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U.S. DEPARTMENT OF COMMERCE
Environmental Science Services Administration
Research Laboratories

Tabulations of Propagation Data Over Irregular Terrain in the 230-to 9200-MHz Frequency Range

Part III: North Table Mountain-Golden

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BOULDER, COLO.
JULY 1970

U. S. DEPARTMENT OF COMMERCE
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ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
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Part III: North Table Mountain - Golden

P. L. McQuate, J. M. Harman,
M. E. McClanahan, and A. P. Barsis

This is the third part of a four-part report containing tabulations and graphs of transmission loss data resulting from propagation experiments in the 230- to 9200-MHz frequency range conducted over irregular terrain in Colorado. This part describes data obtained at a common receiver site, which is located on a high mesa near Golden, Colorado, over propagation paths varying in length from 0.5 to 80 km.

Key Words: Elevated antennas, irregular terrain, UHF propagation data

1. Introduction

The purpose of this four-part report series is to present tabulations of transmission loss data for propagation over irregular terrain in Colorado with path lengths ranging from 0.5 to 120 km at seven frequencies in the 230- to 9200-MHz range.

The measurement program was sponsored by the U. S. Army Electronics Command and the U. S. Security Agency as a part of a study of propagation characteristics under conditions resembling the operations of an army in the field.

Part I of this series (McQuate, Harman, and Barsis, 1968) presented data obtained at a common receiver site R1 located near the summit of a hill in the open plains area near Boulder, Colorado. Several of the transmitting sites were located in the mountains west of

Boulder; all others were located in the relatively open and rolling plains area.

Part II of this series (McQuate, Harman, Johnson, and Barsis, 1968) presented data obtained at a common receiver site R2, located in the mountains about 20 km west of Boulder. The mountains shield this site from the plains. Only 8 of the 44 transmitting sites associated with this receiving location are in the plains area.

This, the third part of the four-part report series, presents data obtained from common receiver site R3 located on the eastern edge of a high mesa (see fig. 1) at a juncture between the mountains and the plains. The mesa, identified as North Table Mountain, is located

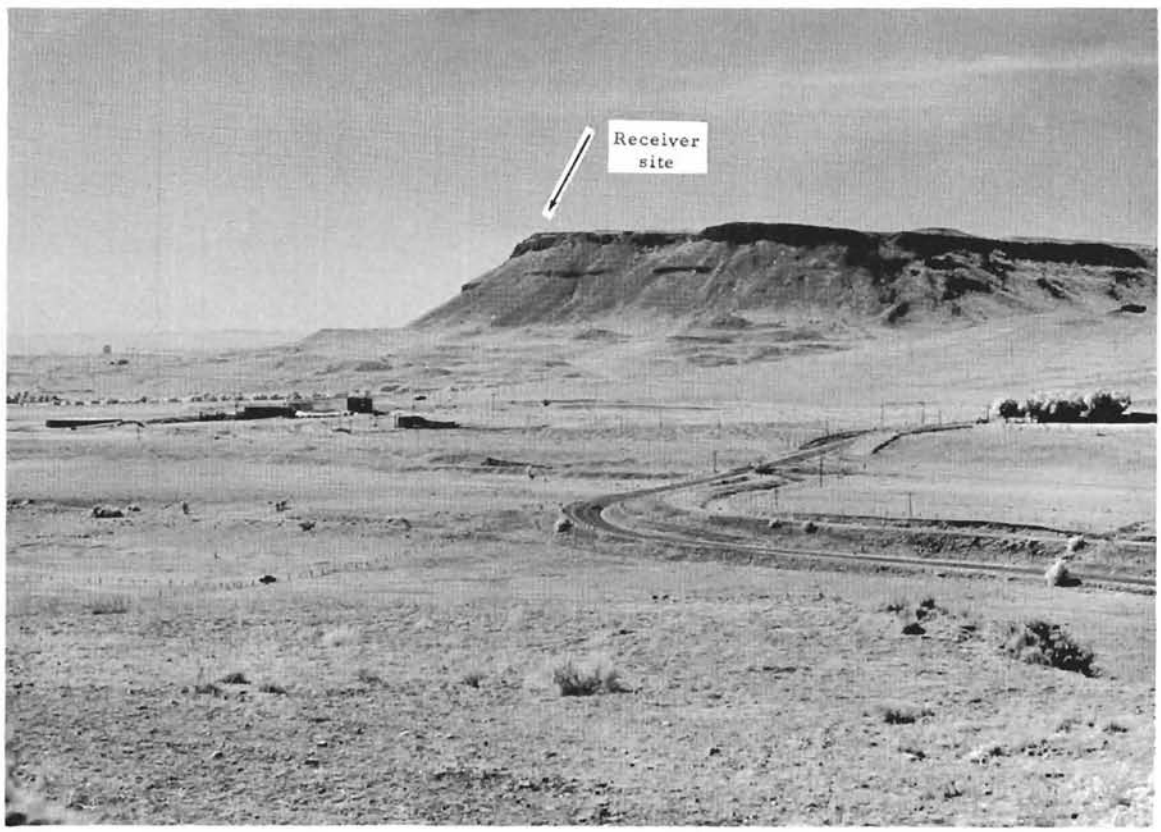


Figure 1. View of the common receiver site from a point near the transmitter site R3-5-T1.

about 3 km northeast of Golden, Colorado, and is visible to most of the 57 transmitting sites associated with the common receiver site. This site was selected to represent propagation from the ground to low-flying aircraft. To obtain as many different propagation paths as possible, all measurements were made with mobile transmitters and a fixed receiving site.

2. Measurement Program

Figure 2 presents an overall view of the measurement area and the distribution of the transmitter locations. It shows most of the 57 measurement locations arranged in concentric circles around the common receiving site at nominal distances of 0.5, 3, 5, 10, 20, 30, 40, 50, 55, 60, and 80 km.

Figures 3 and 4 are panoramic views of the measurement area taken from the antenna tower at the common receiver site. The bearings are measured clockwise from true north. All transmitting sites lie east of the mountains in the relatively open and rolling plains area. No transmitting sites are located in the city of Denver or near the Stapleton International Airport approach corridor east of the city. Most of the transmitting sites were selected to provide a clear, unobstructed foreground in the direction of the receiving antenna. However, eight transmitting sites were selected so that the transmitting installation, including the antennas, would be at least partly concealed from the receiving antenna at the transmitting terminal by the surrounding vegetation to represent a "concealed" location. Each concealed site has a "companion" open site; i.e., a site with a clear unobstructed foreground in the direction of the receiver. These sites are selected so that they are not more than 100 m apart and have essentially a common terrain profile.

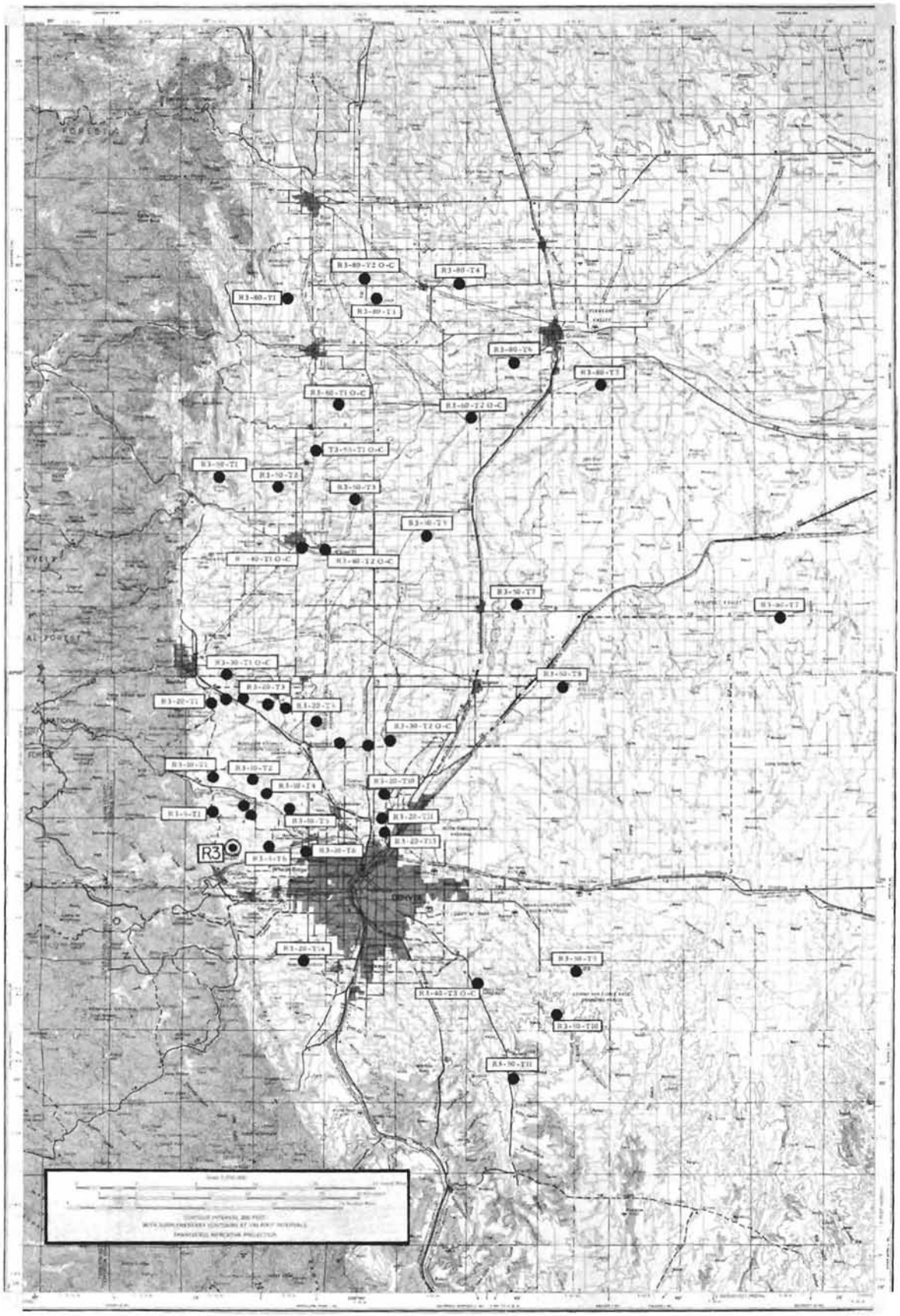


Figure 2. Layout of measurement points.

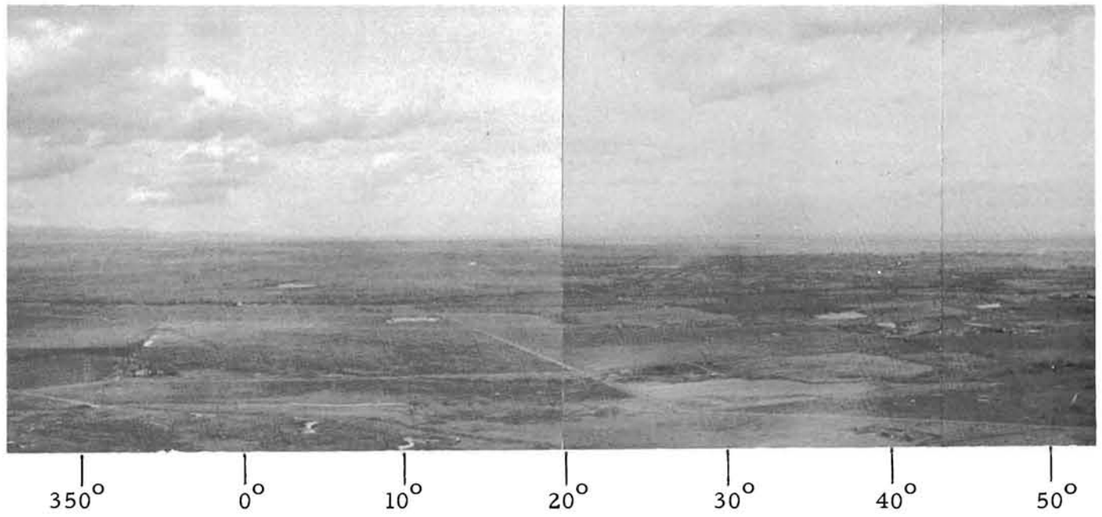


Figure 3. Panoramic view of the northern sector from the common receiver site. Azimuth in degrees from true north.

Figure 4. Panoramic view of the eastern sector from the common receiver site. Azimuth in degrees from true north.

All transmissions were continuous wave and frequencies of 230, 410, 751, 910, 1846, and 9190 MHz were used with horizontal polarization only.

3. Receiving Equipment

The seven frequencies were divided into two groups and separate receiver trailers and transmitter vans were outfitted for each group. Figure 5 shows the low frequency group (230, 410, and 751 MHz) receiver trailer at common receiver site R2 and figure 6 shows the receiver trailer, at common receiver site R1, used for the four higher frequencies (910, 1846, 4595, and 9190 MHz). Both figures show the antennas associated with each frequency group mounted on movable carriages attached to identical towers. The carriage can be installed on any of the four tower faces and can be raised or lowered between the limits of 1 and 15 km above ground at a speed of approximately 0.6 m/sec. A servo system, attached to the antenna carriage, drives a strip-chart recorder upon which continuous signal strength versus antenna height recordings were made.

Figure 7, a photograph taken from a ledge on the eastern face of the mesa, shows the receiver antenna tower at the R3 location with the 910-, 1846-, 4595-, and 9190-MHz receiving antennas elevated about 11 m above the ground and the great difference in elevation between this common receiver location and the valley below it. The photograph also indicates that the tower is not erected on the edge of the mesa. It is set back about 8 m from the edge to provide space for guying. This set-back causes the edge of the mesa to obstruct most of the paths at low receiver antenna elevations (at elevations up to 2.0 m above ground for the 3-km paths).

The same type of transmitting and receiving antennas were used for each frequency, and the electrical characteristics of each pair of

Figure 5. The low frequency receiving unit at common receiver site R2.

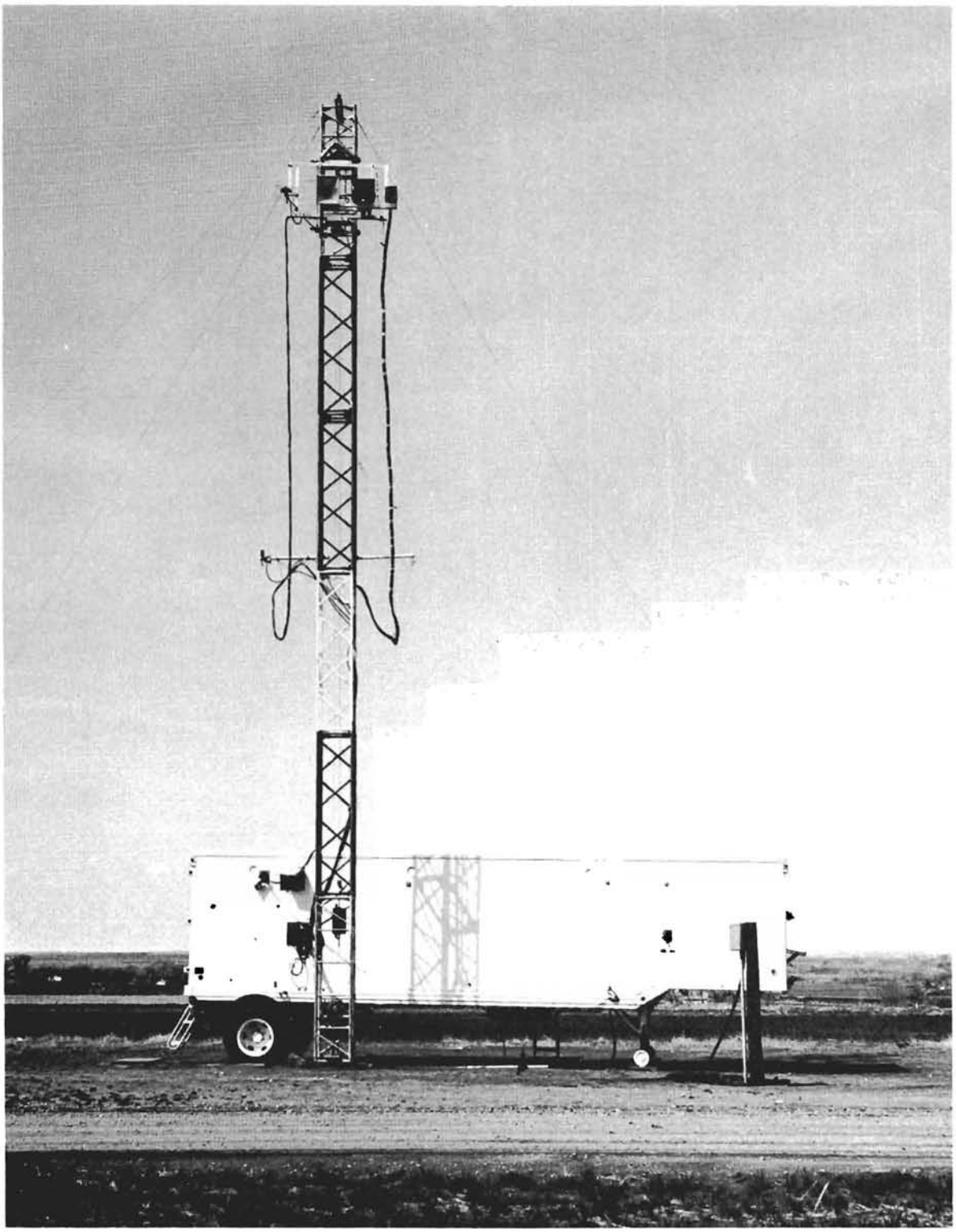


Figure 6. The upper frequency receiving equipment at common receiver site R1.

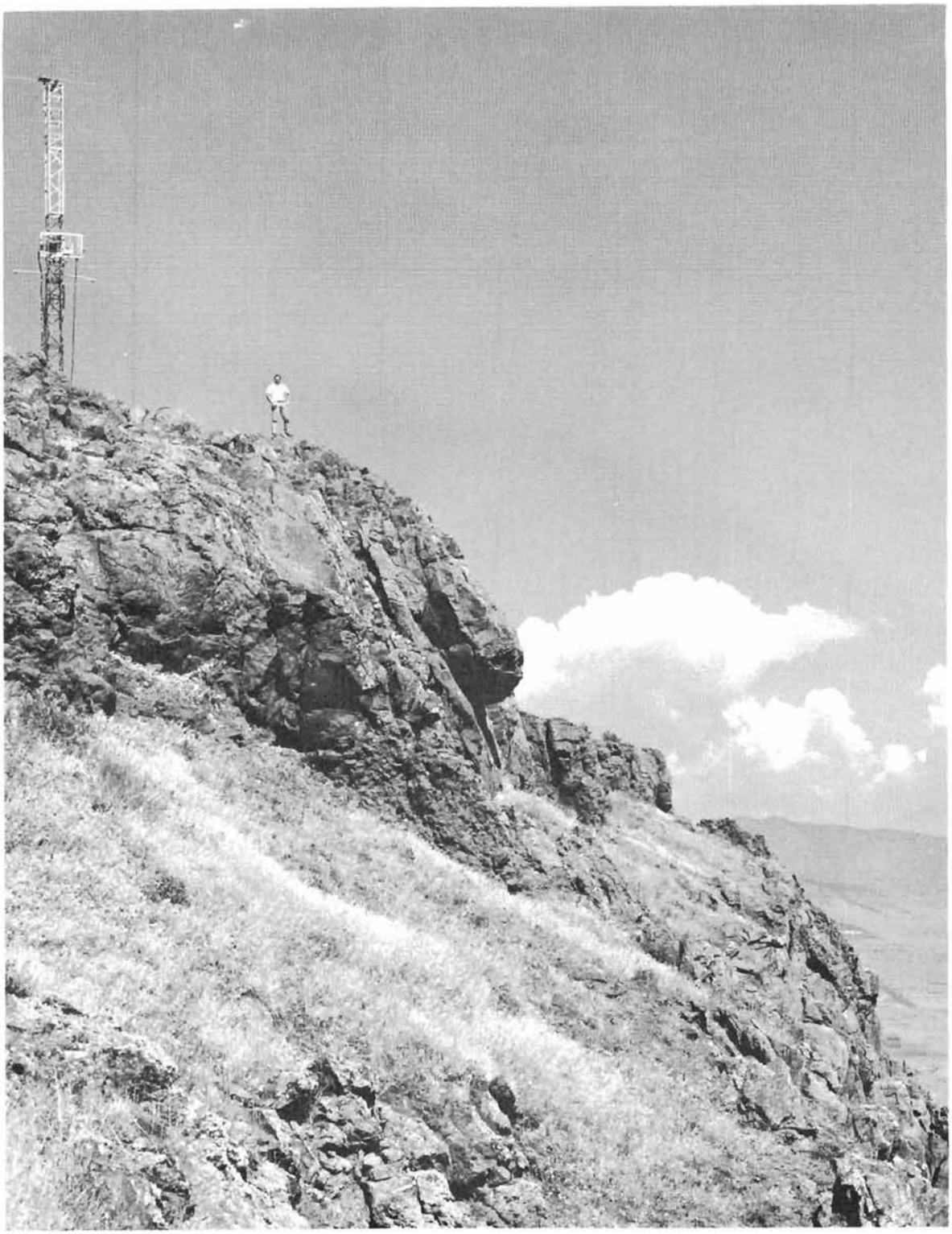


Figure 7. The upper frequency antenna tower at common receiver site R3.

antennas were also almost identical. These parameters are given in table 1. The voltage standing-wave ratio of the antenna systems, as viewed from the receiver inputs, exhibited essentially no change as the antennas were moved up and down the tower.

Propagation data for the higher four frequencies were obtained between June 21 and August 5, 1966, and data for the three lower frequencies were obtained between September 9 and October 10, 1966.

4. Transmitting Equipment

The transmitting equipment was housed in two mobile vans; one was used for the three lower frequencies, the other for the four higher frequencies. Figures 8 and 9 show the vans at separate transmitting sites. The antennas were mounted side by side on a framework attached to a rigid mast that pivoted in elevation and azimuth on a base mounted on the top of the transmitter van. This arrangement assured constant antenna height for each frequency group (6.6 m for the lower frequency group and 7.3 m for the higher). After the antenna assembly had been raised and before transmission, the antennas were oriented to the path azimuth by a siting device mounted on the antenna mast, if the common receiver location was visible, or with the aid of a compass when the receiver location was obscured by terrain or atmospheric conditions.

