

Appendix A

Site Maps and Pictures

A.1 Semi-Urban Area: Old Turner Street

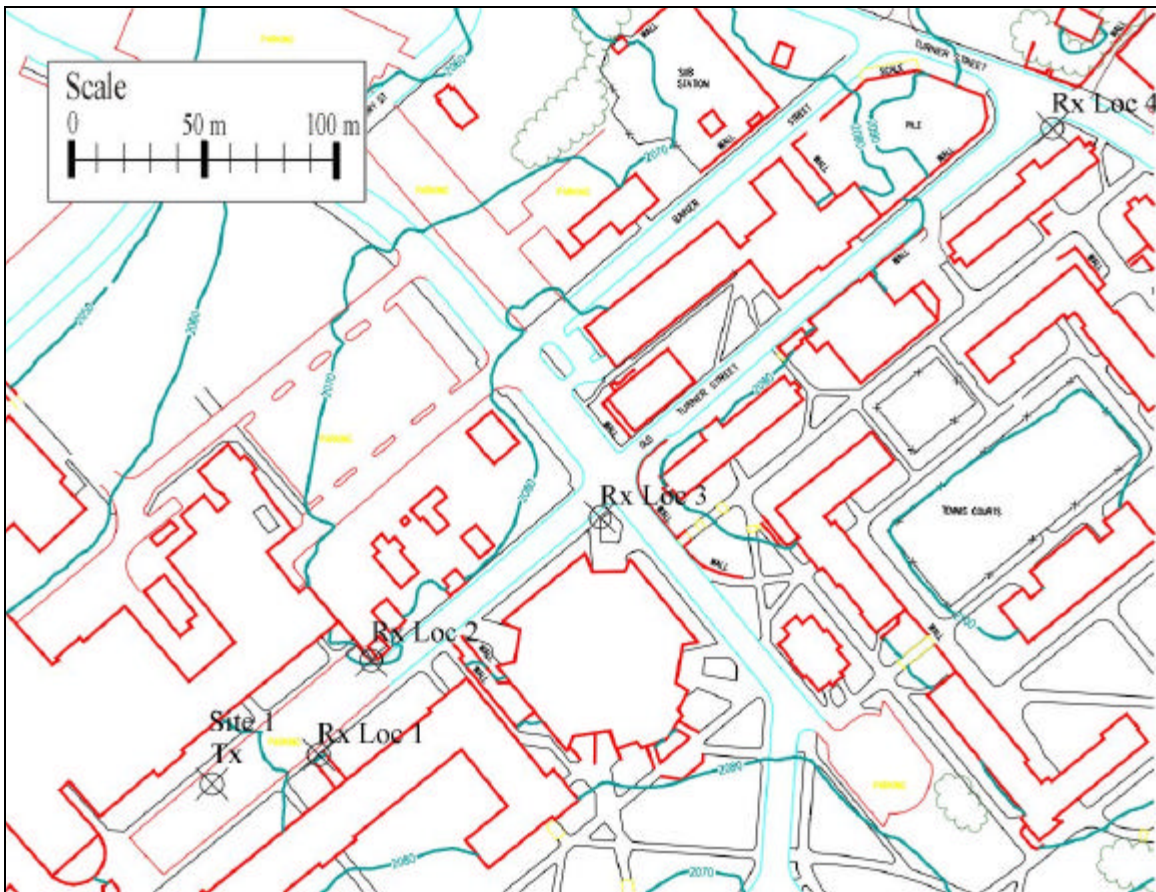


Figure A.1.1: Site map at Old Turner Street area. Academic buildings line both sides of the street.



Figure A.1.2: The Old Turner Street site view from the transmitter. Here, large trees line the street.



Figure A.1.3: Parked cars and moving cars sometimes obstructed the channel. Here, receiver locations 1 and 2 are shown.



Figure A.1.4: The buildings along the far end of Old Turner Street are closer to the street. Receiver location 4 is at the very end of this street.



Figure A.1.5: The view of Old Turner Street from receiver location 2. Receiver location 3 is near the stop sign.

