## ANTENNA DRAWING EXHIBIT

1. Antenna Data \& Specifications
a. Height above ground of tower and antenna mount: 21 meters
b. Distance from mount to tip of antenna: approx. 9 meters
c. Coordinates: North 39102 West 765355

60-Foot (18.3-Meter) System

|  | Downlink | S-band | X-band |
| :---: | :---: | :---: | :---: |
|  | Frequency Range | $2200-2400 \mathrm{MHz}$ | $8400-8500 \mathrm{MHz}$ |
|  | Polarization | Simultaneous RHC and LHC | Simultaneous RHC and LHC |
|  | G/T | >28.3 dB/K | $>38.5 \mathrm{~dB} / \mathrm{K}$ |
|  | Beamwidth | 0.5 deg | 0.13 deg |
|  | Uplink | S-band |  |
|  | Frequency Range | 2025-2120 MHz |  |
|  | Polarization | "On-the-fly" Selectable LHC |  |
|  | Beamwidth | 0.5 deg |  |
|  | EIRP | $>80 \mathrm{dBW}$ |  |
|  | Transmitter | 2000 W Klystron (dual redund |  |
|  | Antenna Pointing Con |  |  |
|  | Program track (TLE, | SPK, Chebychev, RA/DEC), S-ba | utotrack, S/X-band Steptrack |
|  | CCSDS Compliant |  |  |
|  | Command, Ranging, (r1/2), Reed-Solomon "SLE" (Fwd CLTU, R | er \& Telemetry, including Turbo ( $r$ Conv/R-S; Wide variety of modu RCF services) | 1/3, 1/4, 1/6), Convolutional formats; Space Link Extension |

2. Terrain Contour between APL 60' antenna and BWI airport ( 20 km away; Azimuth 87.5 degs)