5. Data Presentation and Tabulations

The data are arranged and coded as in parts I and II of this report series; i.e., by path distance and for each distance sequentially by azimuth counted clockwise from true north. For example, R3-10-T4 indicates a 10-km path from the common receiver site R3 to transmitter T4, which is the fourth site at the 10-km distance counted clockwise from true north. Pairs of open and concealed sites are denoted by the standard site designation followed by "open" or "O" for open or

Table 1. Antenna Parameters

Freq. in MHz	1/2 Power Beamwidth	Description	Free-Space Gain Above Isotropic, dB	Height Above Ground, m Transmitting	Height Above Ground, m Receiving
230	38°	half-wave center-fed dipole with reflector	6.9	6.6	1-15 (continuously variable at all frequencies)
410	58°	three-element Yagi with reflector	8.6	6.6	
751	59°	half-wave center-fed folded dipole with reflector	7.9	6.6	
910	52.5°	four-element Yagi with reflector	9.1	7.3	
1846	33°	horn	15.2	7.3	
4595	12.5°	horn	19.7	7.3	
9190	12.5°	horn	21.0	7.3	

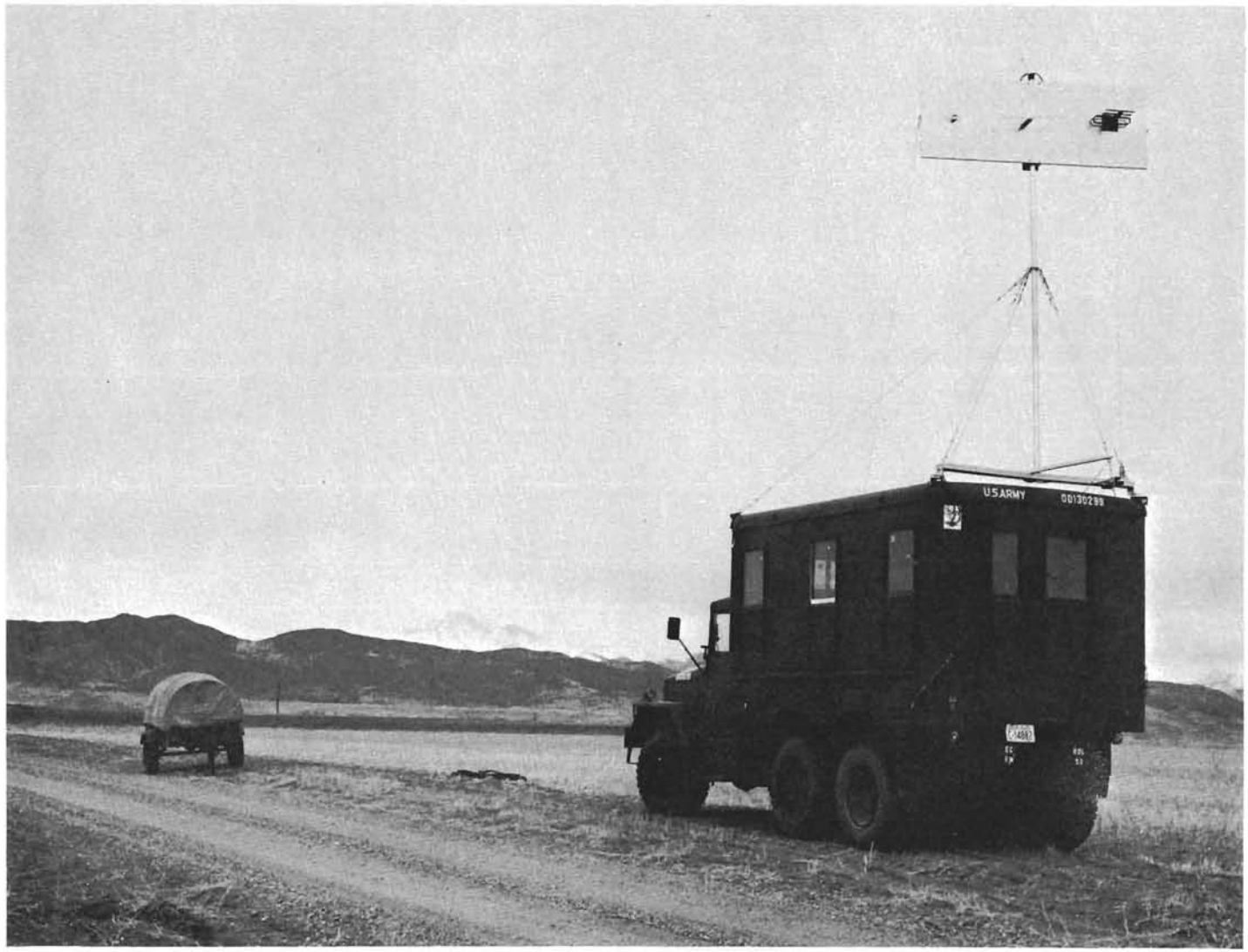


Figure 8. Lower frequency group transmitting unit.

Figure 9. Upper frequency group transmitting unit.

unobstructed sites, or "concealed" or "C" for sites that are at least partly concealed by vegetation at the transmitter site.

The data for each transmission path usually comprise three pages arranged in the following order:

The first page includes site designation and code with the photograph(s) of terrain taken at the transmitter site in the direction of the receiver.

The second page contains a graph of basic transmission loss versus receiving antenna height derived from the path-loss measurements with the site designation and code and measurement data for each group indicated; only data from open sites are shown here. In addition to the free-space basic transmission loss, values of maximum measurable loss are also indicated for all frequencies, if the received signal level was below the receiver noise level.

A number of these graphs do not show curves for all seven frequencies. Curves for some frequencies are omitted because of equipment malfunction, temporary inaccessibility of transmitter sites, obvious calibration errors, and misalignments of antennas.

The third page shows again the site code and includes the following:

(a) The path profile, with site elevation and path length indicated, drawn in each case by using an effective earth radius based on a surface refractivity value of 290 N-units. This represents an average for the area where the measurements were made.

(b) The results of the time recording before each height-gain run, shown below the path profiles and designated "L_b(dB) short term signal variability". The 50 percent value is defined as the dB value exceeded 50 percent of the time during the time recording period and the 10 - 90 percent value is defined as the dB difference

between the levels of the received signal exceeded for 90 percent and 10 percent of the time recording period.

(c) Field notes describing the terrain and significant obstacles along the transmission path.

Additional pages (where applicable) include data for the "O" and "C" pairs of basic transmission loss versus receiving antenna height, and pertinent profile information, time run data, and descriptive material related to the concealed site.

6. Acknowledgements

Nearly all personnel within the Tropospheric Radio Systems Predictions Group of the Insitute for Telecommunication Sciences participated in the collection, analysis, and evaluation of the data.

7. References

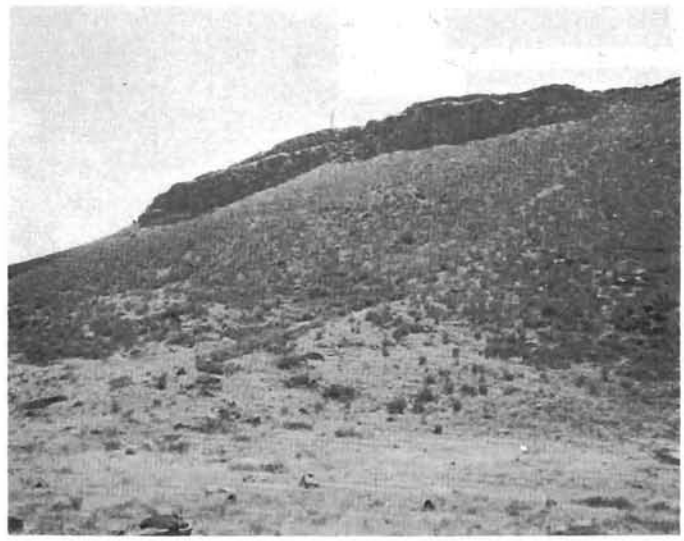
McQuate, P. L., J. M. Harman, and A. P. Barsis (1968), Tabulations of propagation data over irregular terrain in the 230- to 9200-MHz frequency range, Part I: Gunbarrel Hill receiver site, ESSA Tech. Rept. ERL 65-ITS 58 (U. S. Govt. Printing Office, Washington, D. C.).

McQuate, P. L., J. M. Harman, M. E. Johnson, and A. P. Barsis (1968), Tabulations of propagation data over irregular terrain in the 230- to 9200-MHz frequency range, Part II: Fritz Peak receiver site, ESSA Tech. Rept. ERL 65-ITS 58-2 (U. S. Govt. Printing Office, Washington, D. C.).

8. Tabulation of Data

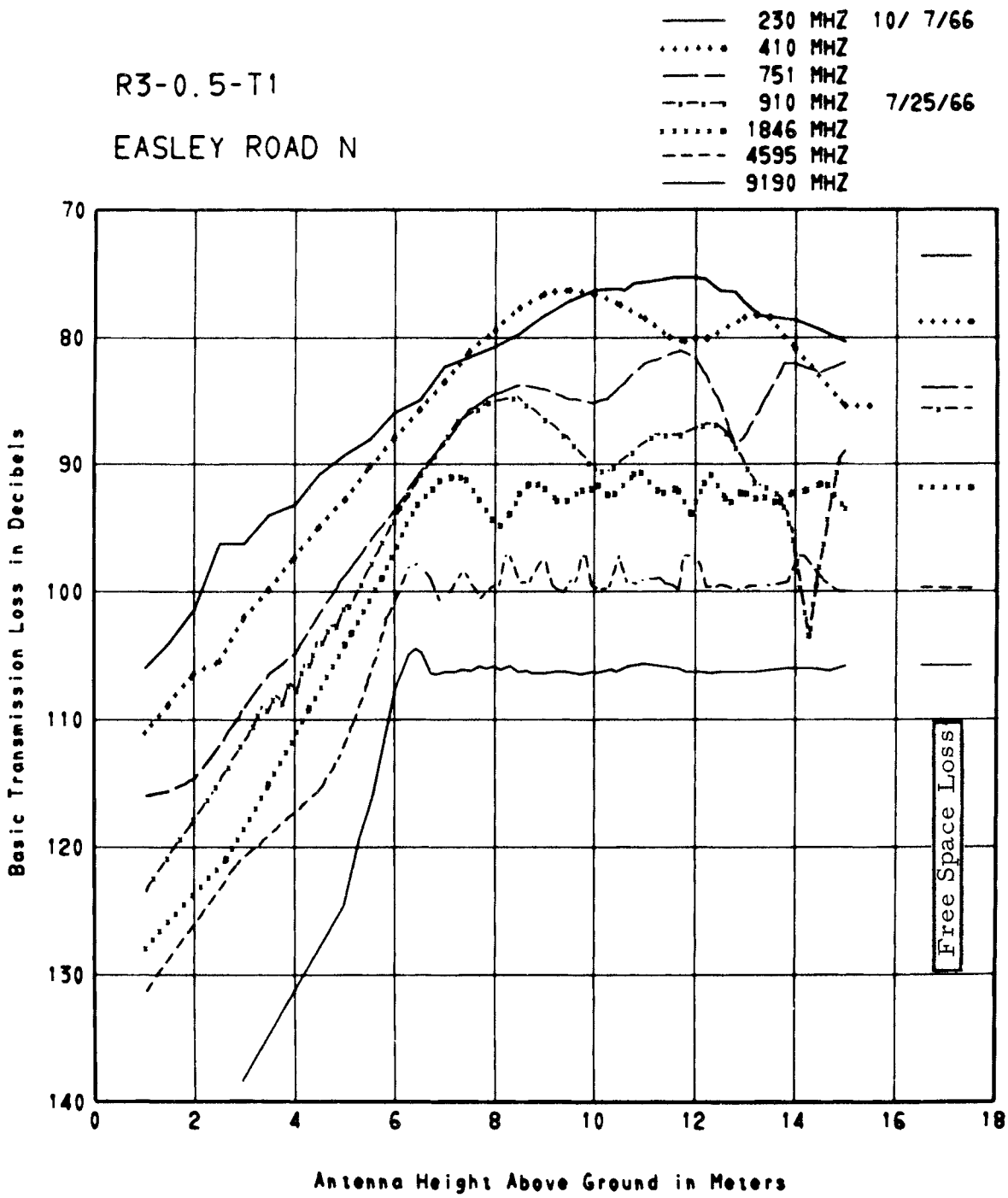
Propagation data tabulations are presented on pages 17 through 216. Figure numbers in this section have been omitted since all data, pictures, and graphs are identified by the appropriate site code number.

R3-0.5-T1
EASLEY ROAD NORTH

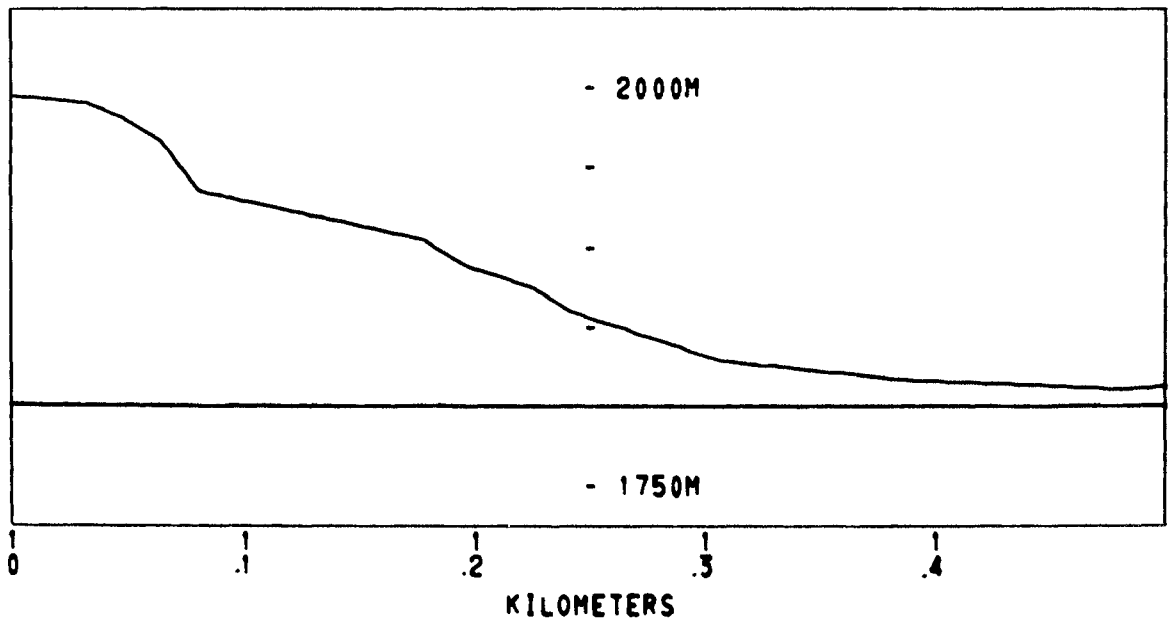


PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is
08^{o} 24' 55" T.


230 MHZ 10/ 7/66
410 MHZ
751 MHZ
910 MHZ 7/25/66
1846 MHZ
4595 MHZ
9190 MHZ
R3-0.5-T1
EASLEY ROAD N
Basic Transmission Loss in Decibels
70
80
90
100
110
120
130
140
0
2
4
6
8
10
12
14
16
18
Antenna Height Above Ground in Meters
Free Space Loss

RCVR. ELEV.	R3-0.5-T1	XMTR. ELEV.
1995 M	PATH LENGTH 0.50 km	1813 M

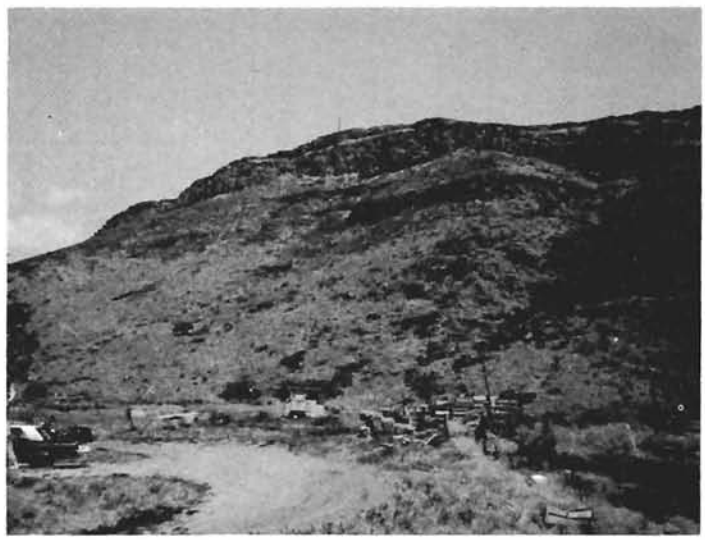


L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
	10-7-66 at 15 M				7-25-66 at 7.3 M		
50%	80.8	84.6	80.4	84.9	90.8	98.9	105.2
Δ10%-90%	< 3	< 3	< 3	< 3	< 3	< 3	< 3

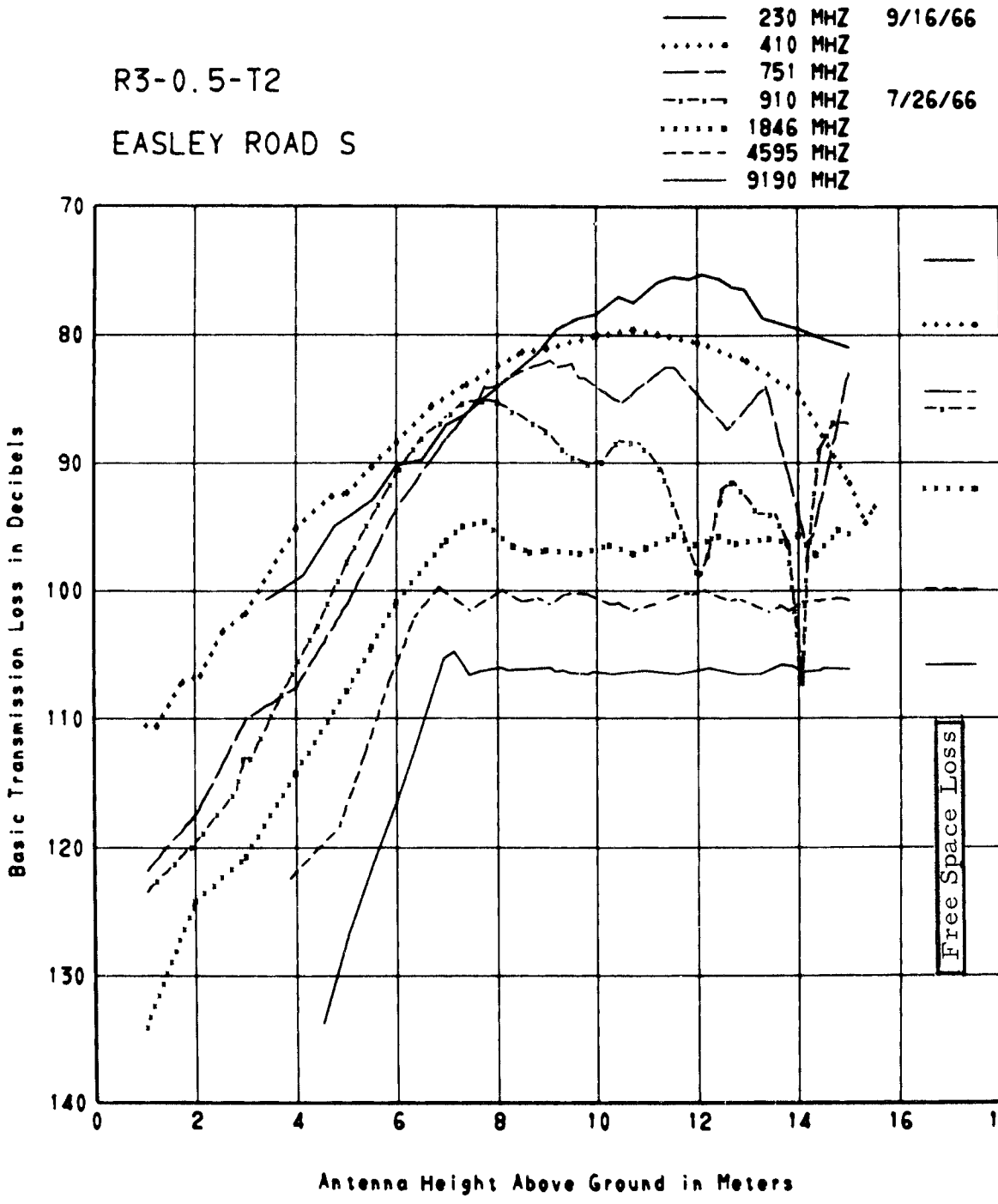
The path extends over grass and rocks for 70 m, then over rocks and sage brush for 70 m. The terrain breaks at this point and rises immediately to the antenna above the cliff.

R3-0.5-T2
EASLEY ROAD SOUTH

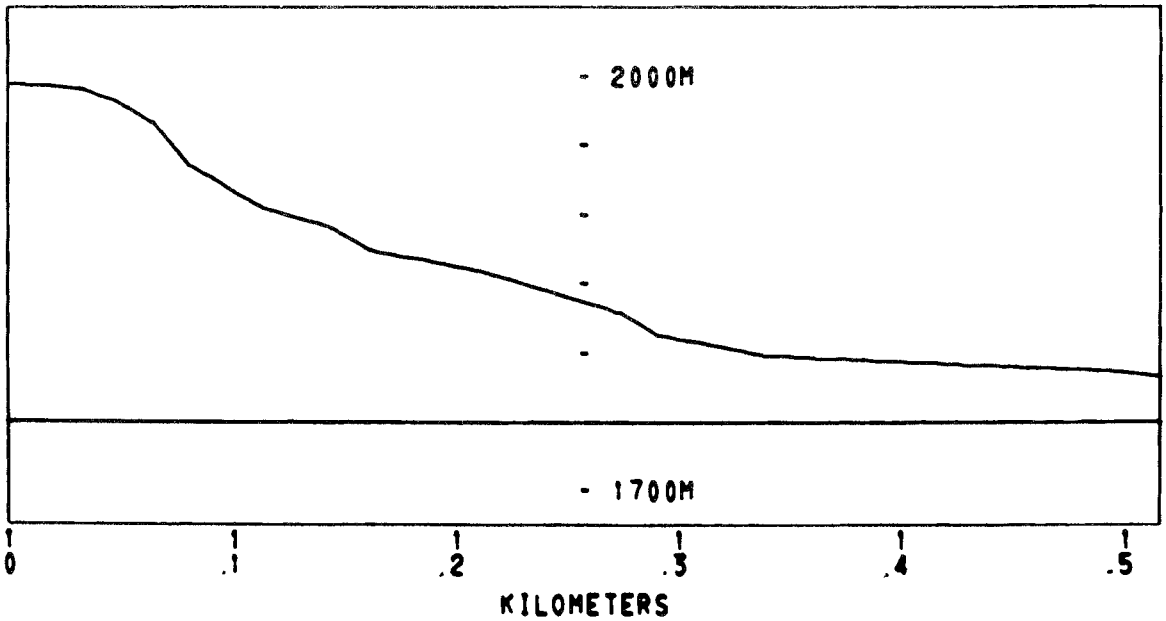


PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is
83° 38' 32" T.


R3-0.5-T2
EASLEY ROAD S
230 MHZ 9/16/66
410 MHZ
751 MHZ
910 MHZ 7/26/66
1846 MHZ
4595 MHZ
9190 MHZ
Free Space Loss
Basic Transmission Loss in Decibels
Antenna Height Above Ground in Meters
70
80
90
100
110
120
130
140
0
2
4
6
8
10
12
14
16
18

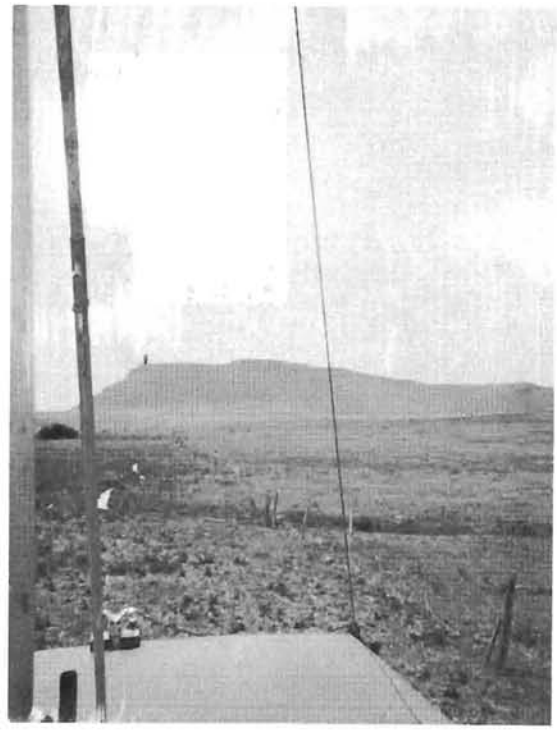
RCVR. ELEV.	R3-0.5-T2	XMTR. ELEV.
1995 M	PATH LENGTH 0.51 km	1783 M



L_b (dB) SHORT TERM SIGNAL VARIABILITY

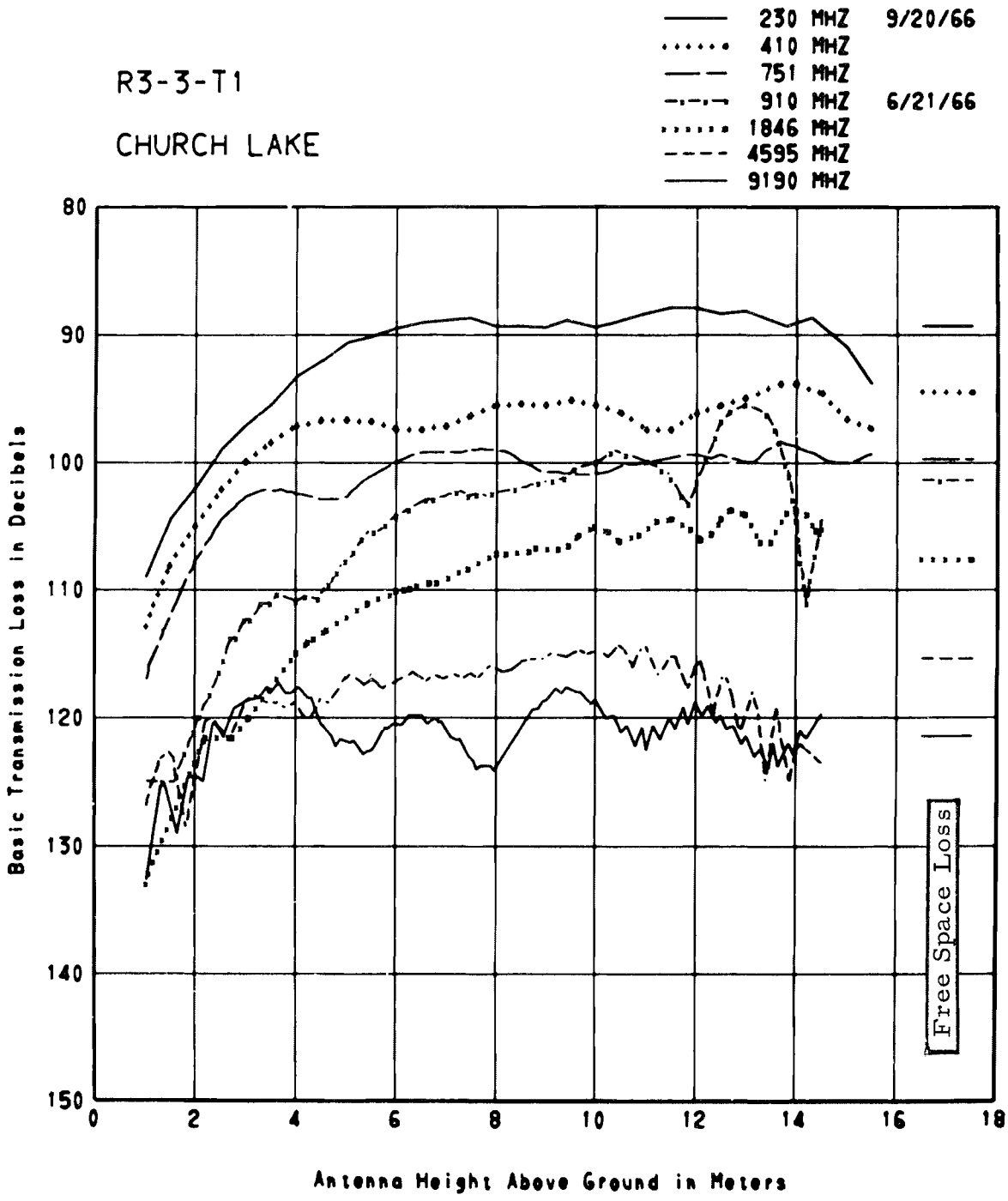
Freq(MHz)	230	410	751	910	1846	4595	9190
	9-16-66 at 15 M				7-26-66 at 7.3 M		
50%	79.2	91.2	88.3	85.7	94.0	100.1	106.3
Δ10%-90%	< 3	< 3	< 3	< 3	< 3	< 3	< 3

The site is located in a farmyard. The first 30 m of the path are clear, then there is a 3-wire fence with a horse trailer behind the fence. The next 30 m are fairly level, then there is a steep rise to the receiver tower. The ground covering is rock, sage brush, and a small amount of grass.