A.2 Semi-Urban Area: Hutcheson Hall

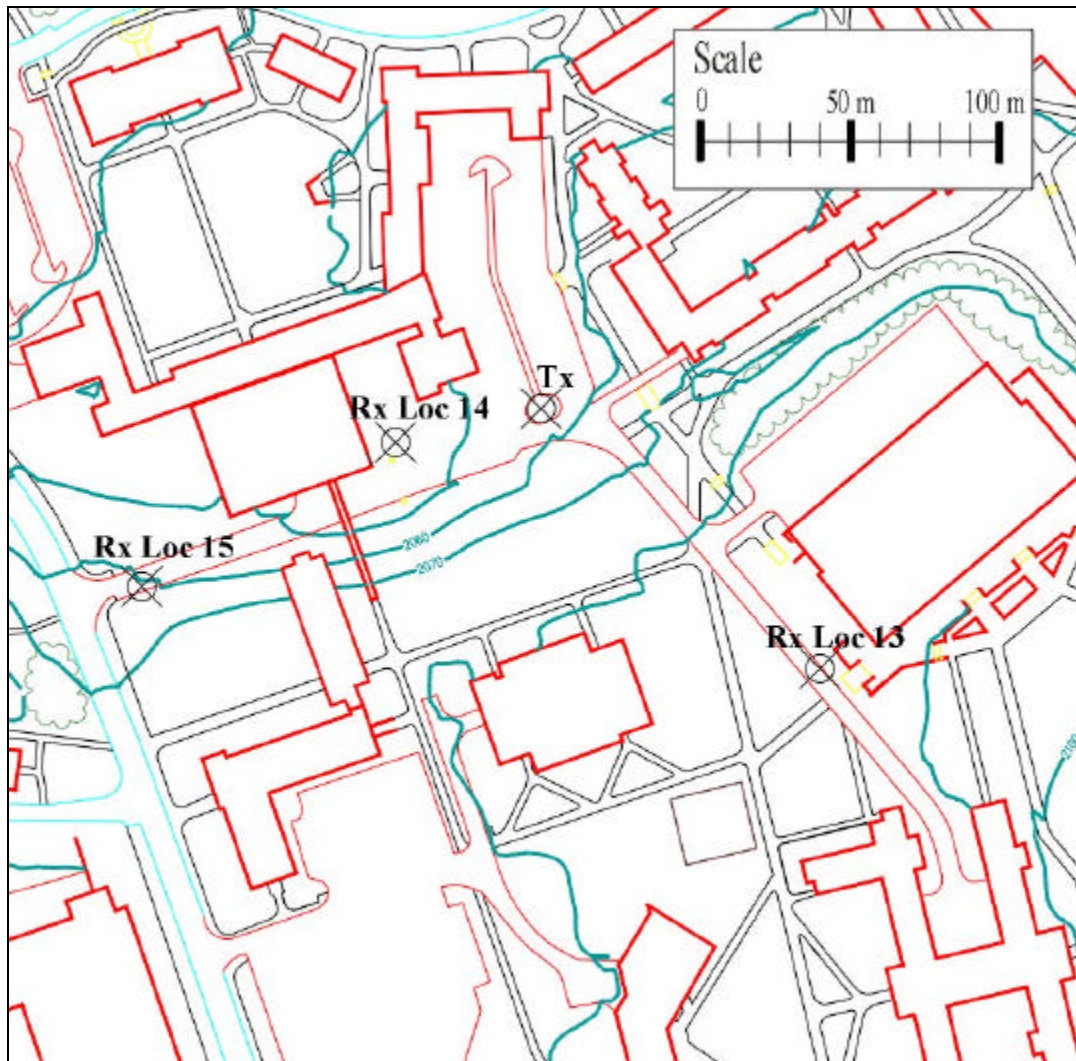


Figure A.2.1: Site map of Hutcheson Hall location. The transmitter is located at the end of a parking lot. All of the receivers are surrounded by academic and dormitory buildings.



Figure A.2.2: This picture looks down on the transmitter. The transmitter is at the near end of the parking lot and surrounded by academic buildings.



Figure A.2.3: Receiver location 5 is located further up the road. This link is obstructed by the crest of the hill.



Figure A.2.4: Receiver location 6 is located much closer to the transmitter and at nearly the same elevation.



Figure A.2.5: The receiver at location 7 is obstructed by a footbridge. The terrain is hilly and the academic building surrounding this receiver have widely varying heights.

