 | 0.996 | 203 | 0.991 | 239 | 0.991 | 275 | 0.999 | 311 | 0.992 | 347 | 0.996 |
| 24  | 0.991 | 60  | 0.991 | 96  | 0.999 | 132 | 0.992 | 168 | 0.996 | 204 | 0.991 | 240 | 0.991 | 276 | 0.999 | 312 | 0.992 | 348 | 0.996 |
| 25  | 0.991 | 61  | 0.991 | 97  | 0.998 | 133 | 0.992 | 169 | 0.997 | 205 | 0.991 | 241 | 0.991 | 277 | 0.998 | 313 | 0.992 | 349 | 0.997 |
| 26  | 0.991 | 62  | 0.991 | 98  | 0.998 | 134 | 0.992 | 170 | 0.997 | 206 | 0.991 | 242 | 0.991 | 278 | 0.998 | 314 | 0.992 | 350 | 0.997 |
| 27  | 0.991 | 63  | 0.991 | 99  | 0.998 | 135 | 0.992 | 171 | 0.998 | 207 | 0.991 | 243 | 0.991 | 279 | 0.998 | 315 | 0.992 | 351 | 0.998 |
| 28  | 0.991 | 64  | 0.991 | 100 | 0.997 | 136 | 0.992 | 172 | 0.998 | 208 | 0.991 | 244 | 0.991 | 280 | 0.997 | 316 | 0.992 | 352 | 0.998 |
| 29  | 0.991 | 65  | 0.991 | 101 | 0.997 | 137 | 0.992 | 173 | 0.998 | 209 | 0.991 | 245 | 0.991 | 281 | 0.997 | 317 | 0.992 | 353 | 0.998 |
| 30  | 0.991 | 66  | 0.991 | 102 | 0.996 | 138 | 0.992 | 174 | 0.999 | 210 | 0.991 | 246 | 0.991 | 282 | 0.996 | 318 | 0.992 | 354 | 0.999 |
| 31  | 0.991 | 67  | 0.991 | 103 | 0.996 | 139 | 0.992 | 175 | 0.999 | 211 | 0.991 | 247 | 0.991 | 283 | 0.996 | 319 | 0.992 | 355 | 0.999 |
| 32  | 0.991 | 68  | 0.992 | 104 | 0.995 | 140 | 0.992 | 176 | 0.999 | 212 | 0.991 | 248 | 0.992 | 284 | 0.995 | 320 | 0.992 | 356 | 0.999 |
| 33  | 0.991 | 69  | 0.992 | 105 | 0.995 | 141 | 0.992 | 177 | 1.000 | 213 | 0.991 | 249 | 0.992 | 285 | 0.995 | 321 | 0.992 | 357 | 1.000 |
| 34  | 0.991 | 70  | 0.992 | 106 | 0.994 | 142 | 0.992 | 178 | 1.000 | 214 | 0.991 | 250 | 0.992 | 286 | 0.994 | 322 | 0.992 | 358 | 1.000 |
| 35  | 0.991 | 71  | 0.993 | 107 | 0.994 | 143 | 0.991 | 179 | 1.000 | 215 | 0.991 | 251 | 0.993 | 287 | 0.994 | 323 | 0.991 | 359 | 1.000 |

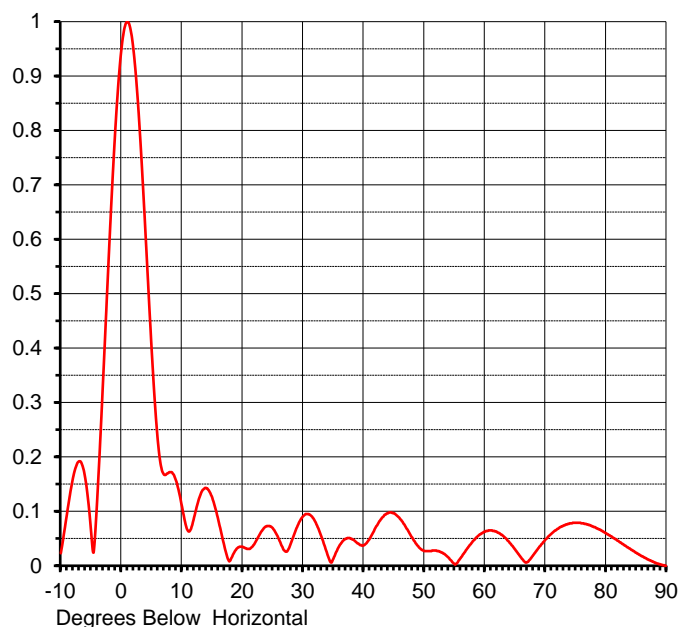
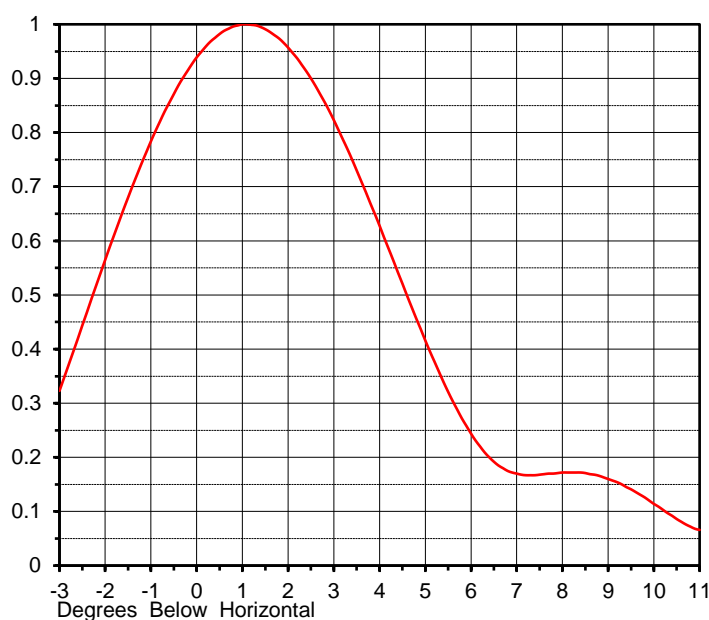
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## ELEVATION PATTERN