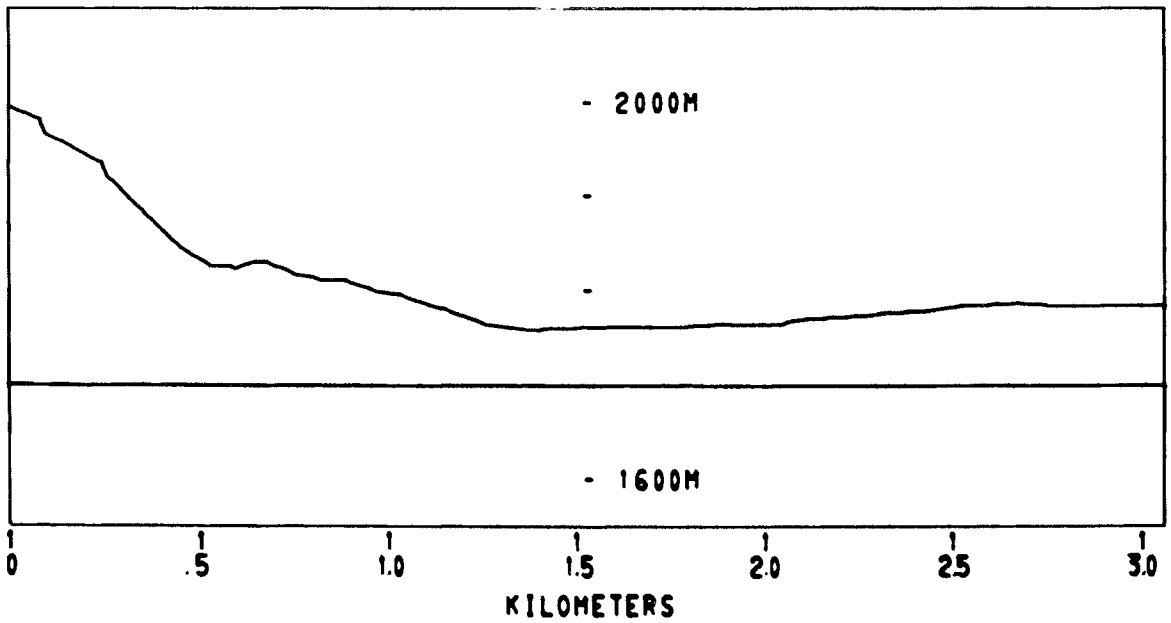


PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is 333° 51' 53" T.


230 MHZ 9/20/66
410 MHZ
751 MHZ
910 MHZ 6/21/66
1846 MHZ
4595 MHZ
9190 MHZ
R3-3-T1
CHURCH LAKE
Basic Transmission Loss in Decibels
80
90
100
110
120
130
140
150
0
2
4
6
8
10
12
14
16
18
Antenna Height Above Ground in Meters
Free Space Loss

RCVR. ELEV.	R3-3-T1	XMTR. ELEV.
1995 M	PATH LENGTH 3.06 km	1783 M



L_b (dB) SHORT TERM SIGNAL VARIABILITY

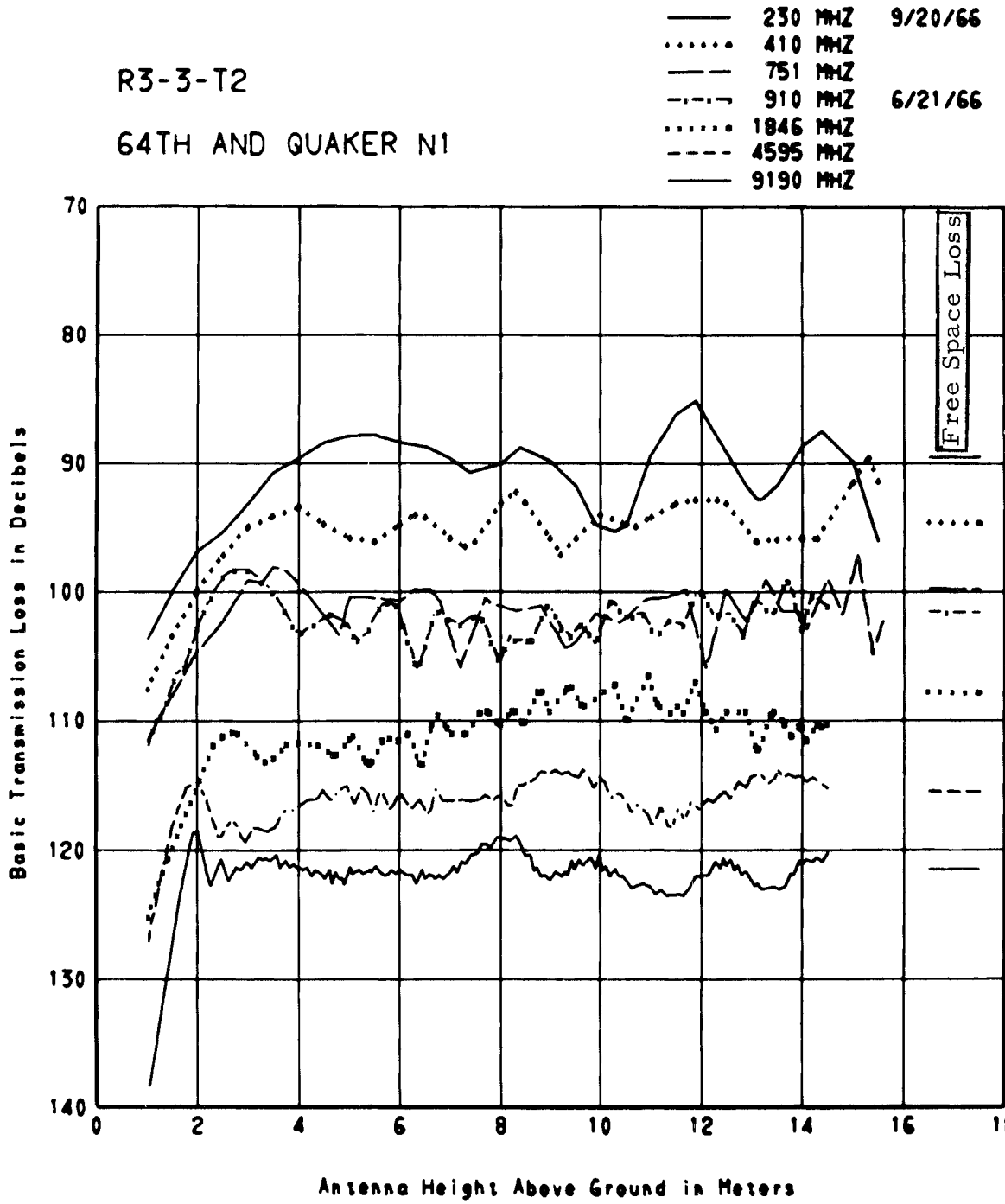
Freq(MHz)	230	410	751	910	1846	4595	9190
	9-20-66 at 15 M				6-21-66 at 7.3 M		
50%	93.6	93.2	99.4	101.8	107.6	116.6	119.6
Δ10%-90%	< 3	< 3	< 3	< 3	< 3	< 3	< 3

The site is on a curve in the road. There is a 4-wire fence just behind the truck and another about 6 m to the right of the path. A power line crosses the path at 0.8 km. The ground covering is wild grass, and a clump of brush, which is to the left of the path. A small irrigation ditch about 50 m along the path follows it for 30 m.

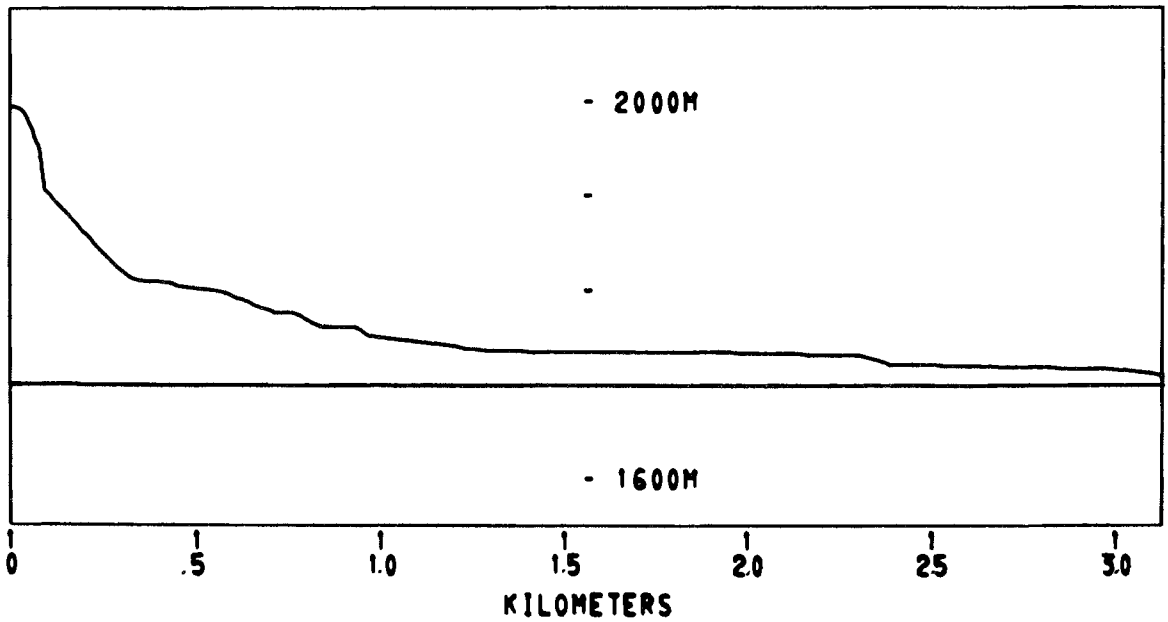
R3-3-T2
64TH AND NORTH QUAKER

PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is
24° 49' 17" T.


R3-3-T2
64TH AND QUAKER N1
230 MHZ 9/20/66
410 MHZ
751 MHZ
910 MHZ 6/21/66
1846 MHZ
4595 MHZ
9190 MHZ
Free Space Loss
Basic Transmission Loss in Decibels
70
80
90
100
110
120
130
140
0
2
4
6
8
10
12
14
16
18
Antenna Height Above Ground in Meters

RCVR. ELEV.	R3-3-T2	XMTR. ELEV.
1995 M	PATH LENGTH 3.12 km	1710 M



L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
	9-20-66 at 15 M				6-21-66 at 7.3 M		
50%	96.0	92.2	102.5	102.5	108.3	116.0	119.6
Δ10%-90%	< 3	< 3	< 3	< 3	< 3	< 3	< 3

The ground covering on this path is wild grass. A 4-wire fence crosses the path at 30 m. At 0.4 km, there is a low-voltage power line, and also houses to the right and to the left of the path. At 1.6 km, a new high-tension line is under construction.

R3-3-T3 OPEN AND CONCEALED
64TH AND QUAKER E

PATH VIEW FROM OPEN SITE

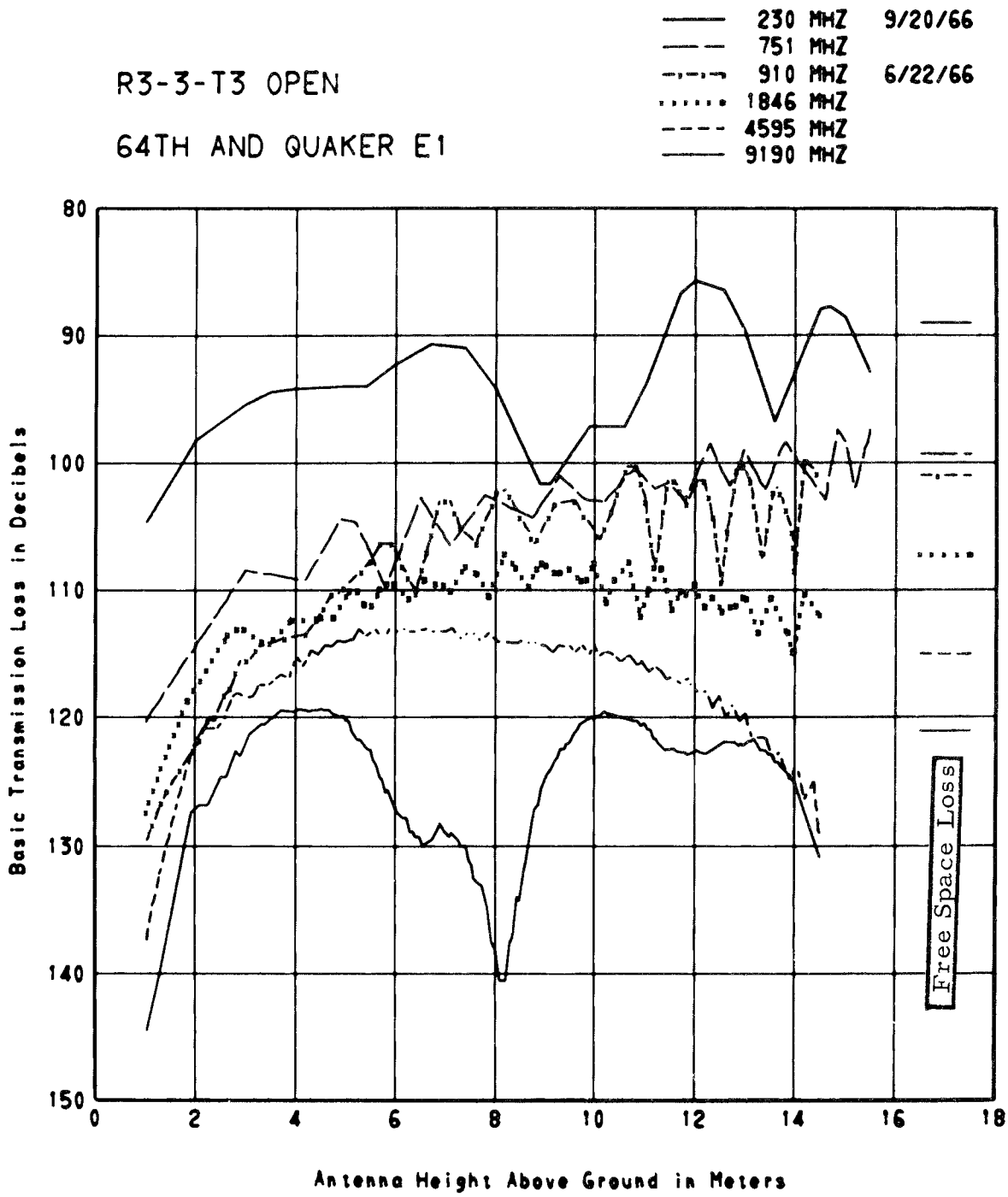
Bearing from common receiver site to transmitter site is 37^{o} 51' 27" T.

PATH VIEW FROM CONCEALED SITE

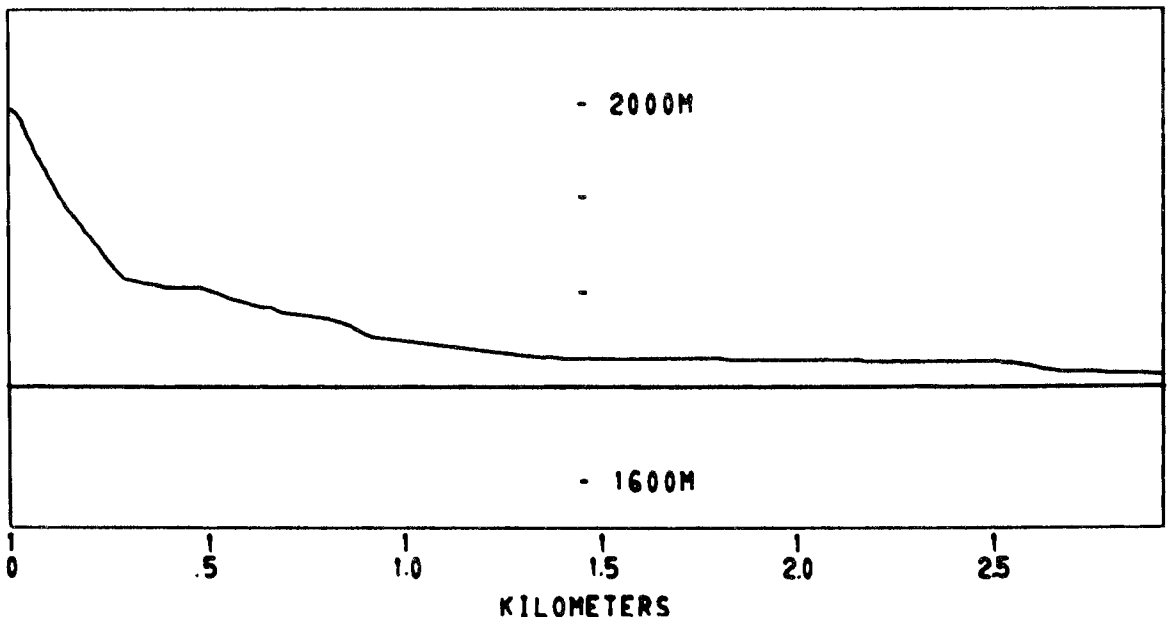
Bearing from common receiver site to transmitter site is 37^{o} 07' 08" T.

R3-3-T3 OPEN

64TH AND QUAKER E1



RCVR. ELEV.	R3-3-T3 OPEN	XMTR. ELEV.
1995 M	PATH LENGTH 2.93 km	1713 M



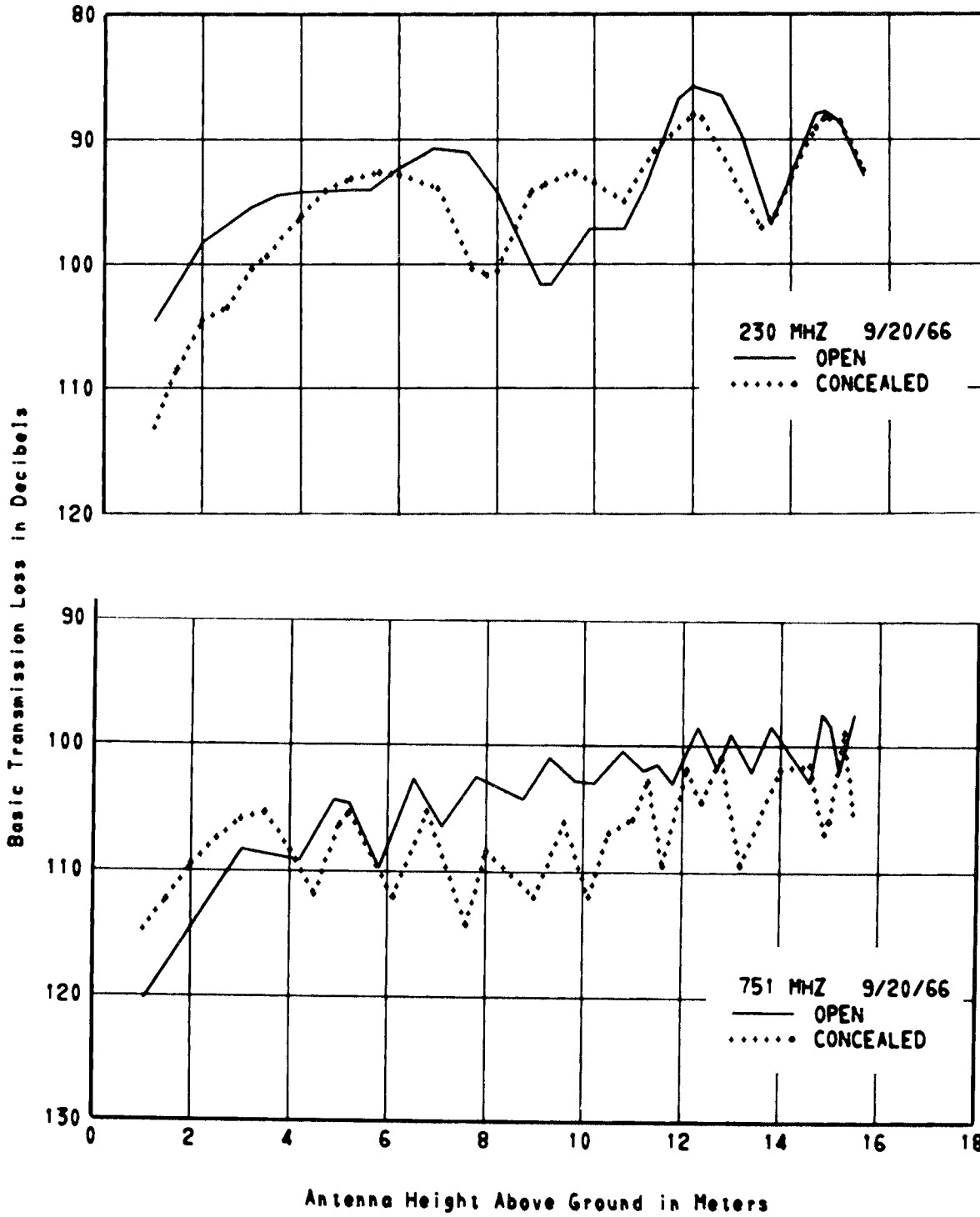
L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
	9-20-66 at 15 M				6-22-66 at 15 M		
50%	92.7		93.4	101.3	112.3	128.4	134.5
Δ10%-90%	< 3		< 3	< 3	< 3	< 3	< 3
					6-22-66 at 7.3 M		
50%				105.3	106.9	112.3	131.0
Δ10%-90%				< 3	< 3	< 3	< 3
					6-22-66 at 1 M		
50%				129.8	125.3	139.9	145.0
Δ10%-90%				< 3	< 3	< 3	< 3

The terrain covering is wild grass. There is a 5-wire fence on one side of the van, with a 4-wire power line 2 m above and 4 m in front of the antenna.