A.3 Semi-Urban Area: Derring Hall

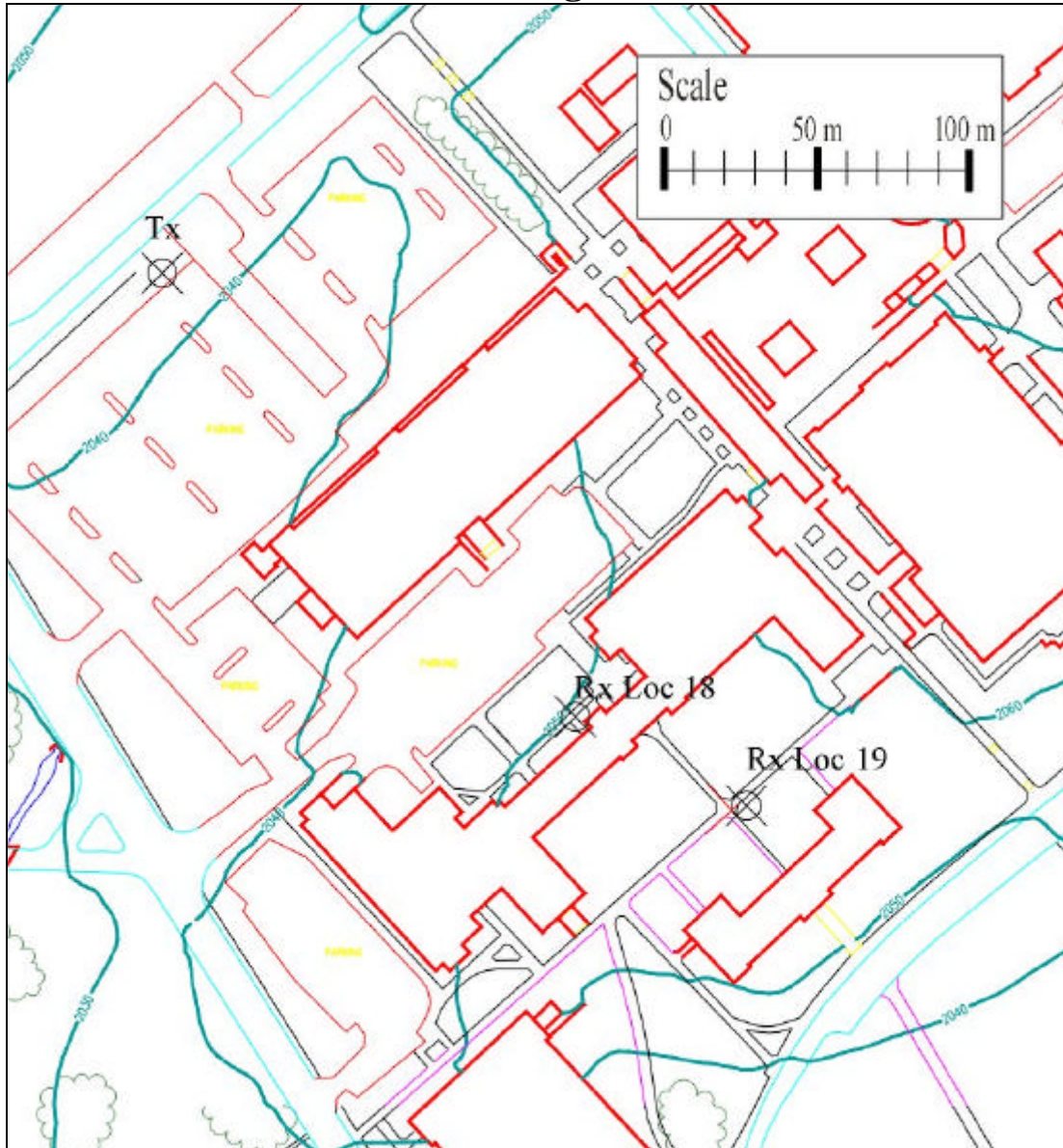


Figure A.3.1: Site map of Derring Hall location. The transmitter is located on the side of the Derring Hall parking lot. Receiver location 18 is located on the other side of Derring Hall. Receiver Location 19 is located further away on the other side of Pamplin Hall.



Figure A.3.2: The transmitter location for this site. This photo shows the transmitter and receiver carts connected back-to-back for a calibration test.



Figure A.3.3: Receiver Location 18 is on the other side of Derring Hall.



Figure A.3.4: Receiver Location 18 is also very close to Pamplin Hall.



Figure A.3.5: Receiver Location 19 is the furthest receiver location at this site. It is located within a wooded courtyard.