Proposal No. **C-70520-4**  
 Date **13-Feb-19**  
 Call Letters **WSPA**  
 Channel **11**  
 Frequency **201 MHz**  
 Antenna Type **THV-11A11/CP-R 04**

RMS Directivity at Main Lobe **11.0 ( 10.41 dB )**  
 RMS Directivity at Horizontal **9.7 ( 9.87 dB )**  
**Calculated**

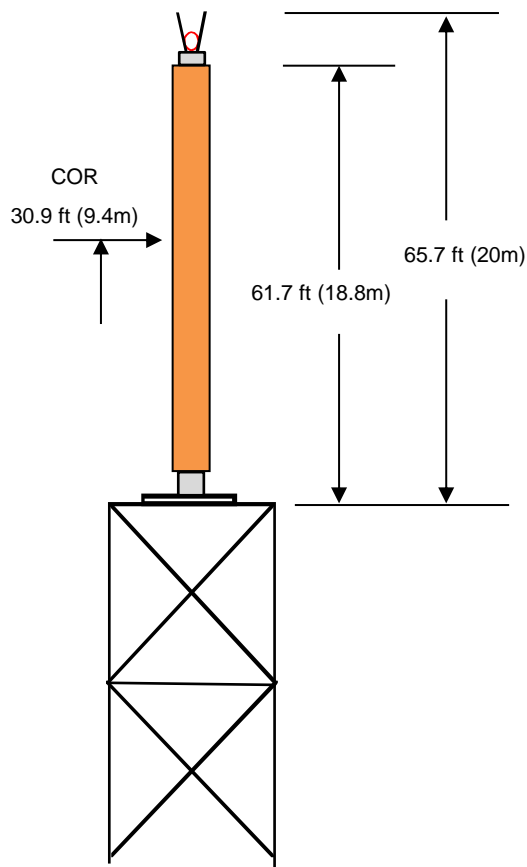
Beam Tilt **1.00 deg**  
 Pattern Number **11V110100**



| Angle | Field | Angle | Field | Angle | Field | Angle | Field | Angle | Field |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| -10.0 | 0.023 | 10.0  | 0.109 | 30.0  | 0.091 | 50.0  | 0.027 | 70.0  | 0.048 |
| -9.0  | 0.094 | 11.0  | 0.064 | 31.0  | 0.094 | 51.0  | 0.027 | 71.0  | 0.059 |
| -8.0  | 0.161 | 12.0  | 0.089 | 32.0  | 0.081 | 52.0  | 0.028 | 72.0  | 0.068 |
| -7.0  | 0.192 | 13.0  | 0.129 | 33.0  | 0.054 | 53.0  | 0.024 | 73.0  | 0.074 |
| -6.0  | 0.163 | 14.0  | 0.143 | 34.0  | 0.021 | 54.0  | 0.015 | 74.0  | 0.078 |
| -5.0  | 0.062 | 15.0  | 0.125 | 35.0  | 0.013 | 55.0  | 0.003 | 75.0  | 0.079 |
| -4.0  | 0.121 | 16.0  | 0.084 | 36.0  | 0.037 | 56.0  | 0.014 | 76.0  | 0.078 |
| -3.0  | 0.347 | 17.0  | 0.036 | 37.0  | 0.049 | 57.0  | 0.030 | 77.0  | 0.076 |
| -2.0  | 0.589 | 18.0  | 0.010 | 38.0  | 0.049 | 58.0  | 0.045 | 78.0  | 0.071 |
| -1.0  | 0.803 | 19.0  | 0.031 | 39.0  | 0.041 | 59.0  | 0.056 | 79.0  | 0.066 |
| 0.0   | 0.949 | 20.0  | 0.035 | 40.0  | 0.038 | 60.0  | 0.063 | 80.0  | 0.060 |
| 1.0   | 1.000 | 21.0  | 0.031 | 41.0  | 0.050 | 61.0  | 0.065 | 81.0  | 0.053 |
| 2.0   | 0.947 | 22.0  | 0.041 | 42.0  | 0.071 | 62.0  | 0.062 | 82.0  | 0.046 |
| 3.0   | 0.805 | 23.0  | 0.061 | 43.0  | 0.088 | 63.0  | 0.055 | 83.0  | 0.038 |
| 4.0   | 0.606 | 24.0  | 0.073 | 44.0  | 0.097 | 64.0  | 0.044 | 84.0  | 0.031 |
| 5.0   | 0.396 | 25.0  | 0.069 | 45.0  | 0.096 | 65.0  | 0.030 | 85.0  | 0.024 |
| 6.0   | 0.231 | 26.0  | 0.049 | 46.0  | 0.086 | 66.0  | 0.015 | 86.0  | 0.017 |
| 7.0   | 0.168 | 27.0  | 0.027 | 47.0  | 0.070 | 67.0  | 0.007 | 87.0  | 0.011 |
| 8.0   | 0.172 | 28.0  | 0.042 | 48.0  | 0.052 | 68.0  | 0.020 | 88.0  | 0.006 |
| 9.0   | 0.157 | 29.0  | 0.071 | 49.0  | 0.036 | 69.0  | 0.035 | 89.0  | 0.002 |
|       |       |       |       |       |       |       |       | 90.0  | 0.000 |