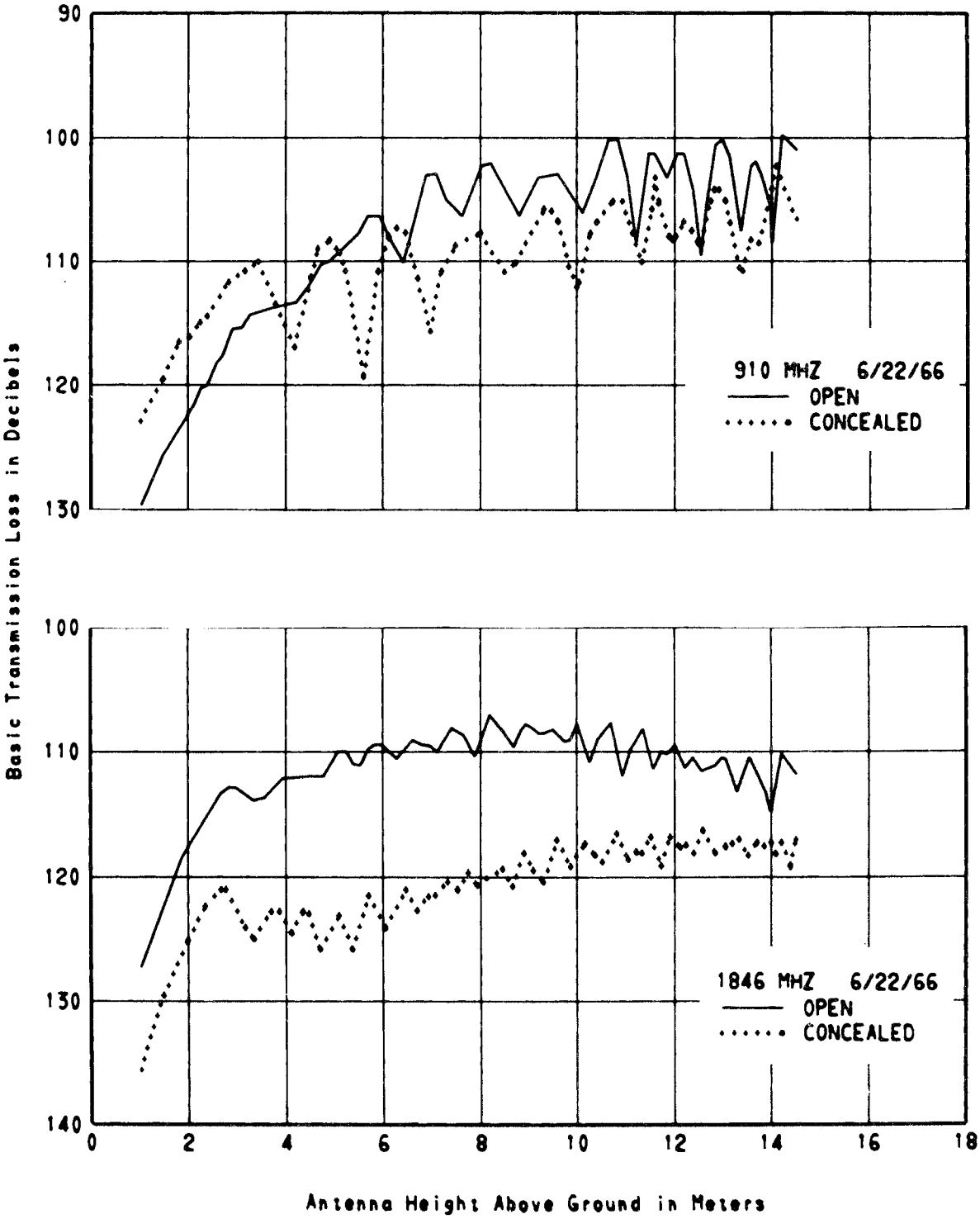
R3-3-T3 O&C

64TH AND QUAKER E1



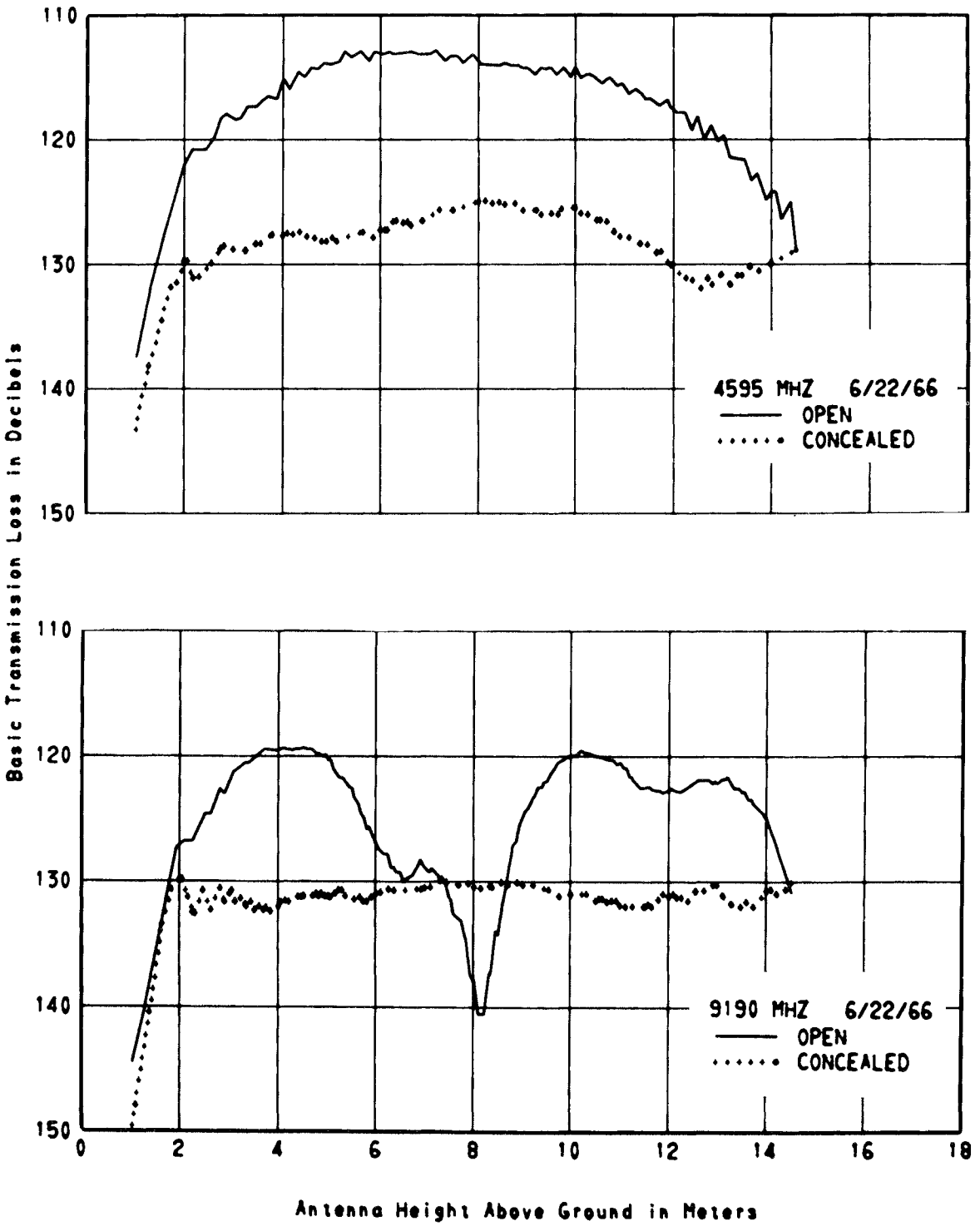
R3-3-T3 O&C

64TH AND QUAKER E1

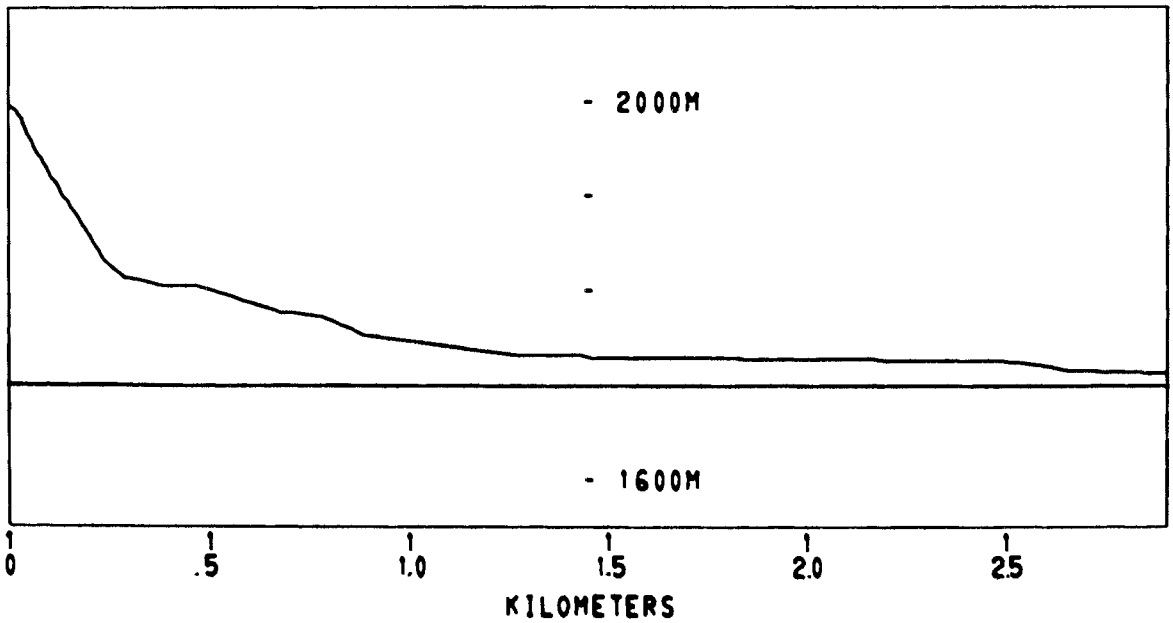


R3-3-T3 O&C

64TH AND QUAKER E1



RCVR. ELEV.	R3-3-T3 CONCEALED	XMTR. ELEV.
1995 M	PATH LENGTH 2.90 km	1713 M

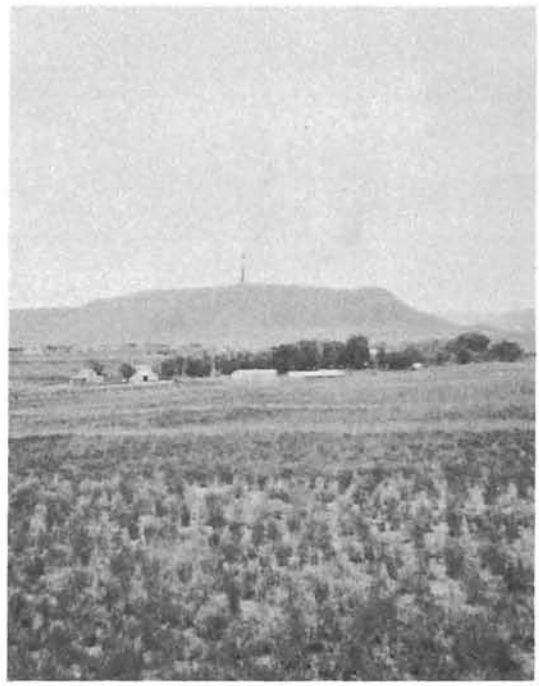


L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
	9-20-66 at 15 M				6-22-66 at 15 M		
50%	92.6		109.6	106.8	116.6	129.2	129.7
Δ10%-90%	< 3		< 3	< 3	< 3	< 3	< 3
					6-22-66 at 7.3 M		
50%				109.8	123.8	124.9	129.7
Δ10%-90%				< 3	< 3	< 3	< 3
					6-22-66 at 1 M		
50%				122.0	132.8	143.9	146.9
Δ10%-90%				< 3	< 3	< 3	< 3

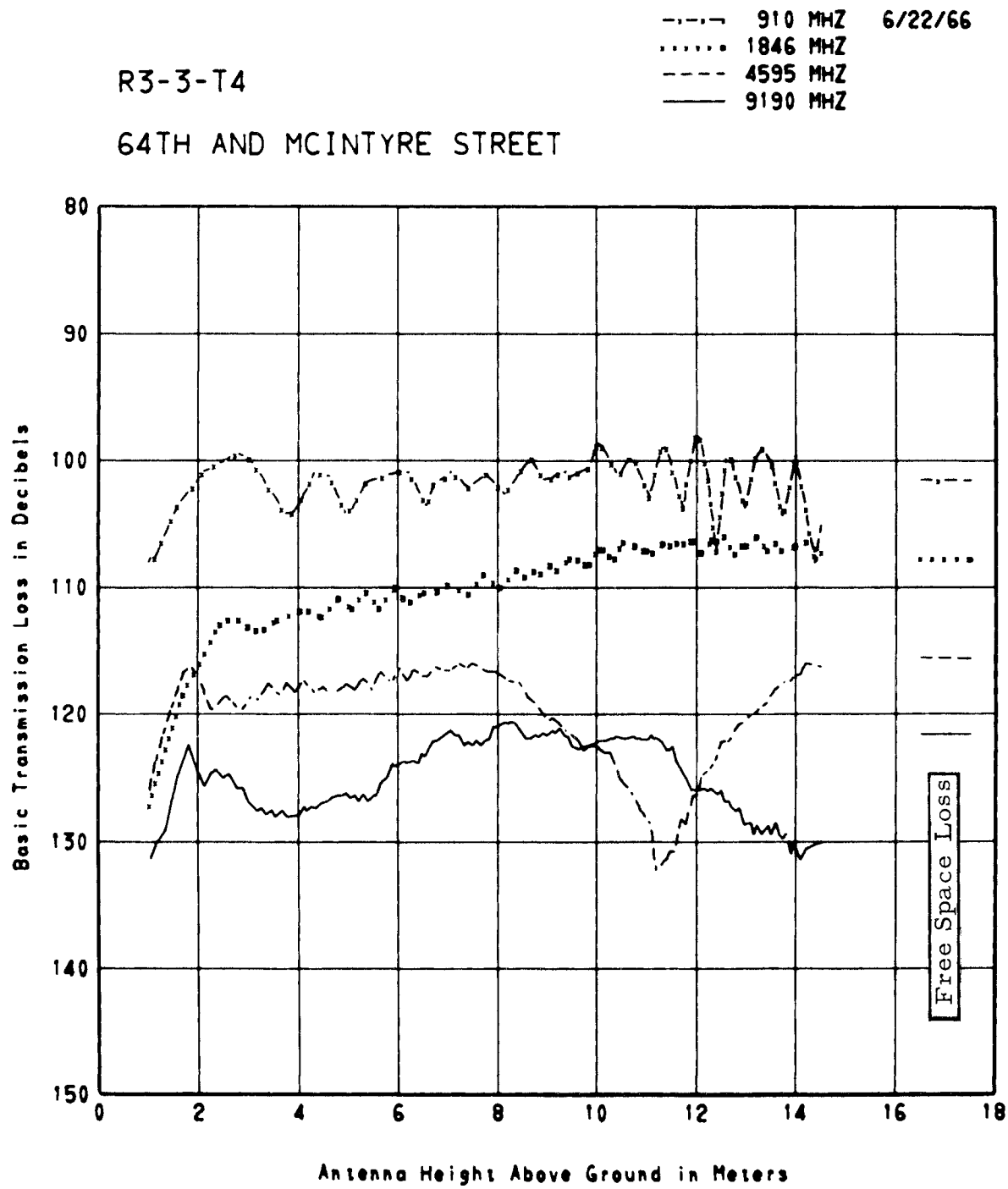
A large tree is in the immediate foreground. A power line and a fence run at 30^{o} to the path. Beyond the tree is an open space for 50 m, then another tree, behind which is a dry lake.

R3-3-T4
64TH AND MCINTYRE S

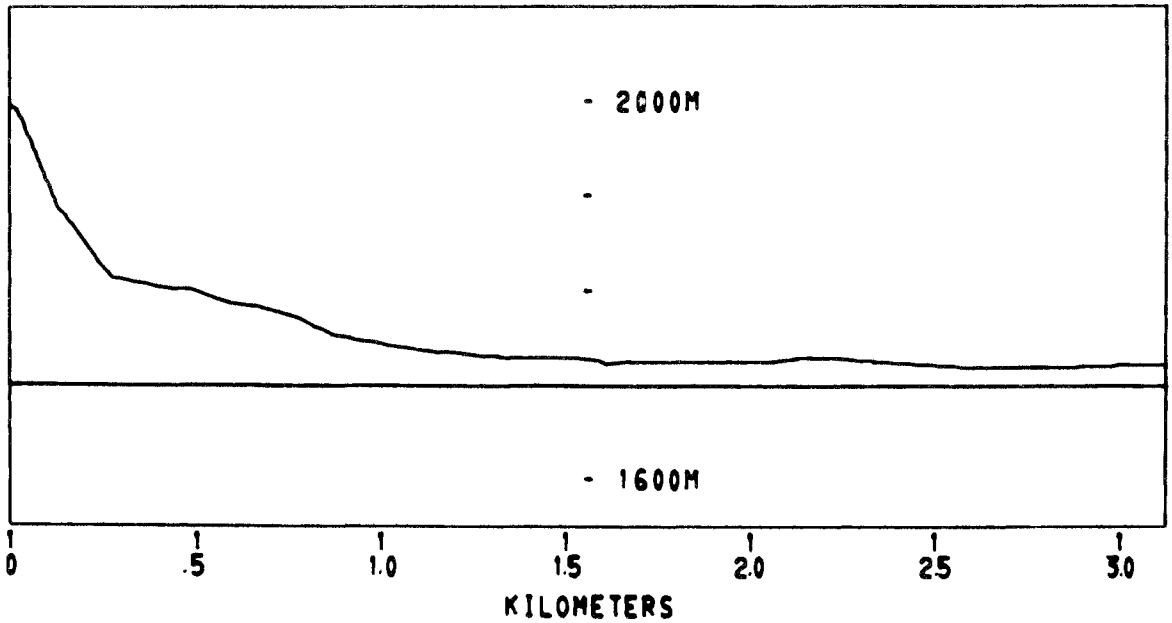


PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is
44° 07' 21" T.


910 MHZ 6/22/66
1846 MHZ
4595 MHZ
9190 MHZ
R3-3-T4
64TH AND MCINTYRE STREET
Basic Transmission Loss in Decibels
80
90
100
110
120
130
140
150
0
2
4
6
8
10
12
14
16
18
Antenna Height Above Ground in Meters
Free Space Loss

RCVR. ELEV.	R3-3-T4	XMTR. ELEV.
1995 M	PATH LENGTH 3.12 km	1722 M



L_b (dB) SHORT TERM SIGNAL VARIABILITY

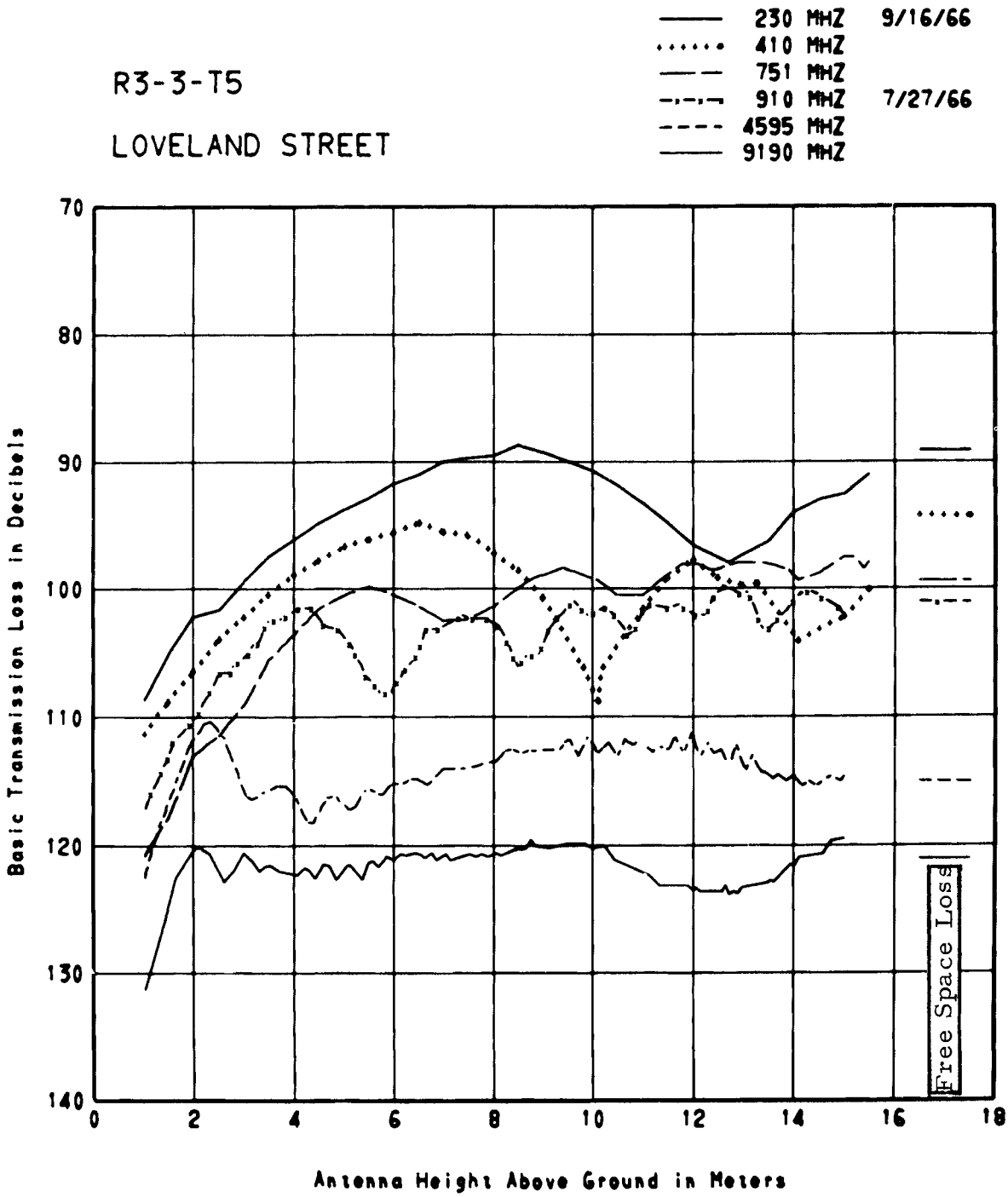
Freq(MHz)	230	410	751	910	1846	4595	9190
					6-22-66 at 7.3 M		
50%				101.8	110.3	117.6	122.0
Δ10%-90%				< 3	< 3	< 3	< 3

This path extends over fields of alfalfa, wheat, and weeds, to a low barn at 0.4 km. There are 10-m trees behind the barn, and more buildings to the left of the path at 2.4 km. There is a 5-wire fence that runs 1 m from the van.

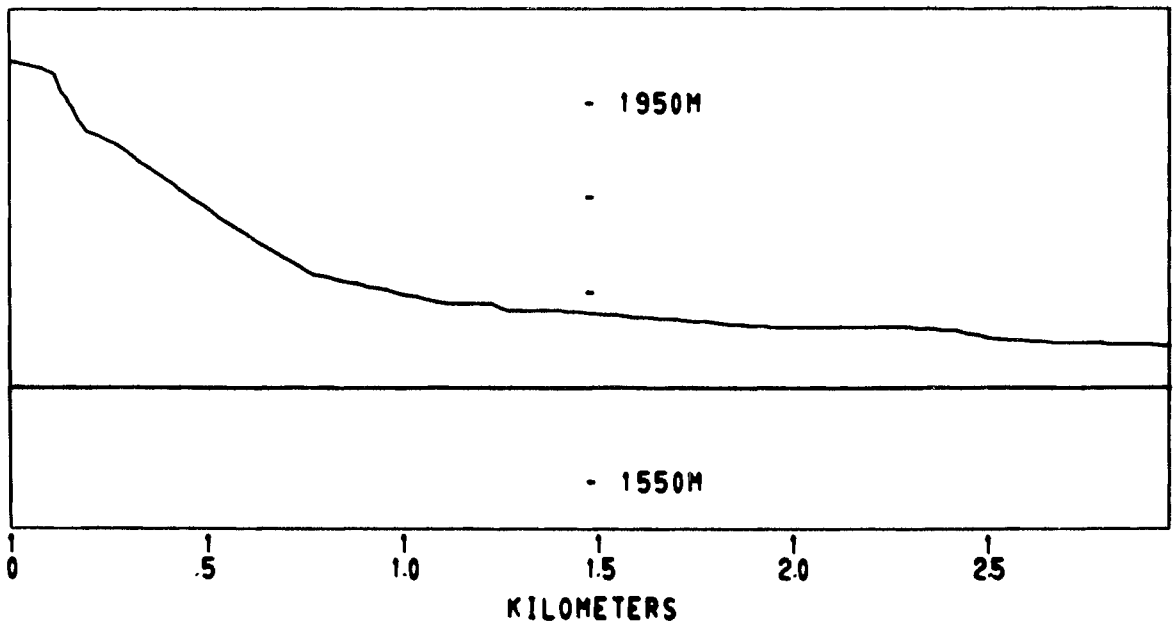
R3-3-T5
LOVELAND STREET

PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is
127° 22' 56" T.