A.4 Semi-Urban Area: Drillfield

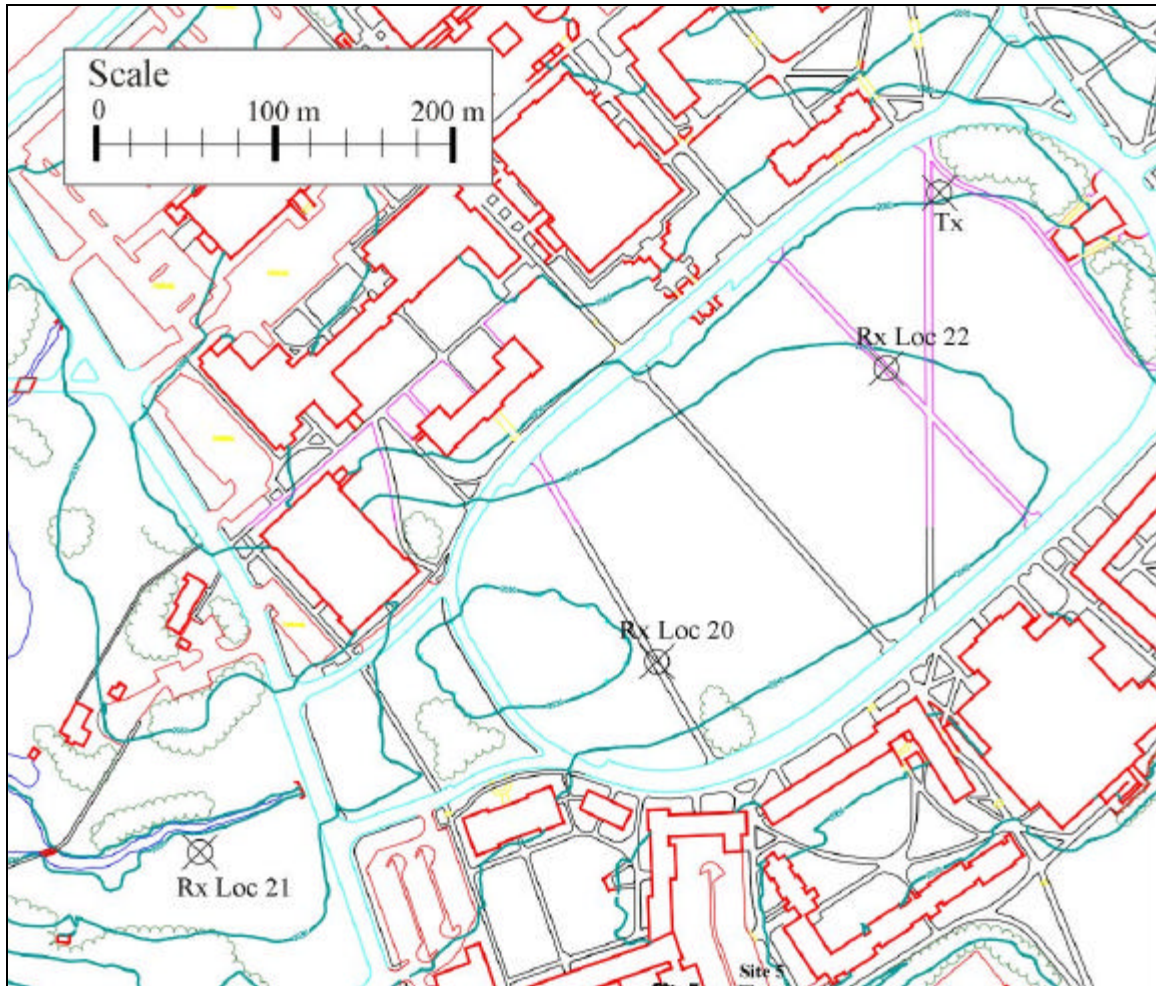


Figure A.4.1: The Drillfield is the large oval open area in this site map. Receiver locations 20 and 22 are located on the Drillfield, and receiver location 21 is located further away within a wooded area.



Figure A.4.2: Transmitter location at the Drillfield site. Shown here is the calibration of the transmitter and receiver.



Figure A.4.3: The transmitter cart at receiver location 20. The Drillfield is a wide, open area with academic and dormitory buildings beyond the trees at its edge.



Figure A.4.4: The receiver cart at receiver location 21. The Drillfield is in the background. The link has an unobstructed line-of-sight despite the surrounding trees.



Figure A.4.5: This picture shows the park-like surroundings at receiver location 21. The area is open near the receiver but with significant foliage further away.