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## MECHANICAL SPECIFICATIONS



Proposal No. **C-70520-4**  
 Date **13-Feb-19**  
 Call Letters **WSPA**  
 Channel **11**  
 Frequency **201 MHz**  
 Antenna Type **THV-11A11/CP-R 04**

### Preliminary Specifications

#### Top Mounted

##### With ice TIA-222-G

Height AGL(z) 421 ft (128.3 m)  
 Basic Wind Speed 89 m/h (143.2 km/h)  
 Structure Class II  
 Exposure Category B  
 Topography Category 5

Site specific per RSM 03 for following parameters

Flat top hill, Crest elevation = 3200 ft

Base elevation = 2000 ft

L/2 distance = 860 ft, x distance = 760 ft

Design Ice 0.75 in  $t_{iz} = 2.26$  in

Wind Speed w/Ice 30 m/h (48.3 km/h)

#### Mechanical Specifications

|                                 |                    | without ice                               | with ice                                    |
|---------------------------------|--------------------|---|---|
| Height with Lightning Protector | H4                 | 65.7 ft (20m)                             |   |
| Height less Lightning Protector | H2                 | 61.7 ft (18.8m)                           |   |
| Height of Center of Radiation   | H3                 | 30.9 ft (9.4m)                            |   |
| Effective Projected Area        | (EPA) <sub>S</sub> | 94.7 ft <sup>2</sup> (8.8m <sup>2</sup> ) | 241.2 ft <sup>2</sup> (22.4m <sup>2</sup> ) |
| Moment Arm                      | D1                 | 32 ft (9.8m)                              | 32.9 ft (10m)                               |

|        |   |                |                 |
|--------|---|----------------|-----------------|
| Weight | W | 8600 lb (3.9t) | 14900 lb (6.8t) |
|--------|---|----------------|-----------------|

Antenna designed in accordance with AISC specifications for design of structural steel as prescribed by TIA-222-G

Prepared by: DLS

Date: 27-Oct-17

ME:

EE:

Rev. No.4 by: JBC

Date: 13-Feb-19

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## Summary

|              |                          |
|--------------|--------------------------|
| Proposal No. | <b>C-70520-4</b>         |
| Date         | <b>13-Feb-19</b>         |
| Call Letters | <b>WSPA</b>              |
| Channel      | <b>11</b>                |
| Frequency    | <b>201 MHz</b>           |
| Antenna Type | <b>THV-11A11/CP-R 04</b> |

## Antenna

|             | Hpol                         | Vpol                         |
|-------------|------------------------------|------------------------------|
| <b>ERP:</b> | <b>33.5 kW ( 15.25 dBk )</b> | <b>32.8 kW ( 15.16 dBk )</b> |
| RMS Gain*   | 5.56 ( 7.45 dB )             | 5.44 ( 7.36 dB )             |

|                            |                            |
|----------------------------|----------------------------|
| <b>Antenna Input Power</b> | <b>6.0 kW ( 7.80 dBk )</b> |
|----------------------------|----------------------------|

## Transmission Line

|            |                |                |                    |
|------------|----------------|----------------|--------------------|
| Type:      | <b>Rigid</b>   | Attenuation:   | <b>( 0.42 dB )</b> |
| Size:      | <b>4-1/16"</b> | Efficiency:    | <b>90.8%</b>       |
| Impedance: | <b>50 Ohm</b>  |                |                    |
| Length:    | <b>440 ft</b>  | <b>134.1 m</b> |                    |

## Transmitter Output

|                            |
|----------------------------|
| <b>6.6 kW ( 8.22 dBk )</b> |
|----------------------------|

Transmitter filter losses not included

\* Directivity and Gain are with respect to half wave dipole. The gain includes feed system losses

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