230 MHZ 9/16/66
410 MHZ
751 MHZ
910 MHZ 7/27/66
4595 MHZ
9190 MHZ
R3-3-T5
LOVELAND STREET
Basic Transmission Loss in Decibels
70
80
90
100
110
120
130
140
0
2
4
6
8
10
12
14
16
18
Antenna Height Above Ground in Meters
Free Space Loss

RCVR. ELEV.	R3-3-T5	XMTR. ELEV.
1995 M	PATH LENGTH 2.96 km	1694 M



L_b (dB) SHORT TERM SIGNAL VARIABILITY

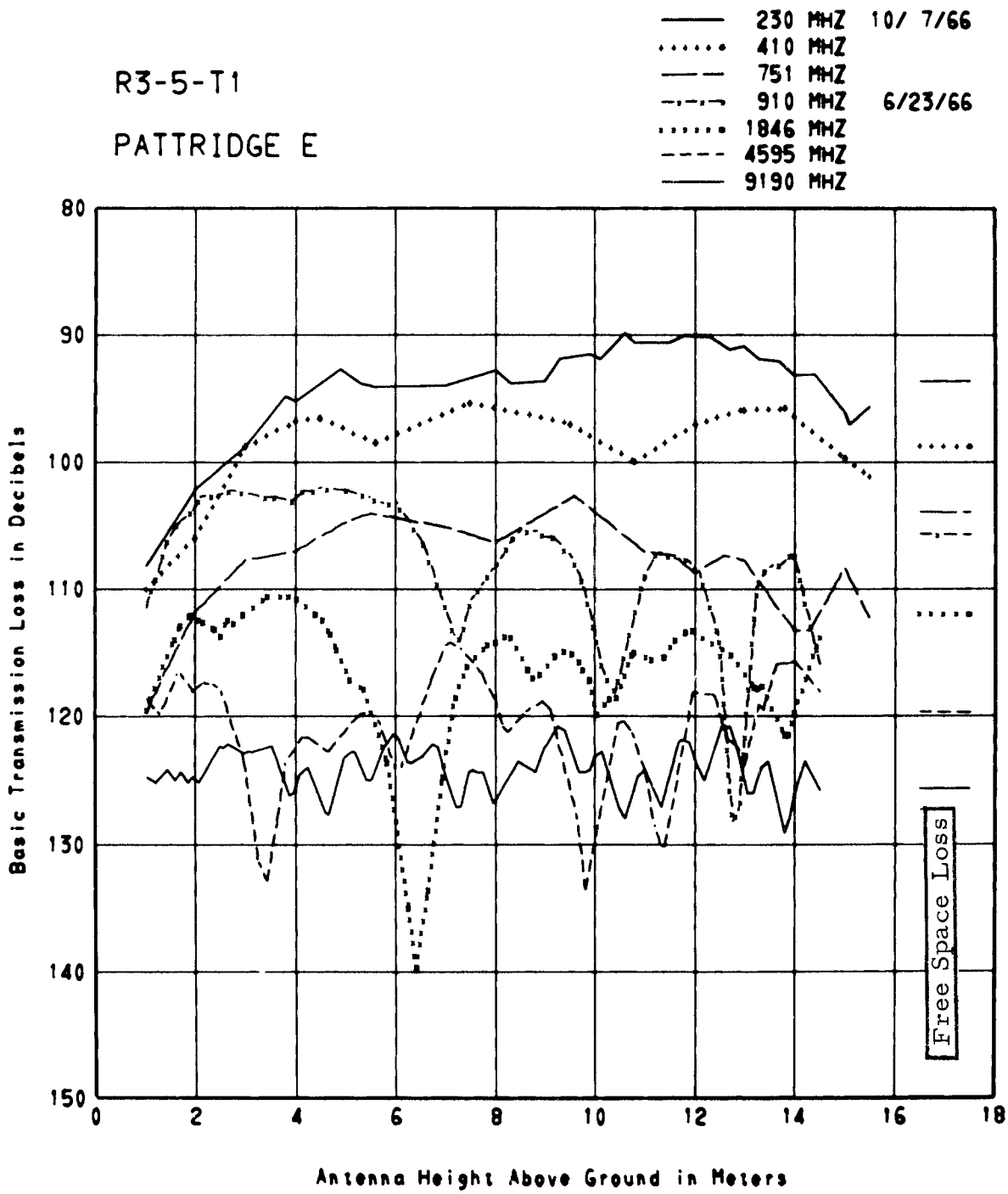
Freq(MHz)	230	410	751	910	1846	4595	9190
	9-16-66 at 15 M				7-27-66 at 7.3 M		
50%	111.1	100.7	97.3	101.8		113.7	120.3
Δ10%-90%	< 3	< 3	< 3	< 3		< 3	< 3

The first 300 m of the path is a field of dry weeds. The path then crosses two streets that have power lines and telephone cables along them, as well as railroad tracks. There is a house with metal buildings beside it, and 15-m high trees behind it.

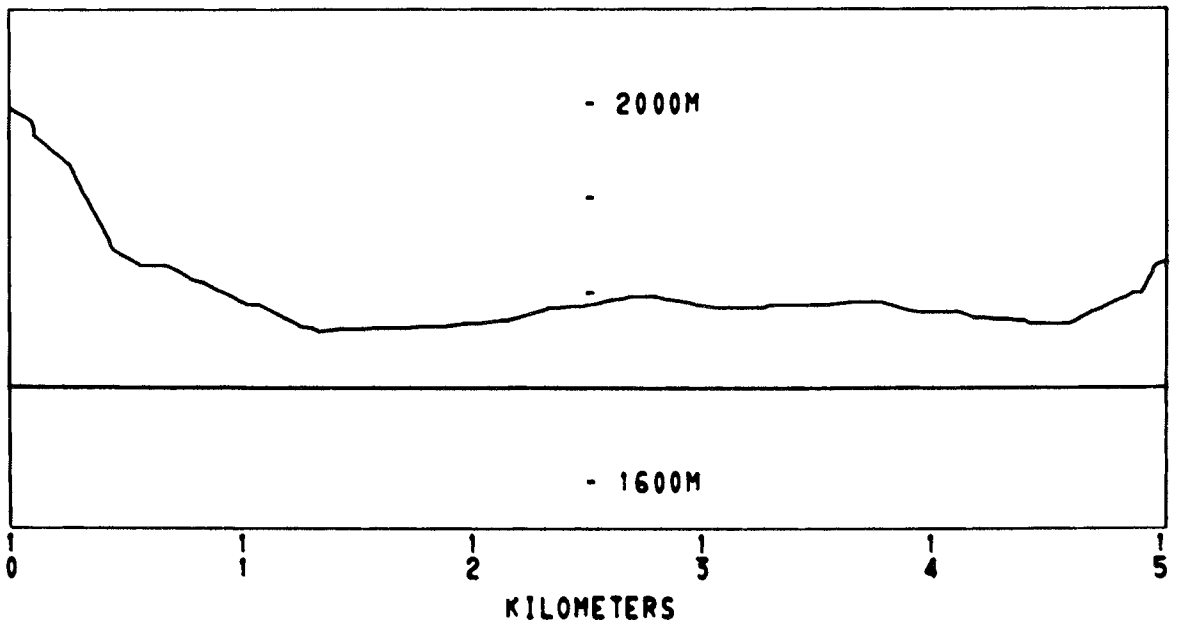
R3-5-T1
PATTRIDGE EAST

PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is
330° 46' 48" T.


230 MHZ 10/ 7/66
410 MHZ
751 MHZ
910 MHZ 6/23/66
1846 MHZ
4595 MHZ
9190 MHZ
R3-5-T1
PATTRIDGE E
Basic Transmission Loss in Decibels
80
90
100
110
120
130
140
150
0
2
4
6
8
10
12
14
16
18
Antenna Height Above Ground in Meters
Free Space Loss

RCVR. ELEV.	R3-5-T1	XMTR. ELEV.
1995 M	PATH LENGTH 5.02 km	1832 M

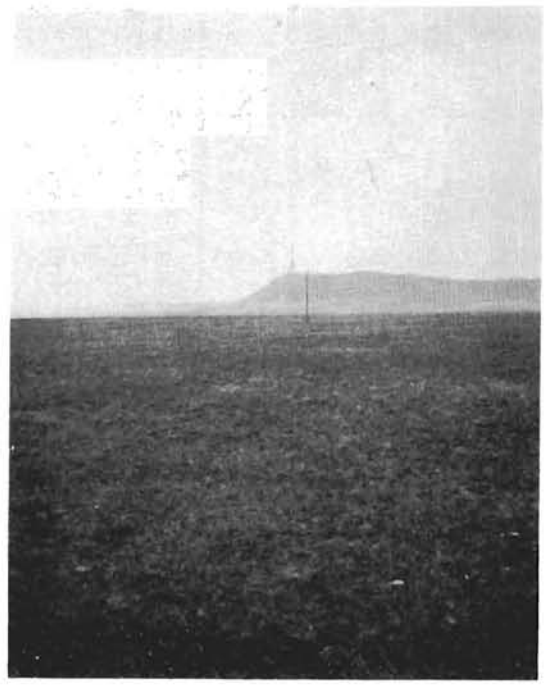


L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
	10-7-66 at 15 M				6-23-66 at 7.3 M		
50%	93.1	100.1	112.5	114.6	116.1	113.4	126.5
Δ10%-90%	< 3	< 3	< 3	< 3	< 3	< 3	< 3

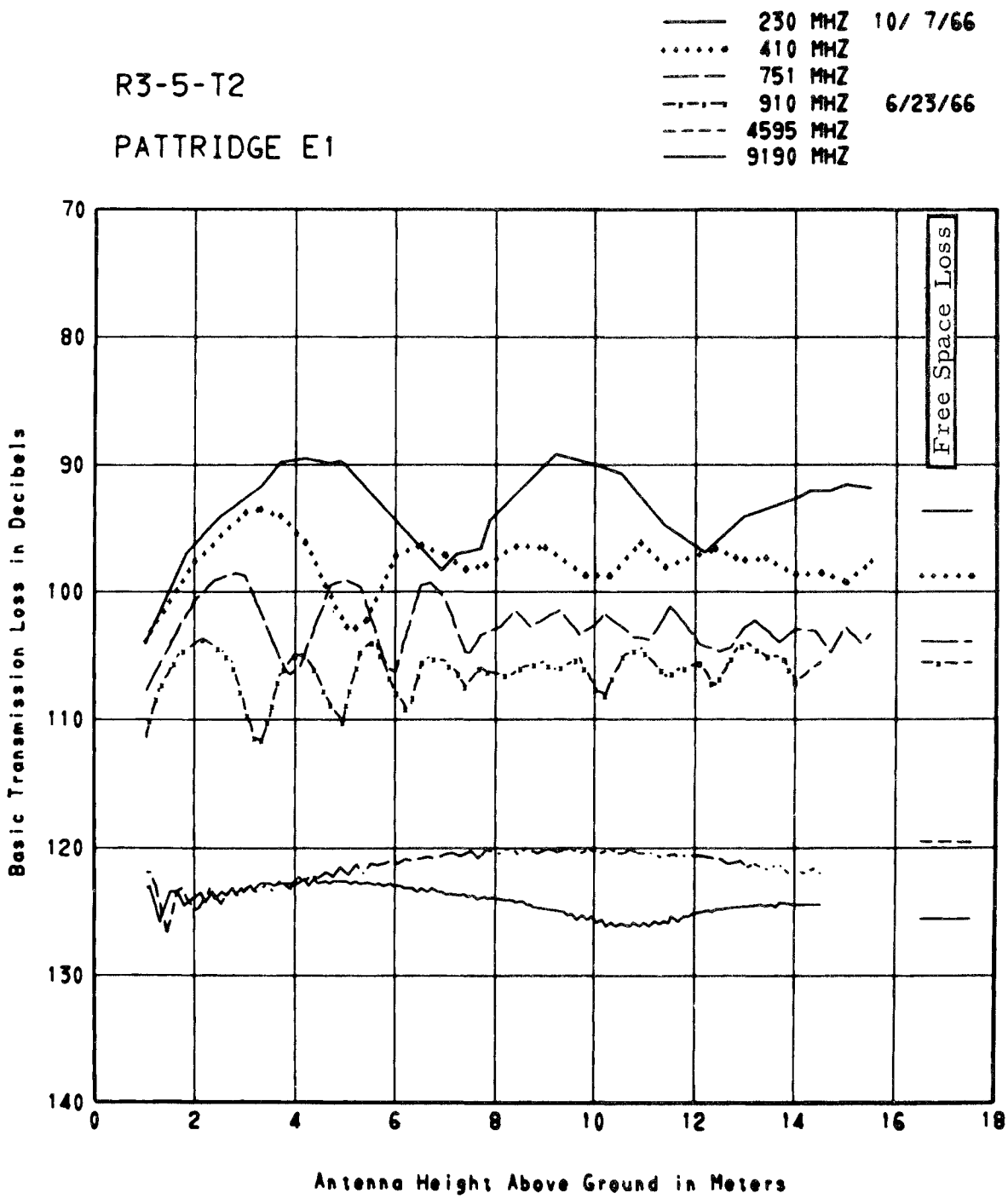
The site is on a bluff, which is 30-m high. The path crosses the highway three times: at 50 m, 0.4 km, and 1.3 km. There is a lake at 1.6 km.

R3-5-T2
PATTRIDGE E1

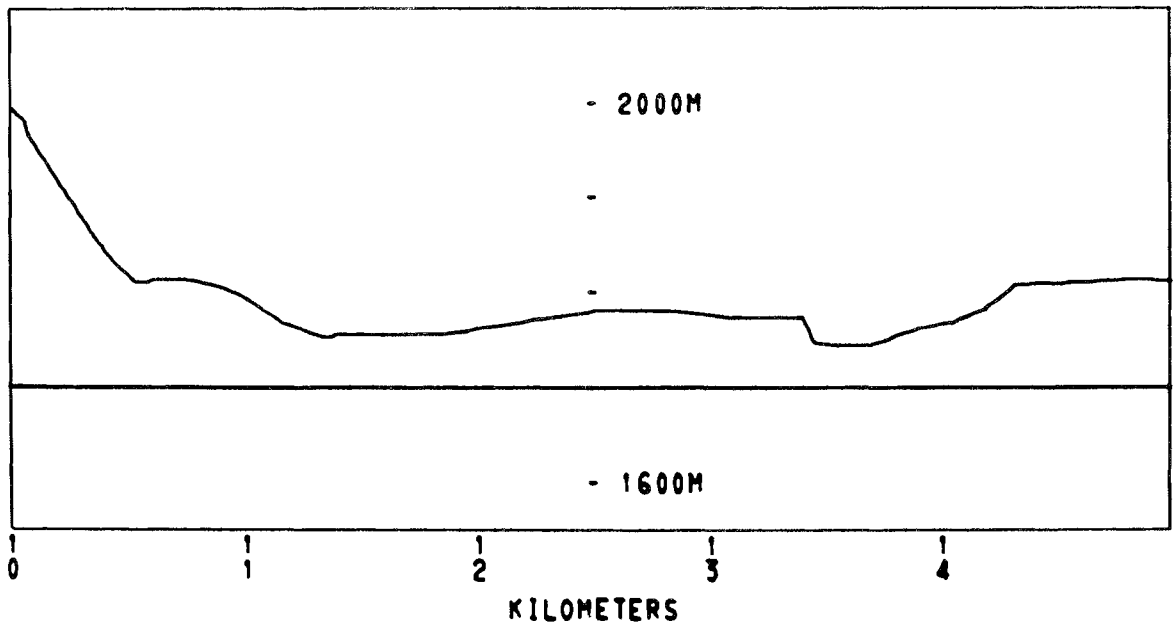


PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is 343° 46' 48" T.


230 MHZ 10/ 7/66
410 MHZ
751 MHZ
910 MHZ 6/23/66
4595 MHZ
9190 MHZ
R3-5-T2
PATTRIDGE E1
Free Space Loss
Basic Transmission Loss in Decibels
70
80
90
100
110
120
130
140
0
2
4
6
8
10
12
14
16
18
Antenna Height Above Ground in Meters

RCVR. ELEV.	R3-5-T2	XMTR. ELEV.
1995 M	PATH LENGTH 4.97 km	1812 M

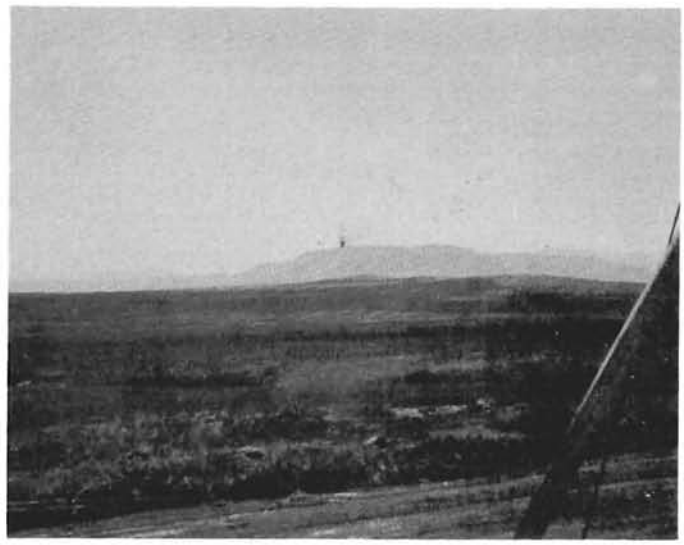


L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
	10-7-66 at 15 M				6-23-66 at 7.3 M		
50%	91.6	96.6		106.9		120.2	123.5
Δ10%-90%	< 3	< 3		< 3		< 3	< 3

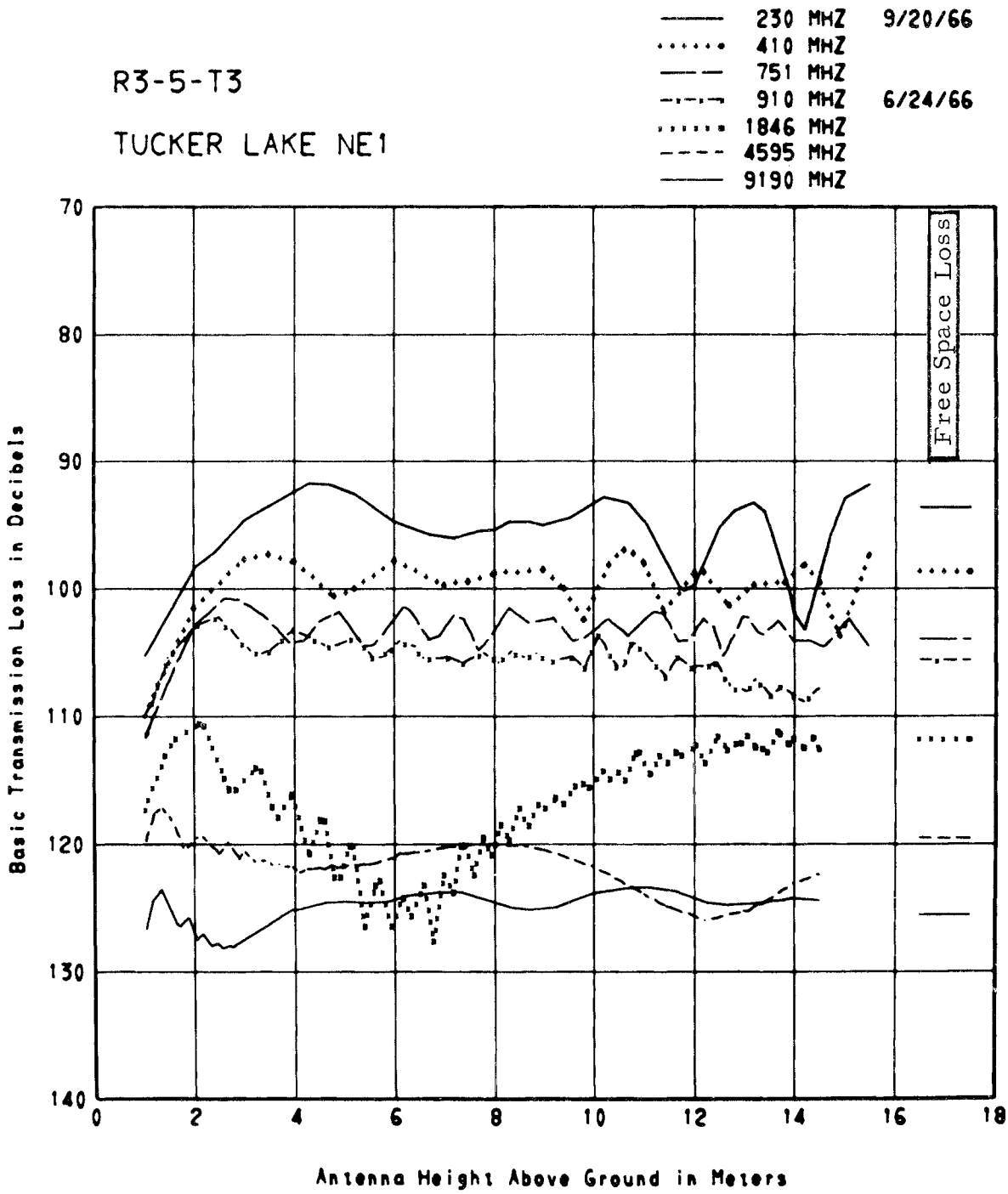
The path extends over wild grass. A power line is nearly at a right angle to the path at 130 m.

R3-5-T3
TUCKER LAKE NE1

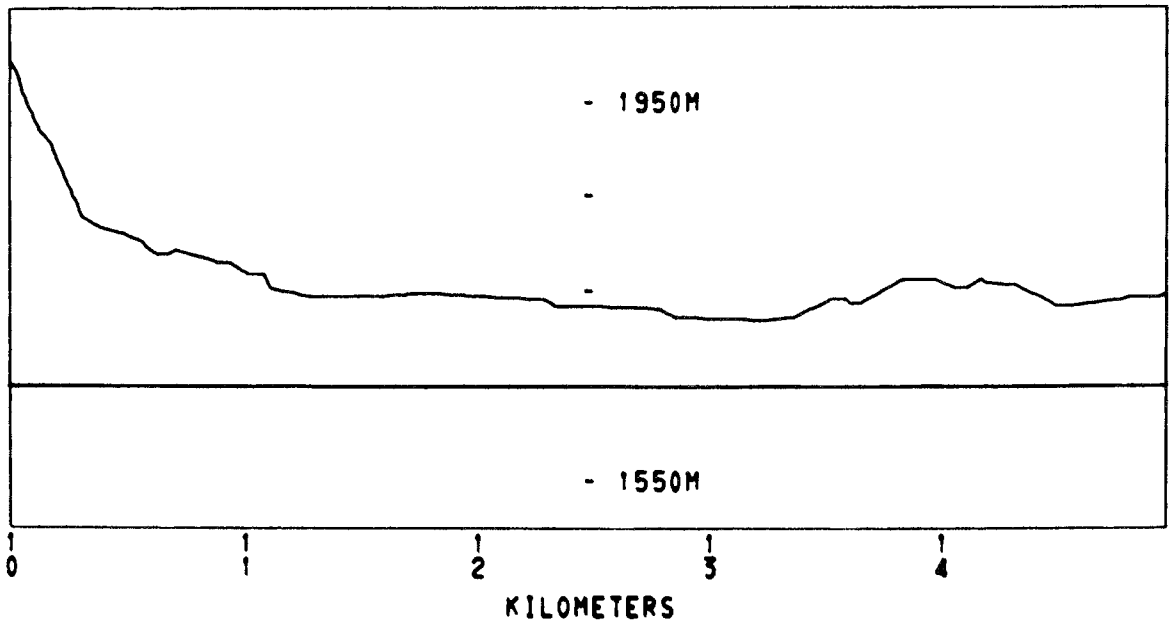


PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is
08° 36' 04" T.