A.5 Rural Area: Southgate Drive

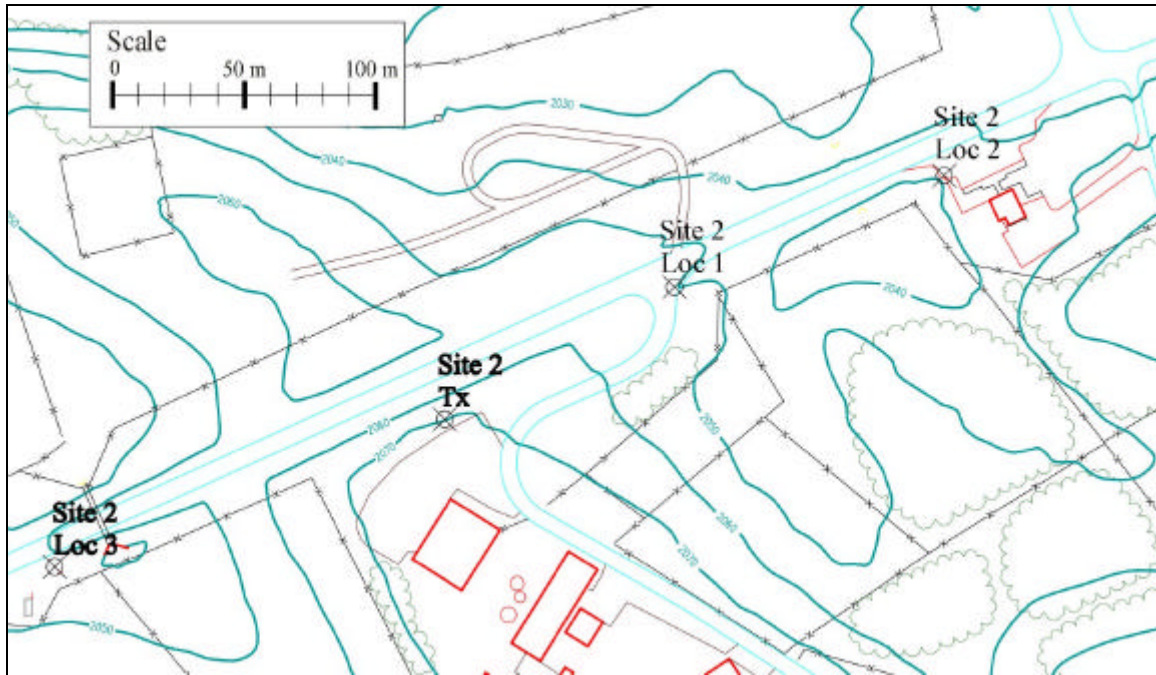


Figure A.5.1: Southgate Drive is a road through a rural area. A driving demonstration of the HMT could be conducted at this site. The buildings in the area are the Dairy Farm Barns and a small Visitor's Center near receiver location 6.



Figure A.5.2: This picture looks from the transmitting antenna to the receiver at location 5. Receiver location 6 is further down the road and is obstructed by trees. This picture shows that the transmitting antenna is on a hill elevated from both the receiver and the road.



Figure A.2.3: Receiver location 3, pictured here, is down the opposite direction on Southgate Drive. The location is very rural – a cow pasture is on the left side of the picture, and a corn field in on the right.

A.6 Rural Area: The Beef Cattle Farm

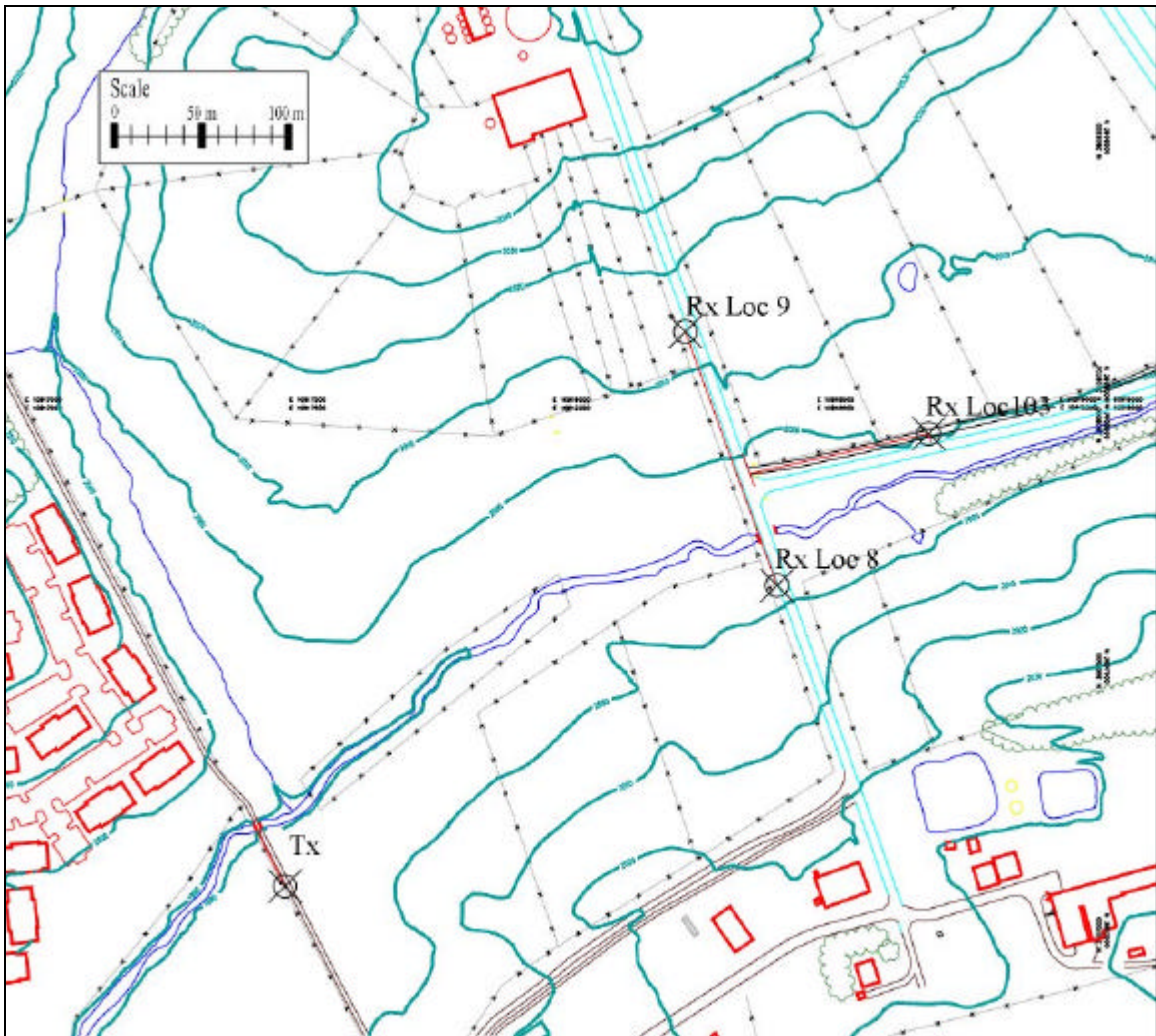


Figure A.6.1: The Beef Cattle Farm site is mostly open with sparse barns and trees. A creek runs through the middle of the site. Some apartment buildings are near to the transmitter.



Figure A.6.2: The transmitter is located at the end of this path.



Figure A.6.3: The rural environment at and around the Beef Cattle Farm. Shown here are two barns and the surrounding fields.