230 MHZ 9/20/66
410 MHZ
751 MHZ
910 MHZ 6/24/66
1846 MHZ
4595 MHZ
9190 MHZ
R3-5-T3
TUCKER LAKE NE1
Free Space Loss
Basic Transmission Loss in Decibels
70
80
90
100
110
120
130
140
0
2
4
6
8
10
12
14
16
18
Antenna Height Above Ground in Meters

RCVR. ELEV.	R3-5-T3	XMTR. ELEV.
1995 M	PATH LENGTH 4.96 km	1746 M

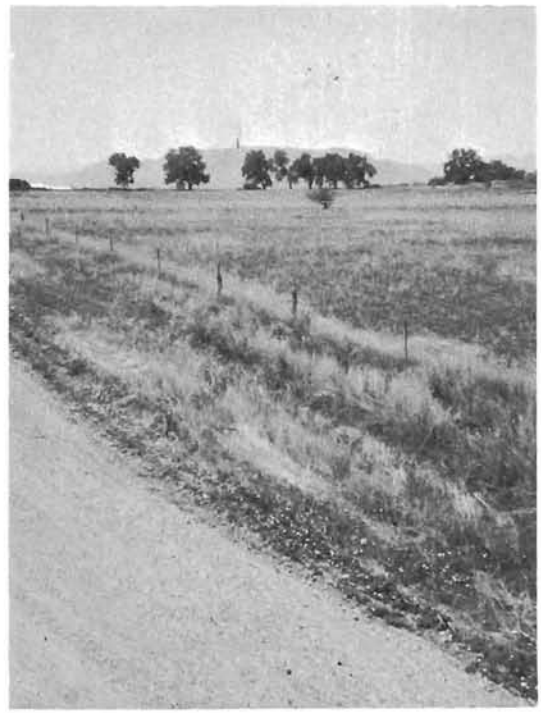


L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
	9-20-66 at 15 M				6-24-66 at 7.3 M		
50%	93.3	98.1	104.4	106.2	118.7	119.8	123.7
Δ10%-90%	< 3	< 3	< 3	< 3	< 3	< 3	< 3

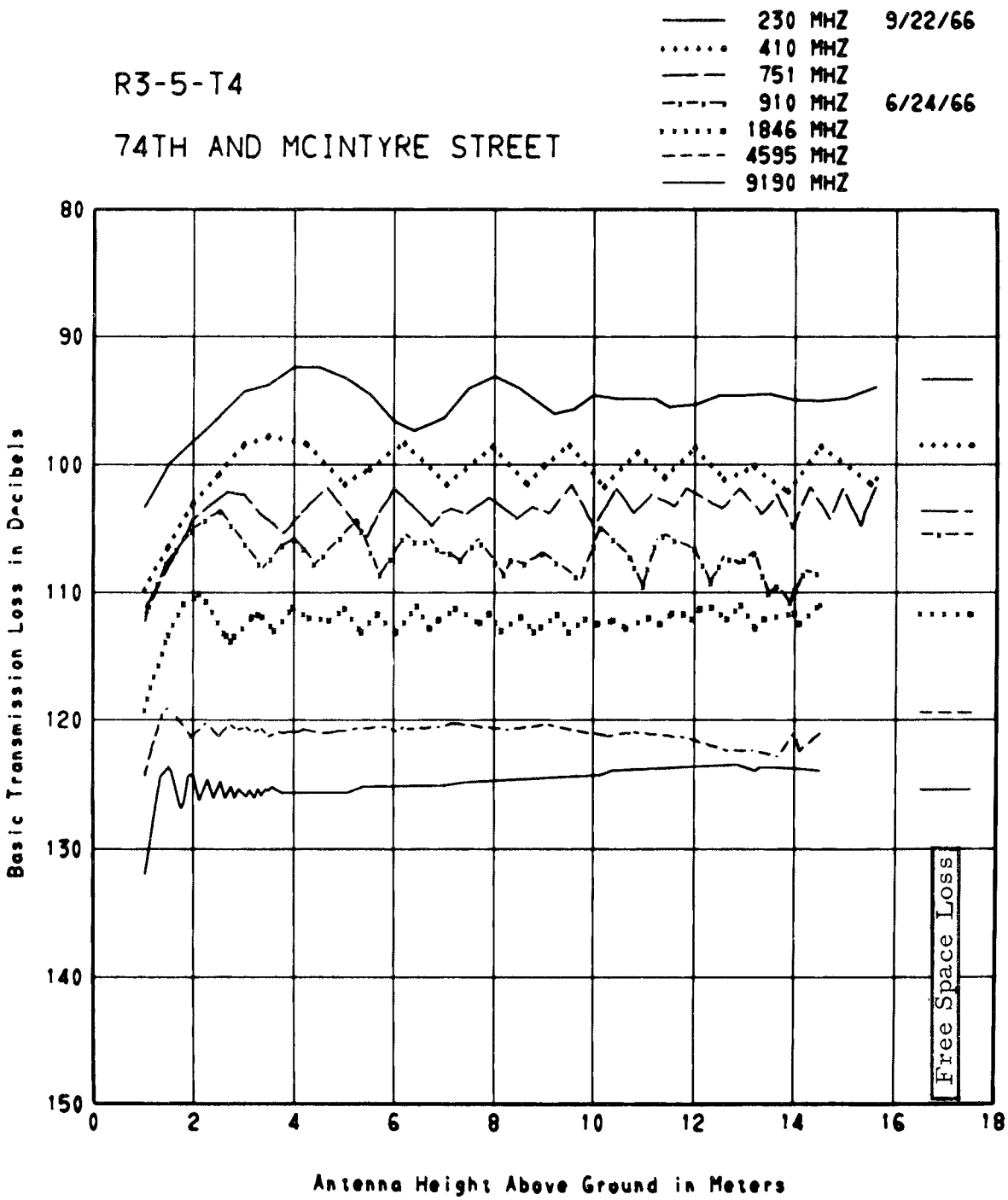
The ground slopes downward in the immediate foreground of the path. The ground covering is wild grass and weeds. The path is crossed by an irrigation ditch at 25 m, and by a power line and a one-wire electric fence at 28 m.

R3-5-T4
74TH AND MCINTYRE

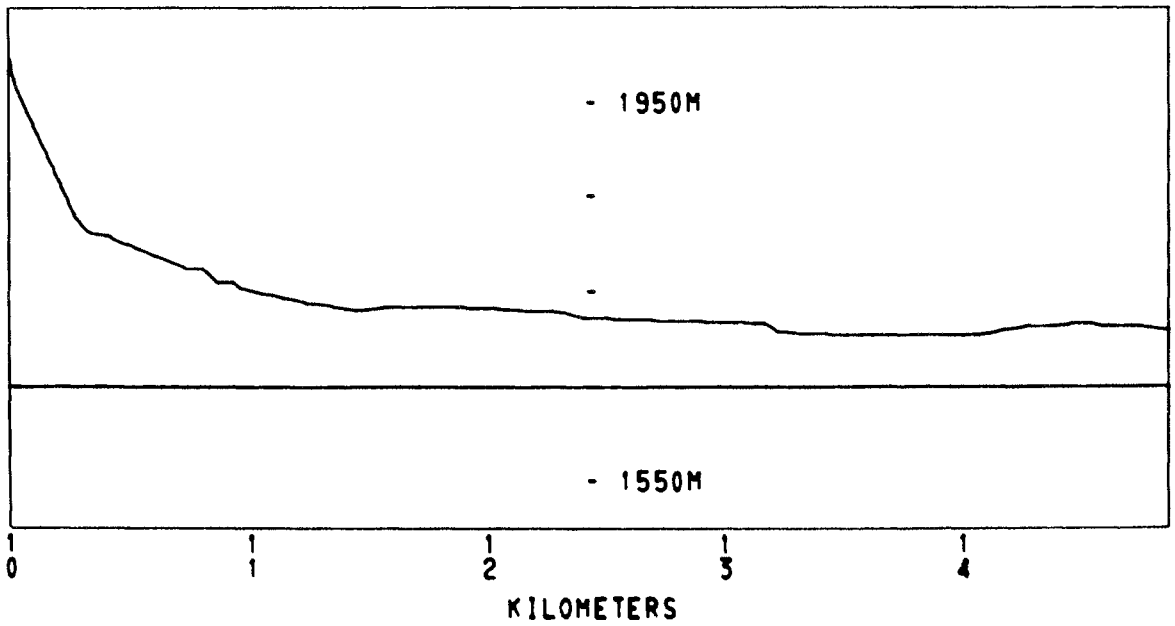


PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is
27° 09' 32" T.


230 MHZ 9/22/66
410 MHZ
751 MHZ
910 MHZ 6/24/66
1846 MHZ
4595 MHZ
9190 MHZ
R3-5-T4
74TH AND MCINTYRE STREET
Basic Transmission Loss in Decibels
80
90
100
110
120
130
140
150
0
2
4
6
8
10
12
14
16
18
Antenna Height Above Ground in Meters
Free Space Loss

RCVR. ELEV.	R3-5-T4	XMTR. ELEV.
1995 M	PATH LENGTH 4.86 km	1708 M



L_b (dB) SHORT TERM SIGNAL VARIABILITY

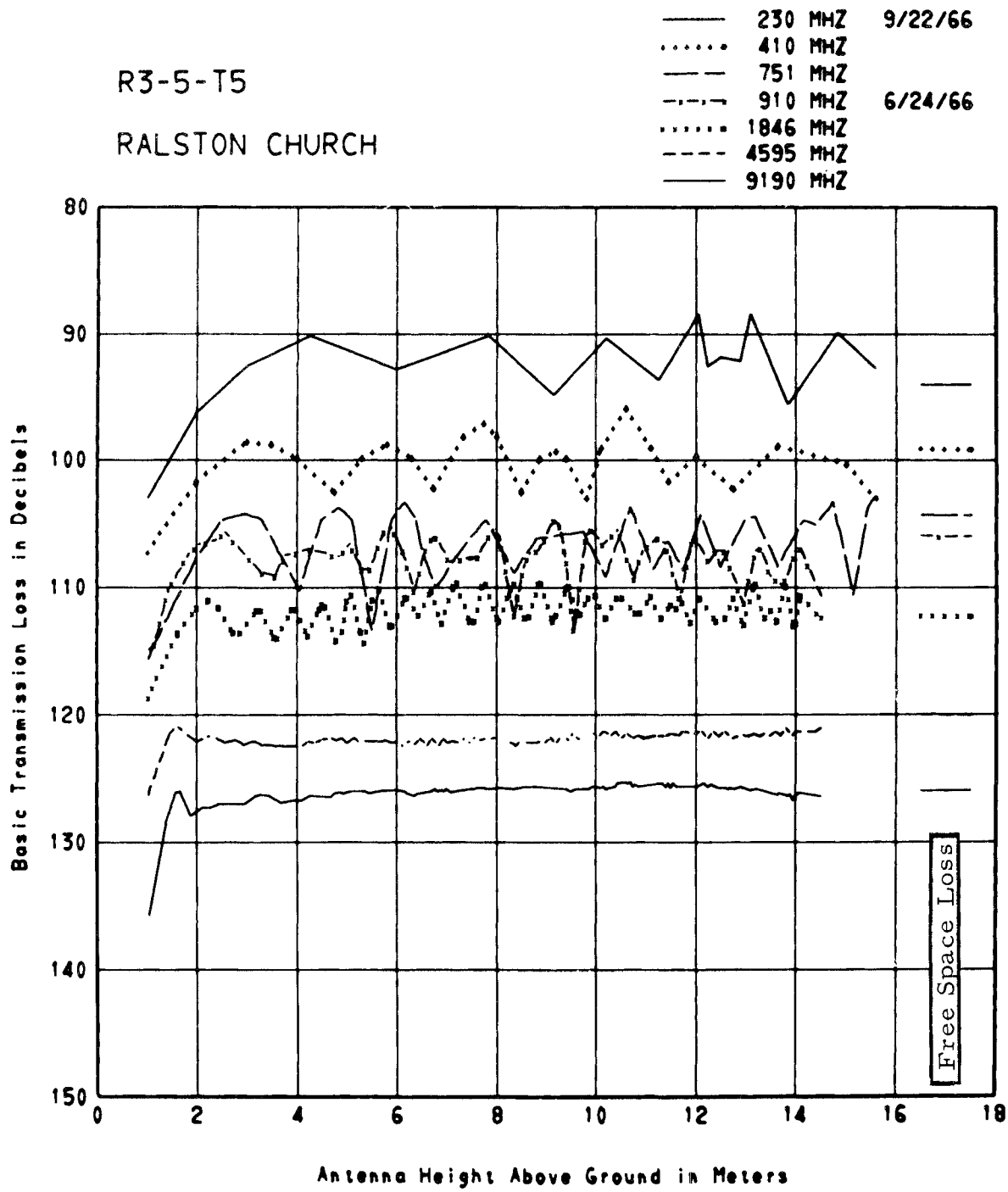
Freq(MHz)	230	410	751	910	1846	4595	9190
	9-22-66 at 15 M				6-24-66 at 7.3 M		
50%	93.4	99.8	102.9	109.2	112.6	122.2	123.9
Δ10%-90%	< 3	< 3	< 3	< 3	< 3	< 3	< 3

The path extends over ground covered by wild grass and weeds. A fence and a telephone line cross the path at 25 m. Trees about 20-m high are on the path at 0.4 km.

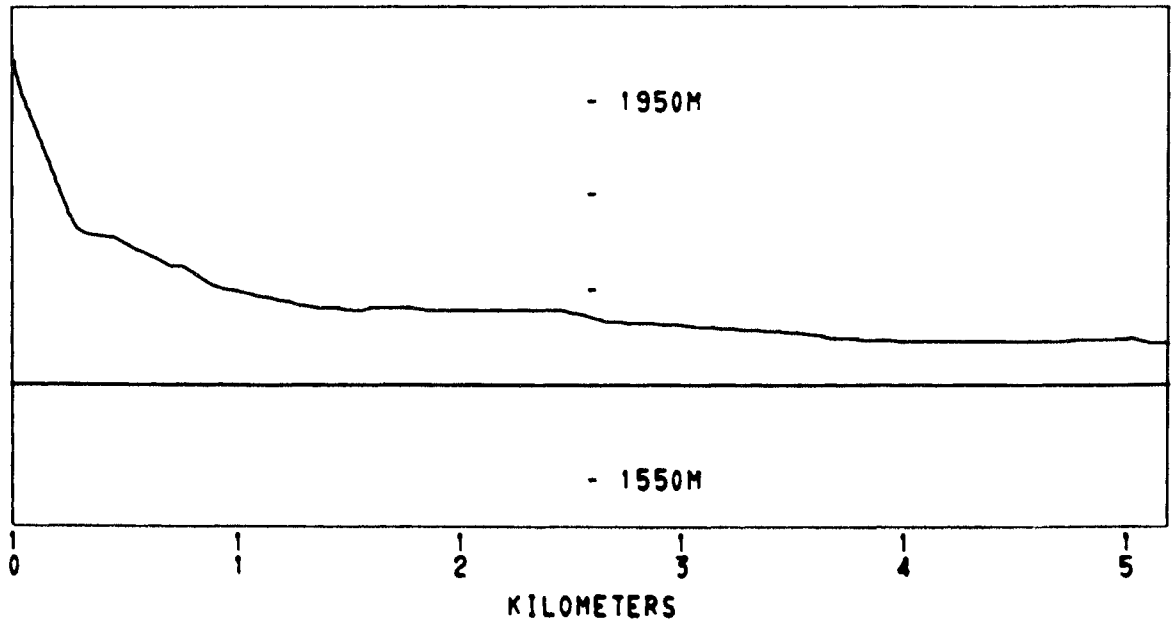
R3-5-T5
RALSTON CHURCH

PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is
35° 09' 09" T.


230 MHZ 9/22/66
410 MHZ
751 MHZ
910 MHZ 6/24/66
1846 MHZ
4595 MHZ
9190 MHZ
R3-5-T5
RALSTON CHURCH
80
90
100
110
120
130
140
150
0
2
4
6
8
10
12
14
16
18
Basic Transmission Loss in Decibels
Antenna Height Above Ground in Meters
Free Space Loss

RCVR. ELEV.	R3-5-T5	XMTR. ELEV.
1995 M	PATH LENGTH 5.18 km	1695 M



L_b (dB) SHORT TERM SIGNAL VARIABILITY

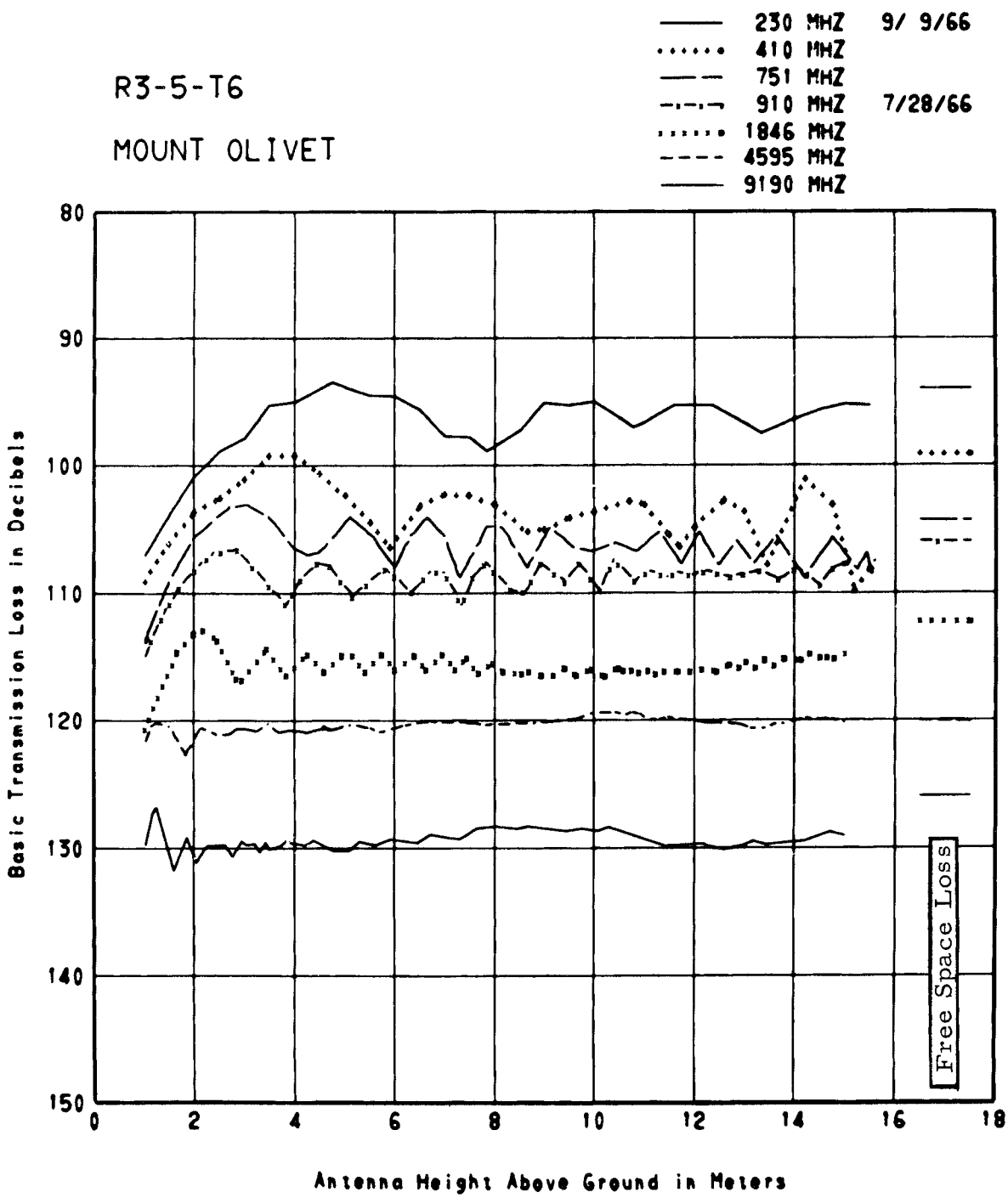
Freq(MHz)	230	410	751	910	1846	4595	9190
	9-22-66 at 15 M				6-24-66 at 7.3 M		
50%	92.8	101.5	103.4	108.5	112.2	122.0	125.0
Δ10%-90%	< 3	< 3	< 3	< 3	< 3	< 3	< 3

The path extends mostly over wild grasses. There is an irrigation ditch with a small tree in the ditch at 10 m. There are orchard trees, 6-m high, at 125 m. A power line crosses the path at 0.4 km. A fence and a telephone line run 1 m from the van, but are 1 m below the antenna.

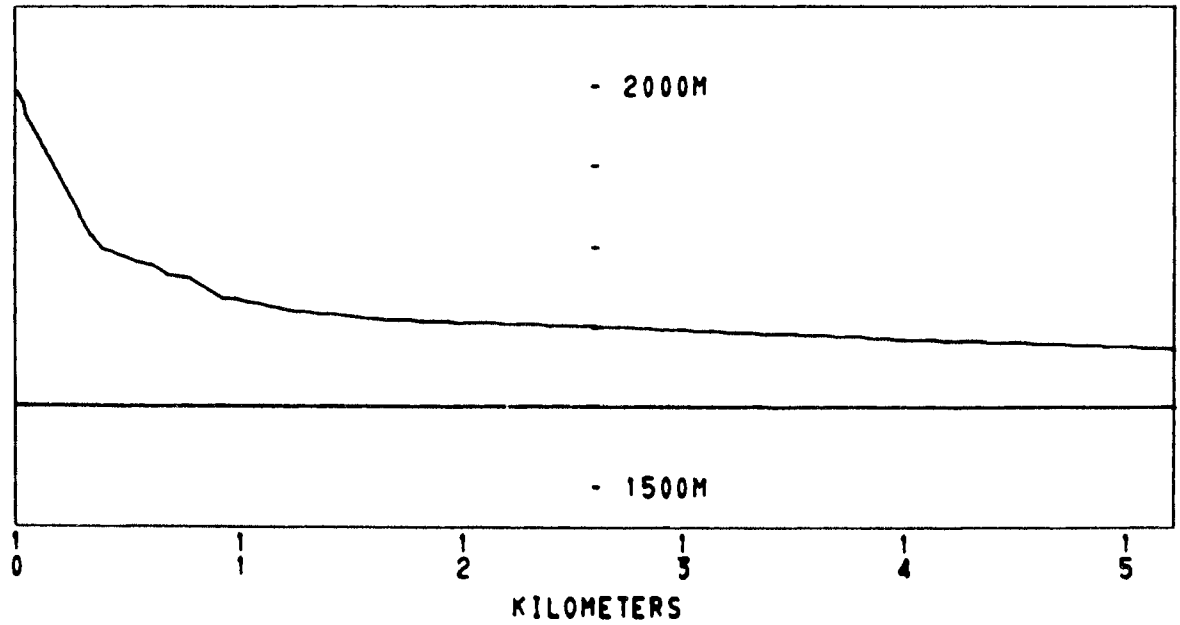
R3-5-T6
MOUNT OLIVET

PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is
96° 14' 56" T.