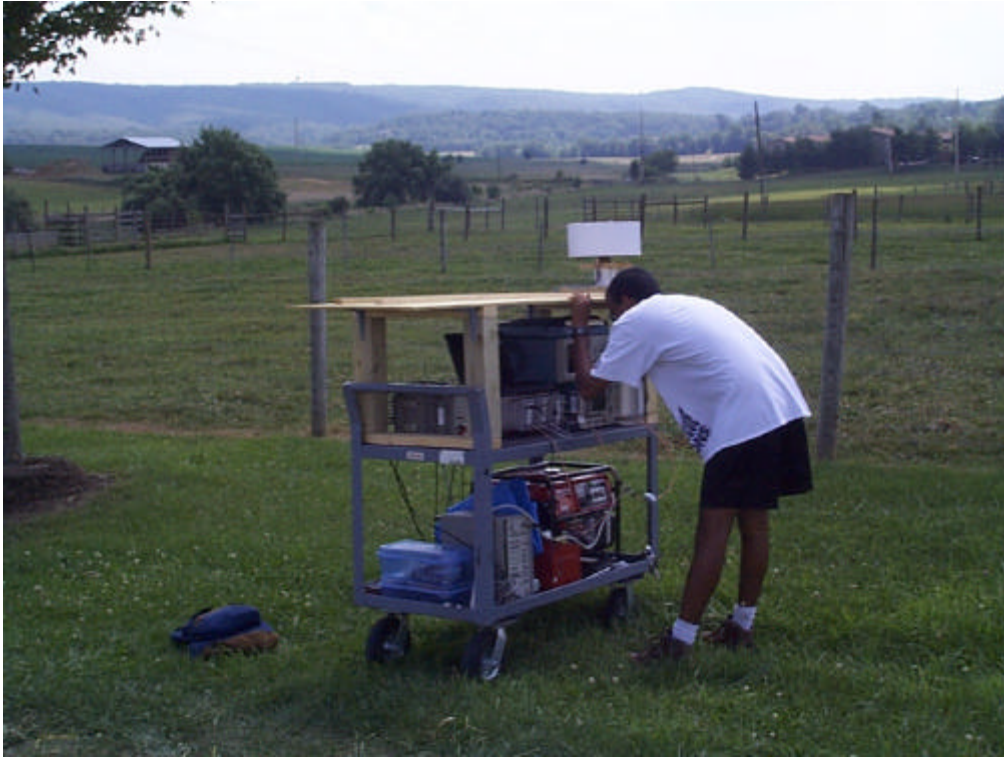


Figure A.6.4: The receiver cart at receiver location 9. This link was line-of-sight across an open field.



Figure A.6.5: Shown here is receiver location 10. The line-of-sight is obstructed by numerous trees. This was the longest link at this site.

A.7 Rural Area: Forest

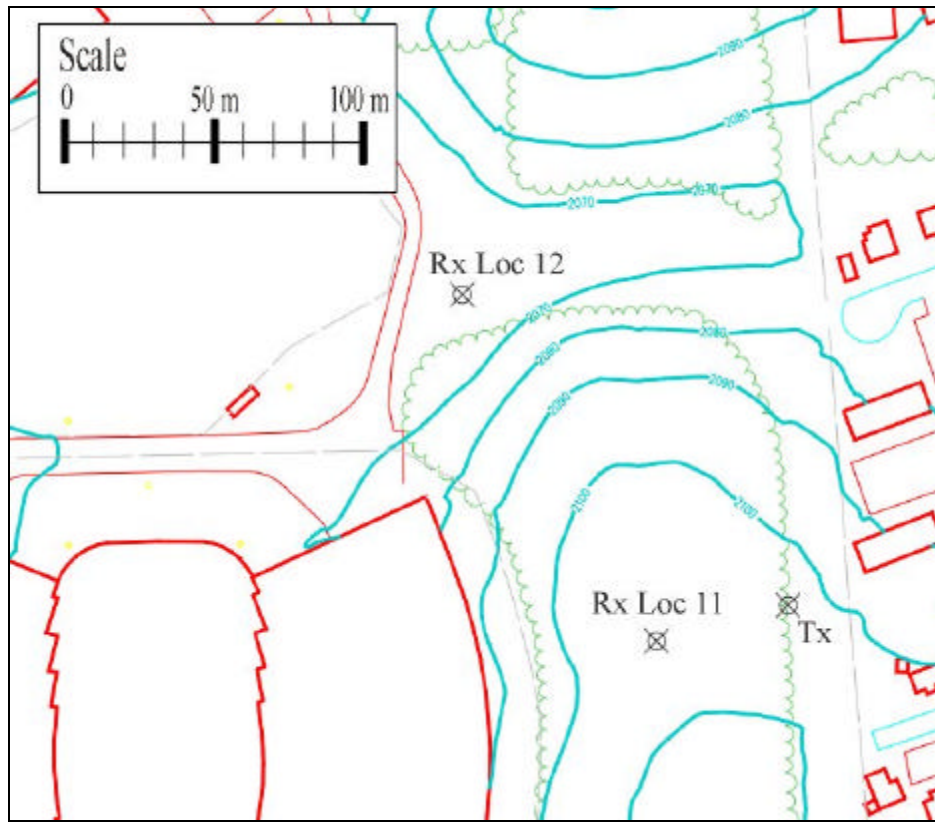


Figure A.7.1: The wavy green line shows the outline of the dense forest area. The forest is between Lane Stadium, shown on the left, and several houses, shown on the left.



Figure A.7.2: The transmitter is located at the edge of the forest.



Figure A.7.3: This picture shows the trees and underbrush that obstruct the link between the transmitter and receiver location 11.



Figure A.7.4: Shown here is the receiver cart at receiver location 11.



Figure A.7.5: Receiver location 12, shown here, is at the bottom of a hill and just outside of the forest.



Figure A.7.6: This picture shows the density of the vegetation looking back to the transmitter from receiver location 12.

A.8 Rural Area: Golf Course and Cage

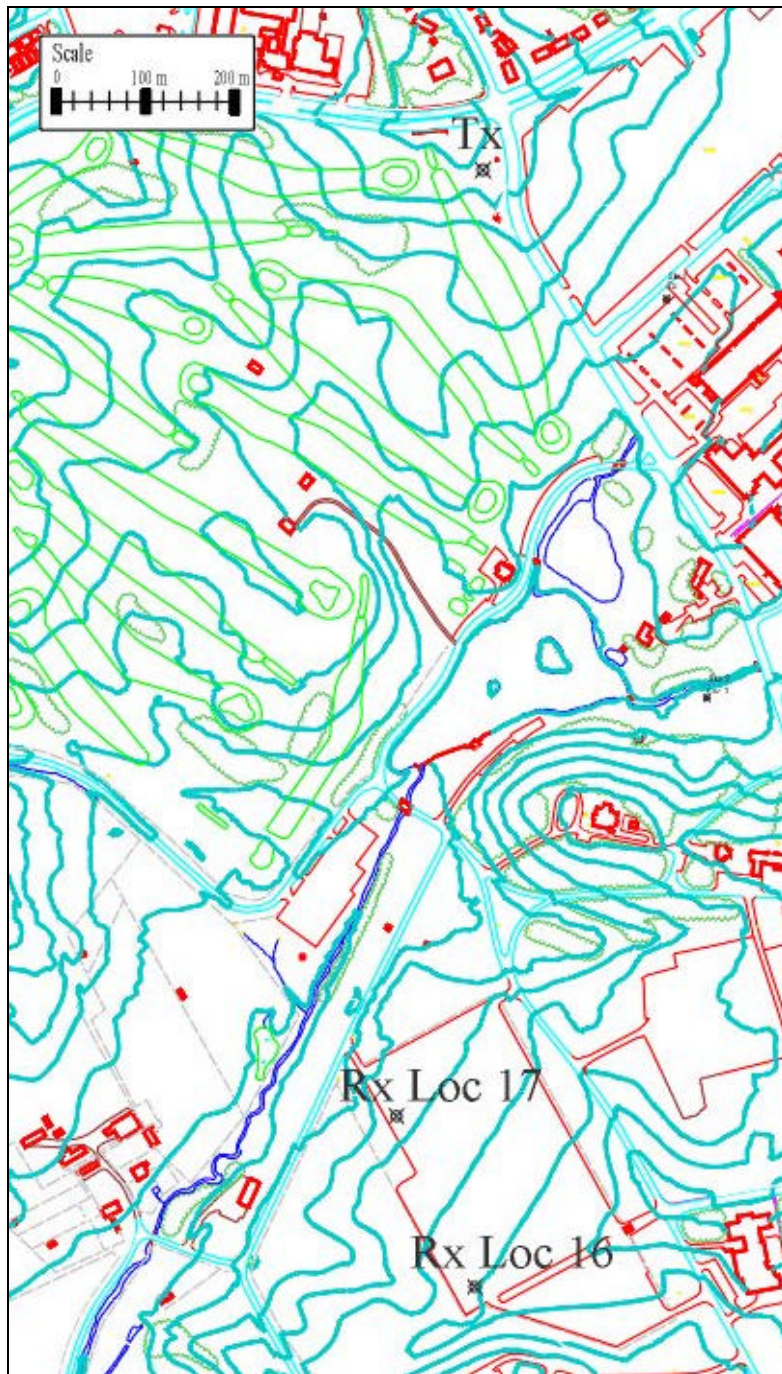


Figure A.8.1: The links at this site are the longest of the measurement campaign. The Receiver locations are in the Cage, the large parking at the bottom of the screen. The transmitter is located at the opposite end of the Golf Course at the top of the map.



Figure A.8.2: The transmitter for the site is located at the end of the Virginia Tech Golf Course. The truck used for transportation of the measurement equipment is also shown.



Figure A.8.3: Receiver location 16 is in a parking lot surrounded by corn fields and rural areas. The parking lot is nearly empty.



Figure A.8.4: The background at receiver location 16 is also rural.



Figure A.8.5: Receiver location 17 is closer to the Golf Course, which is visible in the background of this picture.