230 MHZ 9/ 9/66
410 MHZ
751 MHZ
910 MHZ 7/28/66
1846 MHZ
4595 MHZ
9190 MHZ
R3-5-T6
MOUNT OLIVET
Basic Transmission Loss in Decibels
80
90
100
110
120
130
140
150
0
2
4
6
8
10
12
14
16
18
Antenna Height Above Ground in Meters
Free Space Loss

RCVR. ELEV.	R3-5-T6	XMTR. ELEV.
1995 M	PATH LENGTH 5.21 km	1673 M



L_b (dB) SHORT TERM VARIABILITY

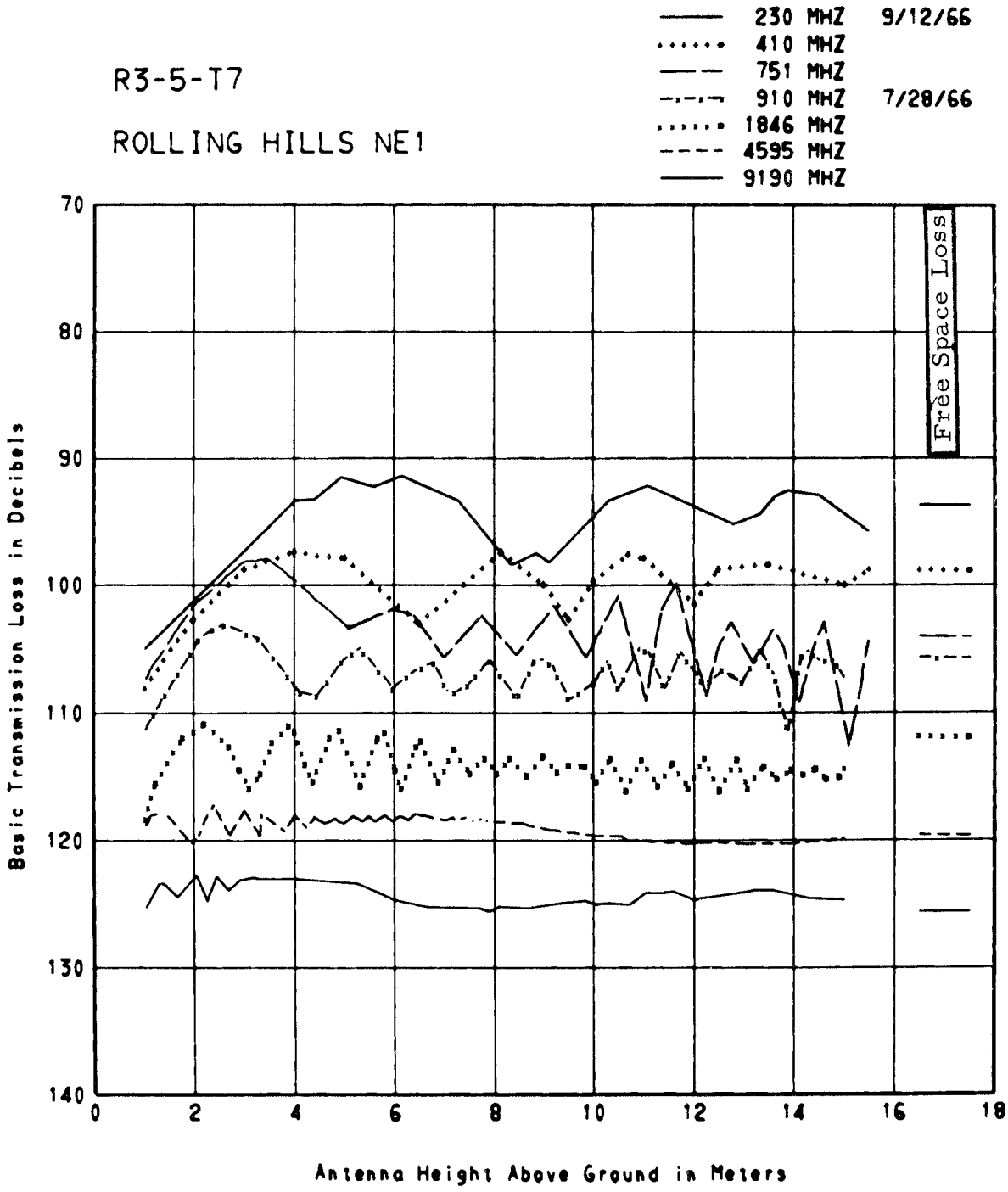
Freq(MHz)	230	410	751	910	1846	4595	9190
	9-9-66 at 15 M				7-28-66 at 7.3 M		
50%	96.7	104.5	105.8	109.9	114.8	120.0	130.1
Δ10%-90%	< 3	< 3	< 3	< 3	< 3	< 3	< 3

The site is located between railroad tracks and a road. There is an olive hedge, 3-m high, which is 25 m along the path, with 7-m high trees behind the hedge. There are large, 20-m high trees at 400 m.

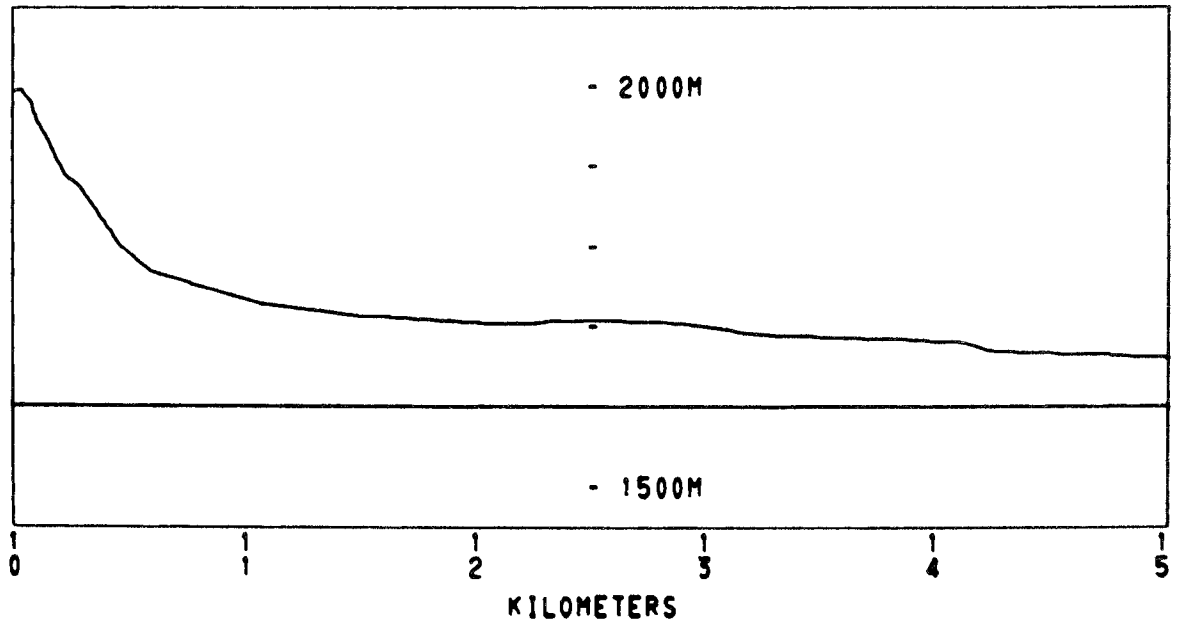
R3-5-T7
ROLLING HILLS NE1

PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is
115° 31' 00" T.


230 MHZ 9/12/66
410 MHZ
751 MHZ
910 MHZ 7/28/66
1846 MHZ
4595 MHZ
9190 MHZ
R3-5-T7
ROLLING HILLS NE1
Free Space Loss
Basic Transmission Loss in Decibels
70
80
90
100
110
120
130
140
0
2
4
6
8
10
12
14
16
18
Antenna Height Above Ground in Meters

RCVR. ELEV.	R3-5-T7	XMTR. ELEV.
1995 M	PATH LENGTH 5.02 km	1661 M



L_b (dB) SHORT TERM VARIABILITY

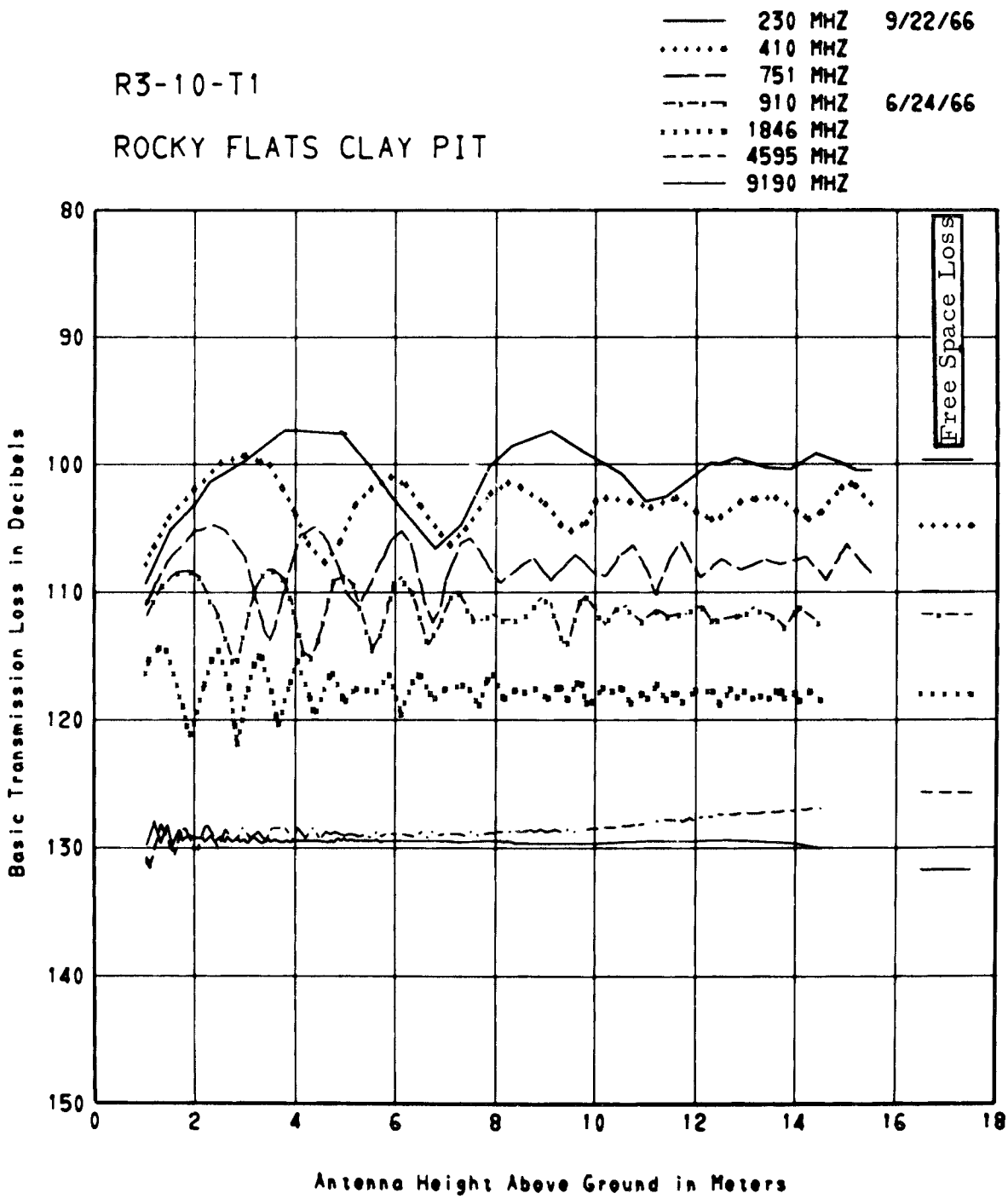
Freq(MHz)	230	410	751	910	1846	4595	9190
	9-9-66 at 15 M				7-28-66 at 7.3 M		
50%	95.2	114.9	96.6	108.8	113.9	118.1	124.6
Δ10%-90%	< 3	< 3	< 3	< 3	< 3	< 3	< 3

The immediate foreground of the path is covered with asphalt and piles of asphalt. Clear Creek is 50 m away. The next 200 m are covered with 18-m high trees.

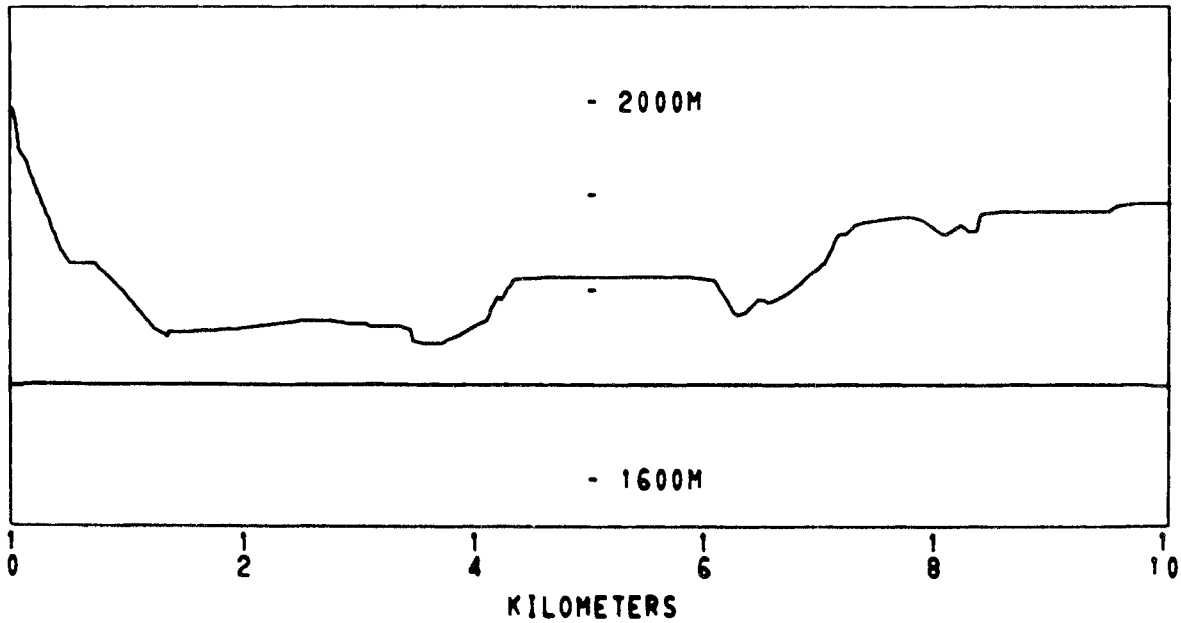
R3-10-T1
ROCKY FLATS CLAY PIT

PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is 342° 42' 12" T.


R3-10-T1
ROCKY FLATS CLAY PIT
230 MHZ 9/22/66
410 MHZ
751 MHZ
910 MHZ 6/24/66
1846 MHZ
4595 MHZ
9190 MHZ
Free Space Loss
Basic Transmission Loss in Decibels
80
90
100
110
120
130
140
150
0
2
4
6
8
10
12
14
16
18
Antenna Height Above Ground in Meters

RCVR. ELEV.	R3-10-T1	XMTR. ELEV.
1995 M	PATH LENGTH 10.04 km	1893 M



L_b (dB) SHORT TERM SIGNAL VARIABILITY

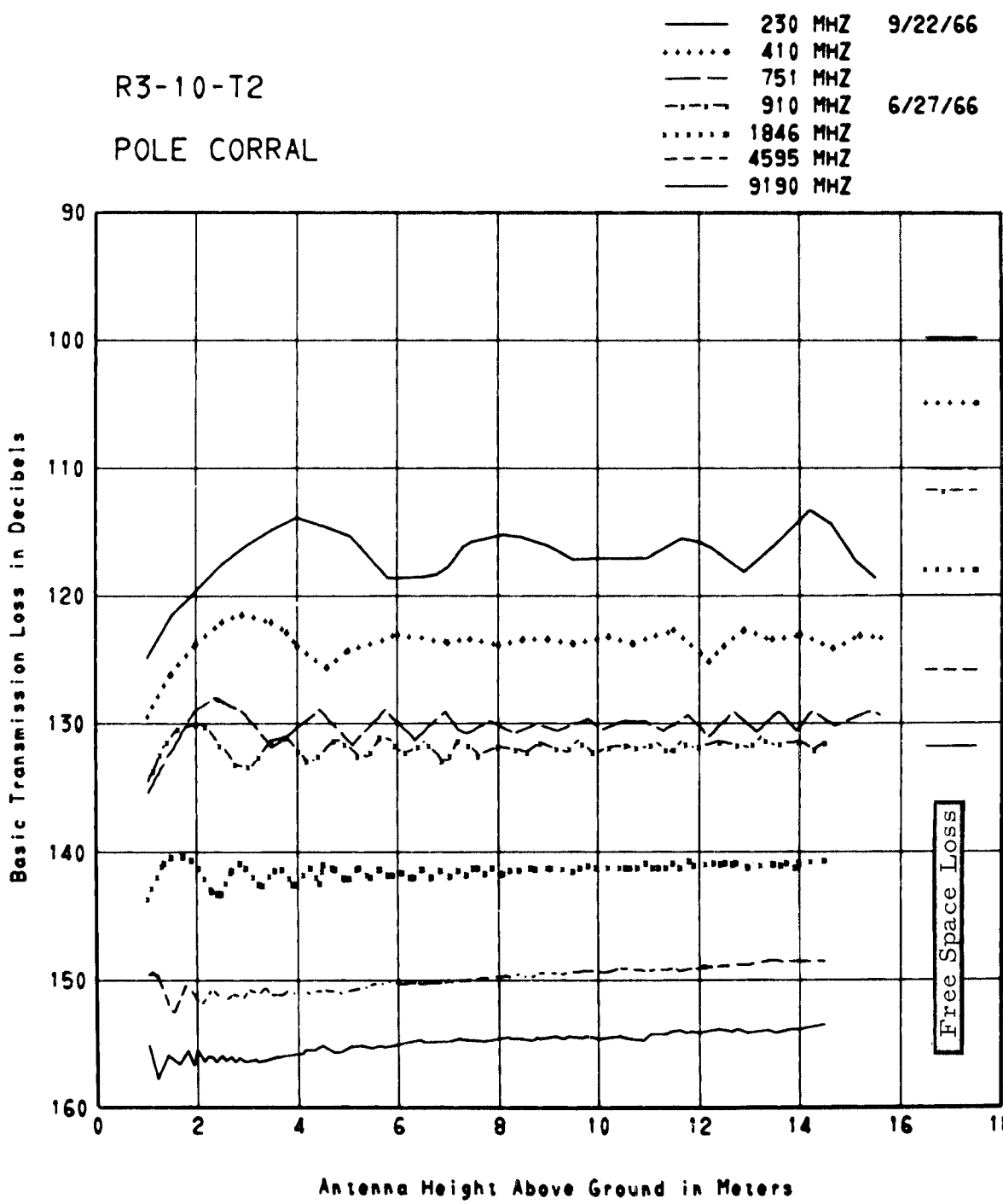
Freq(MHz)	230	410	751	910	1846	4595	9190
	9-22-66 at 15 M				6-24-66 at 7.3 M		
50%	100.1	102.6	109.6	109.2	117.1	128.2	129.1
Δ10%-90%	< 3	< 3	< 3	< 3	< 3	< 3	< 3

The ground covering on this path is wild grass. There are two small trees on either side of the path on the 3-m high bank of an irrigation ditch which crosses the path at 0.4 km. Power lines cross the path at 0.8 km.

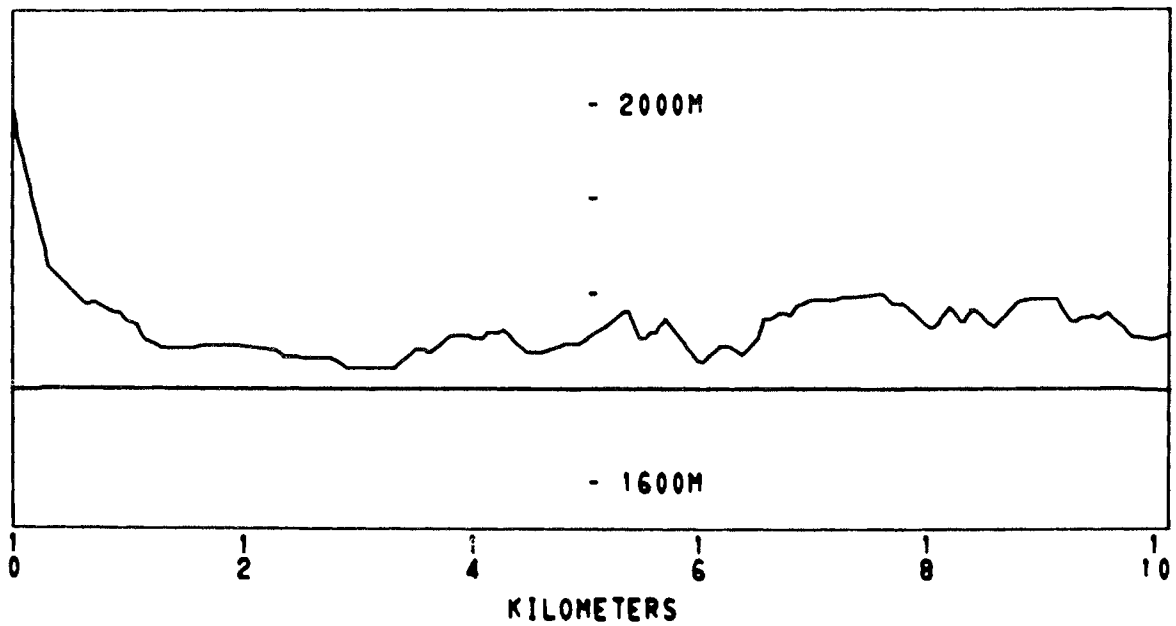
R3-10-T2
POLE CORRAL

PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is
07° 54' 23" T.


230 MHZ 9/22/66
410 MHZ
751 MHZ
910 MHZ 6/27/66
1846 MHZ
4595 MHZ
9190 MHZ
R3-10-T2
POLE CORRAL
Basic Transmission Loss in Decibels
90
100
110
120
130
140
150
160
0
2
4
6
8
10
12
14
16
18
Antenna Height Above Ground in Meters
Free Space Loss

RCVR. ELEV.	R3-10-T2	XMTR. ELEV.
1995 M	PATH LENGTH 10.11 km	1757 M



L_b (dB) SHORT TERM SIGNAL VARIABILITY

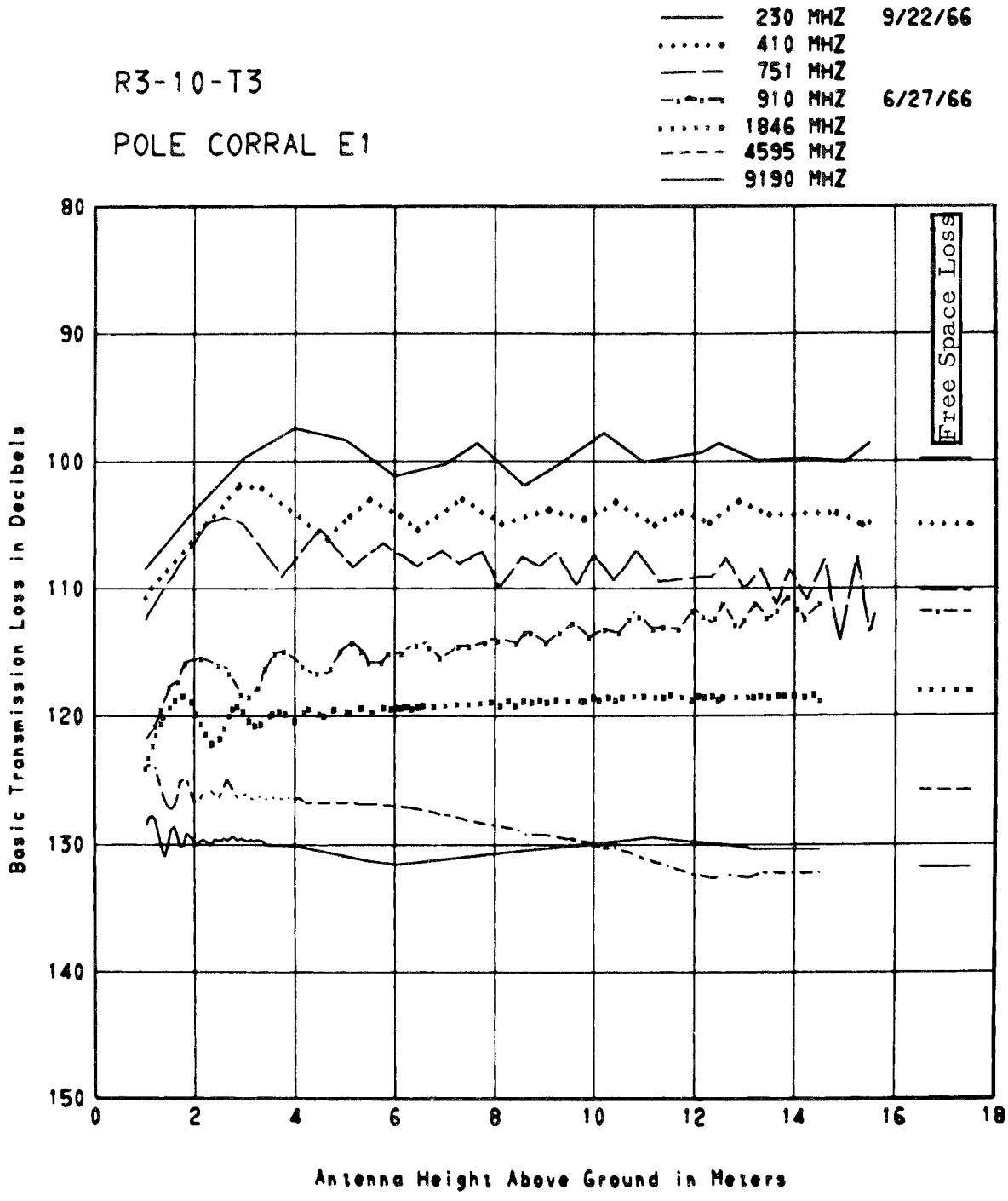
Freq(MHz)	230	410	751	910	1846	4595	9190
	9-22-66 at 15 M				6-27-66 at 15 M		
50%	119.0	124.0	129.7	131.5	139.6	148.8	153.0
Δ10%-90%	< 3	< 3	< 3	< 3	< 3	< 3	< 3
					6-27-66 at 7.3 M		
50%				131.7	141.2	149.4	154.8
Δ10%-90%				< 3	< 3	< 3	< 3
					6-27-66 at 1 M		
50%				135.5	143.3	150.1	153.8
Δ10%-90%				< 3	< 3	< 3	< 3

In the foreground of the path, there are 300 m of wild grass, followed by 300 m of wheat fields. Fences cross the path at 70 m and 200 m.

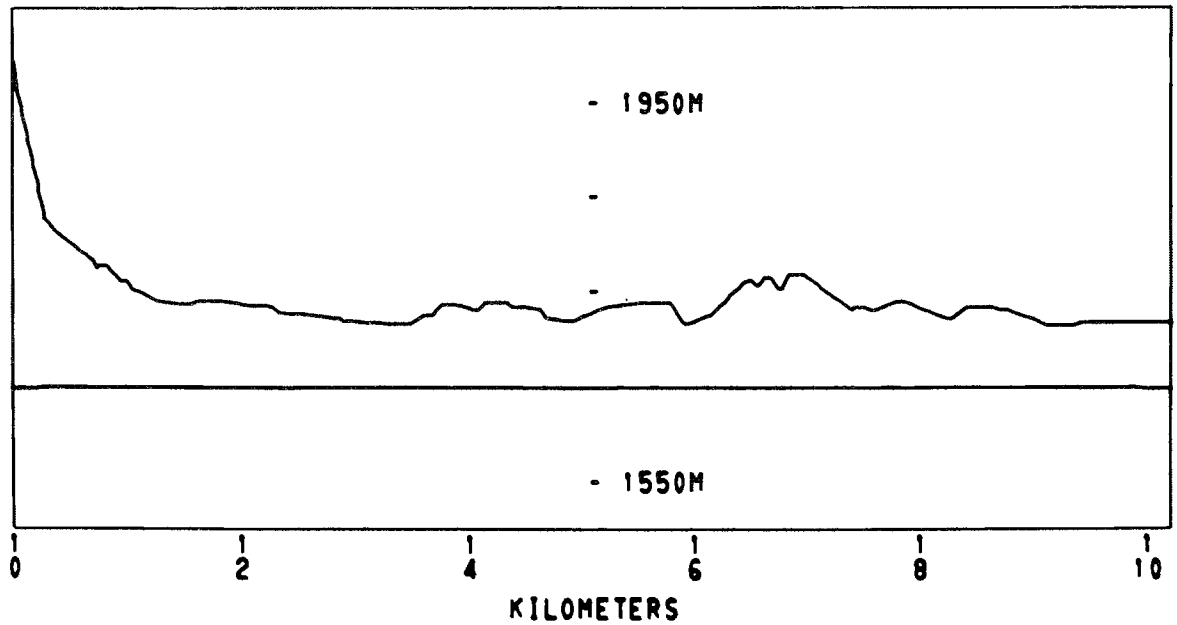
R3-10-T3
POLE CORRAL E1

PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is 16° 25' 18" T.


R3-10-T3
POLE CORRAL E1
230 MHZ 9/22/66
410 MHZ
751 MHZ
910 MHZ 6/27/66
1846 MHZ
4595 MHZ
9190 MHZ
Free Space Loss
Basic Transmission Loss in Decibels
80
90
100
110
120
130
140
150
0
2
4
6
8
10
12
14
16
18
Antenna Height Above Ground in Meters

RCVR. ELEV.	R3-10-T3	XMTR. ELEV.
1995 M	PATH LENGTH 10.20 km	1717 M



L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
	9-22-66 at 15 M				6-27-66 at 7.3 M		
50%	97.6	102.8	110.1	114.0	118.7	127.2	131.8
Δ10%-90%	< 3	< 3	< 3	< 3	< 3	< 3	< 3

The terrain of the path is smooth, covered by a wheat field for the first 0.4 km and then plowed fields for 2.4 km. A fence crosses the path at 10 m, a highway at 2.4 km, and a railroad track at 2.8 km.

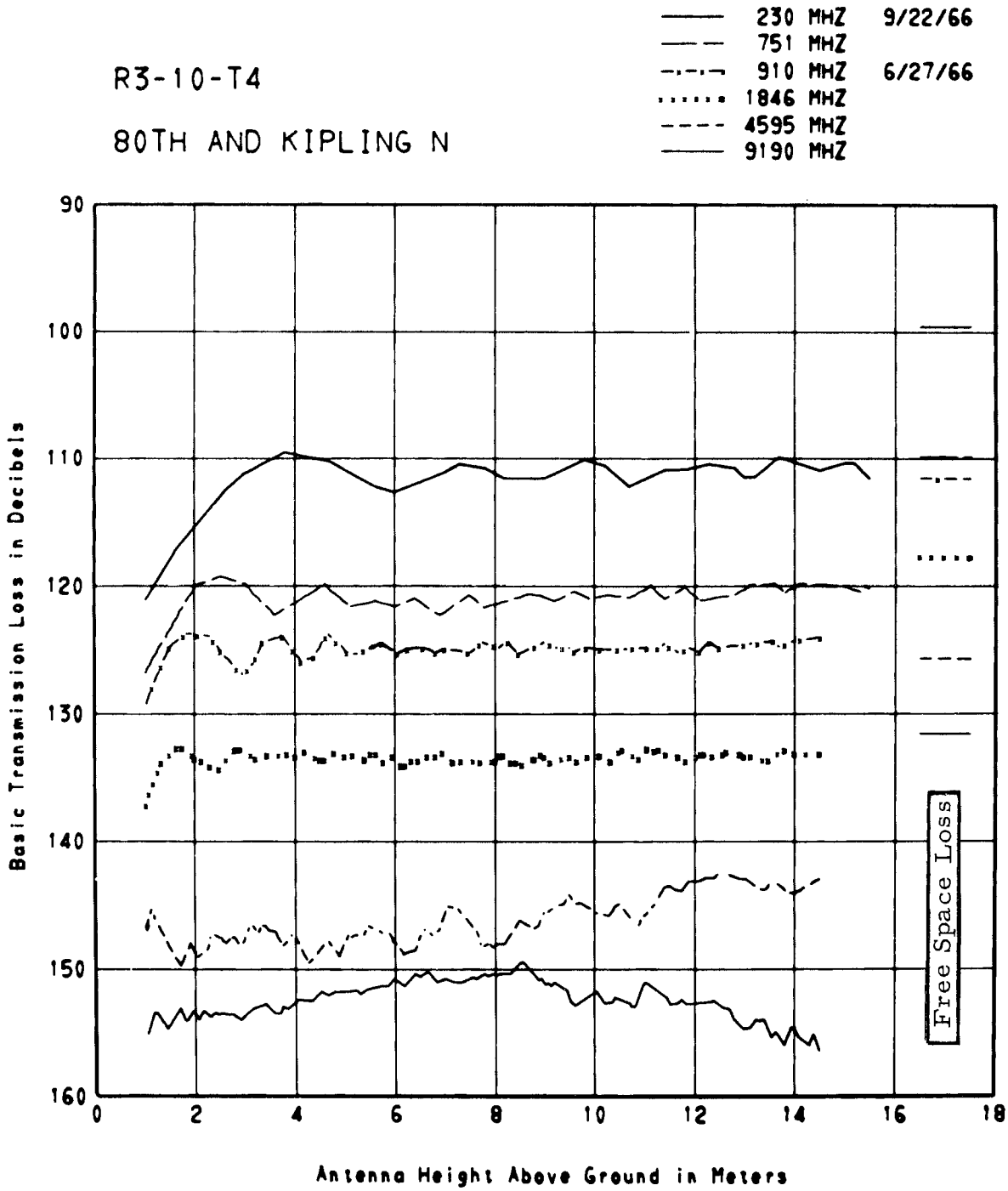
R3-10-T4
80TH AND KIPLING N

PATH VIEW FROM TRANSMITTER

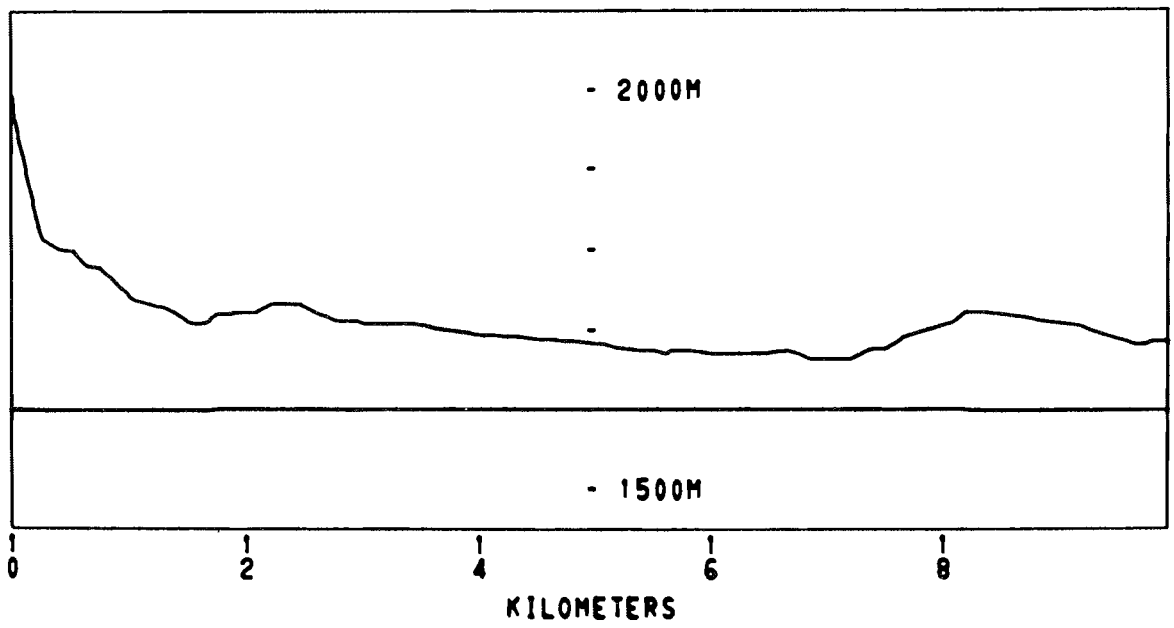
Bearing from common receiver site to transmitter site is
50° 57' 52" T.

R3-10-T4

80TH AND KIPLING N



RCVR. ELEV.	R3-10-T4	XMTR. ELEV.
1995 M	PATH LENGTH 9.91 km	1686 M



L_b (dB) SHORT TERM SIGNAL VARIABILITY

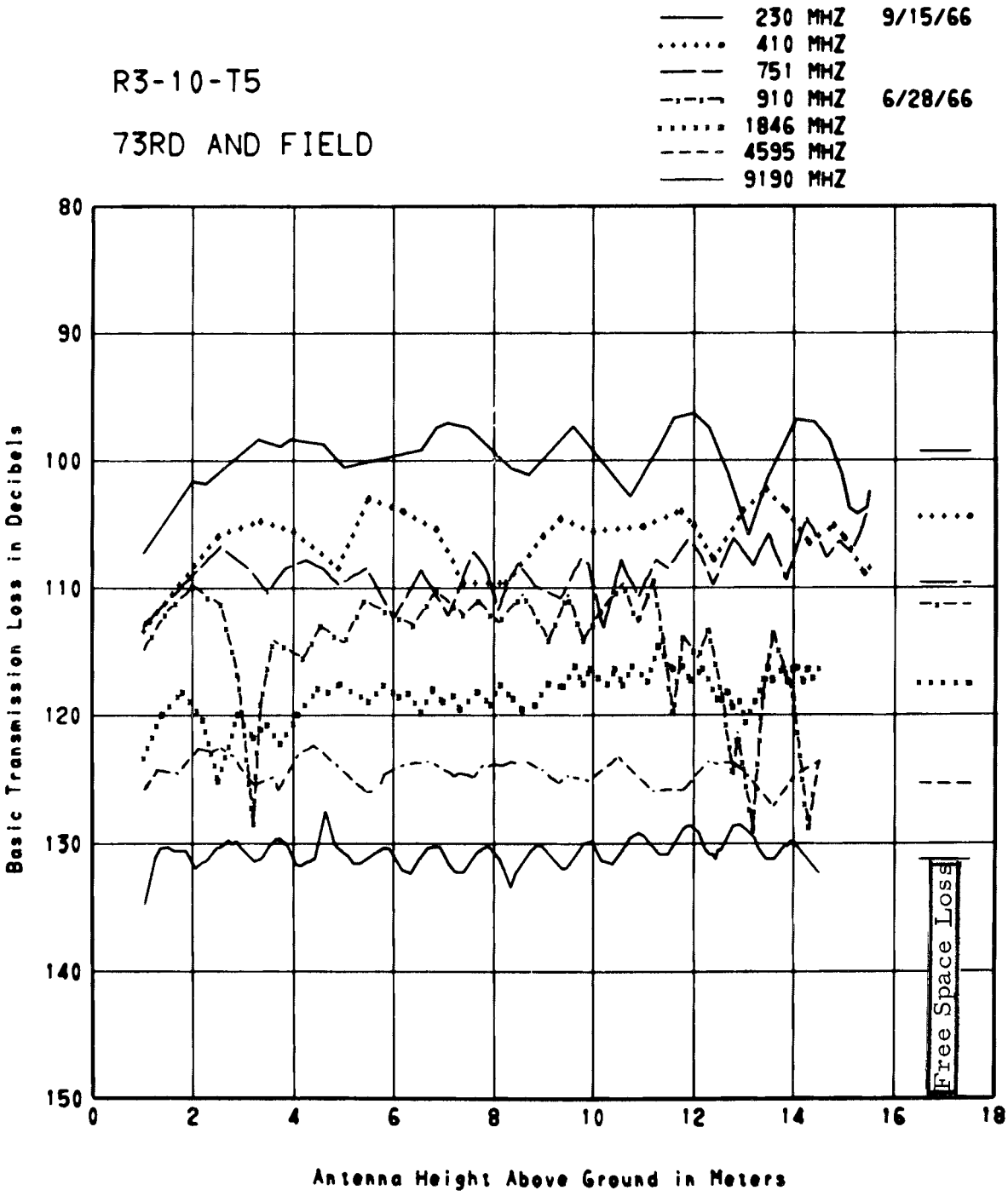
Freq(MHz)	230	410	751	910	1846	4595	9190
	9-22-66 at 15 M				6-27-66 at 15 M		
50%	112.5		120.0	111.7	133.0	141.6	154.2
Δ10%-90%	< 3		< 3	< 3	< 3	< 3	4.7
					6-27-66 at 7.3 M		
50%				116.2	132.8	144.4	149.9
Δ10%-90%				< 3	< 3	< 3	< 3
					6-27-66 at 1 M		
50%				117.8	136.4	148.0	152.0
Δ10%-90%				< 3	< 3	3.5	6.9

The foreground of the path is a field, sparsely covered with weeds. At 400 m, there is a house with 15- to 20-m high trees behind it.

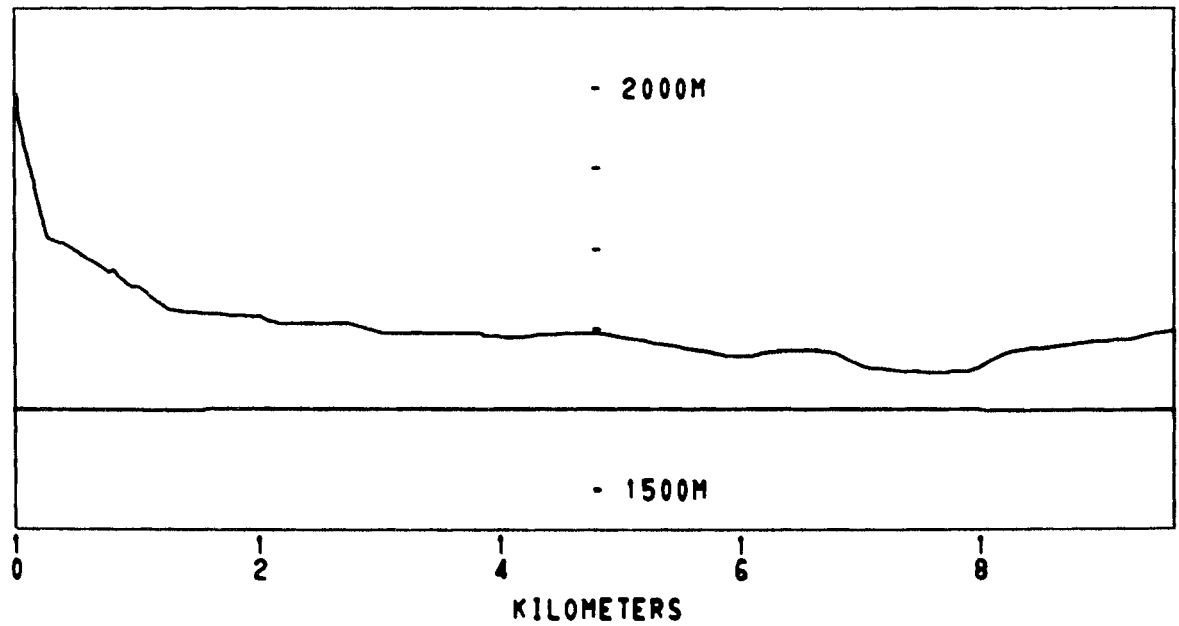
R3-10-T5
73RD AND FIELD

PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is 64° 36' 19" T.


R3-10-T5
73RD AND FIELD
230 MHZ 9/15/66
410 MHZ
751 MHZ
910 MHZ 6/28/66
1846 MHZ
4595 MHZ
9190 MHZ
Basic Transmission Loss in Decibels
80
90
100
110
120
130
140
150
0
2
4
6
8
10
12
14
16
18
Antenna Height Above Ground in Meters
Free Space Loss

RCVR. ELEV.	R3-10-T5	XMTR. ELEV.
1995 M	PATH LENGTH 9.59 km	1697 M



L_b (dB) SHORT TERM SIGNAL VARIABILITY

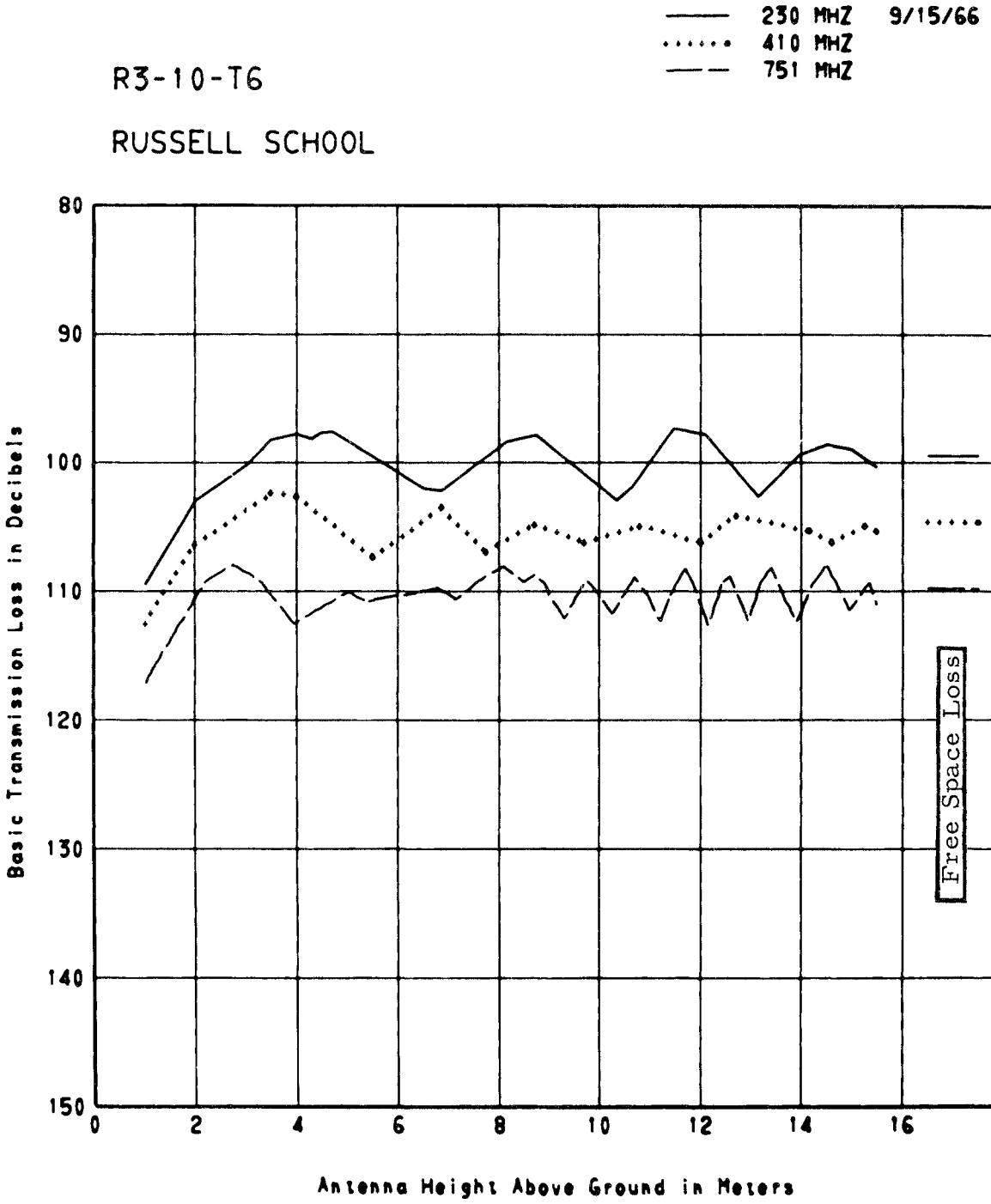
Freq(MHz)	230	410	751	910	1846	4595	9190
	9-15-66 at 15 M				6-28-66 at 7.3 M		
50%	102.7	105.9	105.3	111.5	117.8	124.7	132.2
Δ10%-90%	< 3	< 3	< 3	< 3	< 3	< 3	< 3

The path extends over broken terrain. At 35 m, there is an irrigation ditch with tall grass on either side of it. On the far side of the ditch, there is an alfalfa field, and then a dirt bank, 3-m high. At 0.4 km, there are 15-m high trees across the path.

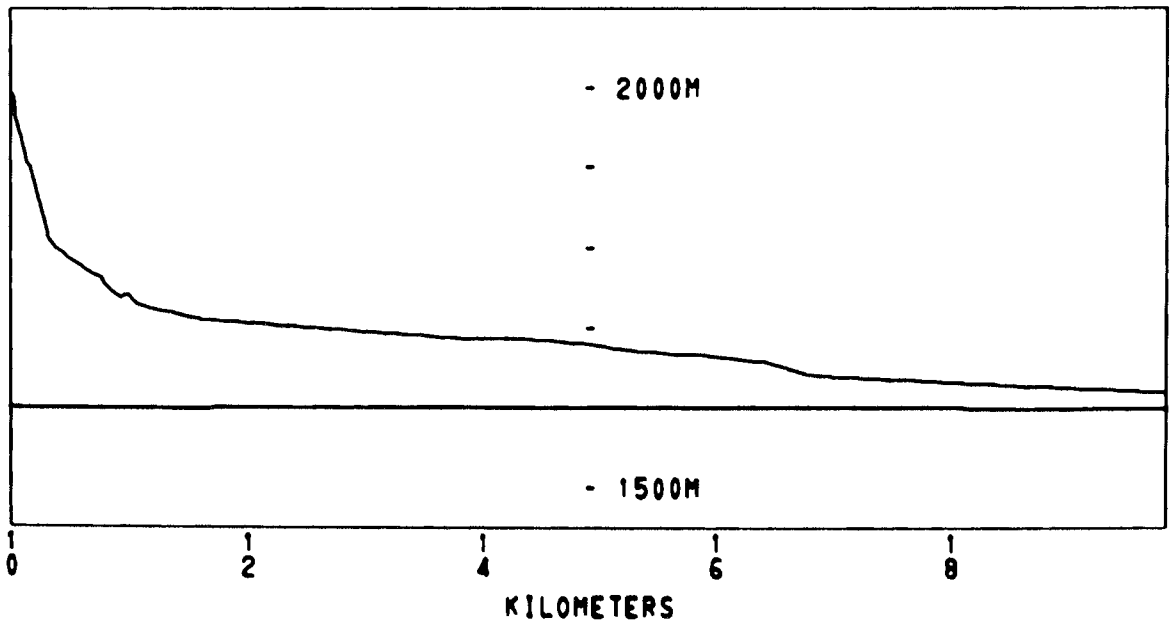
R3-10-T6
RUSSELL SCHOOL S

PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is
94° 14' 37" T.


230 MHZ 9/15/66
410 MHZ
751 MHZ
R3-10-T6
RUSSELL SCHOOL
80
90
100
110
120
130
140
150
0
2
4
6
8
10
12
14
16
18
Basic Transmission Loss in Decibels
Free Space Loss
Antenna Height Above Ground in Meters

RCVR. ELEV.	R3-10-T6	XMTR. ELEV.
1995 M	PATH LENGTH 9.82 km	1621 M



L_b (dB) SHORT TERM SIGNAL VARIABILITY

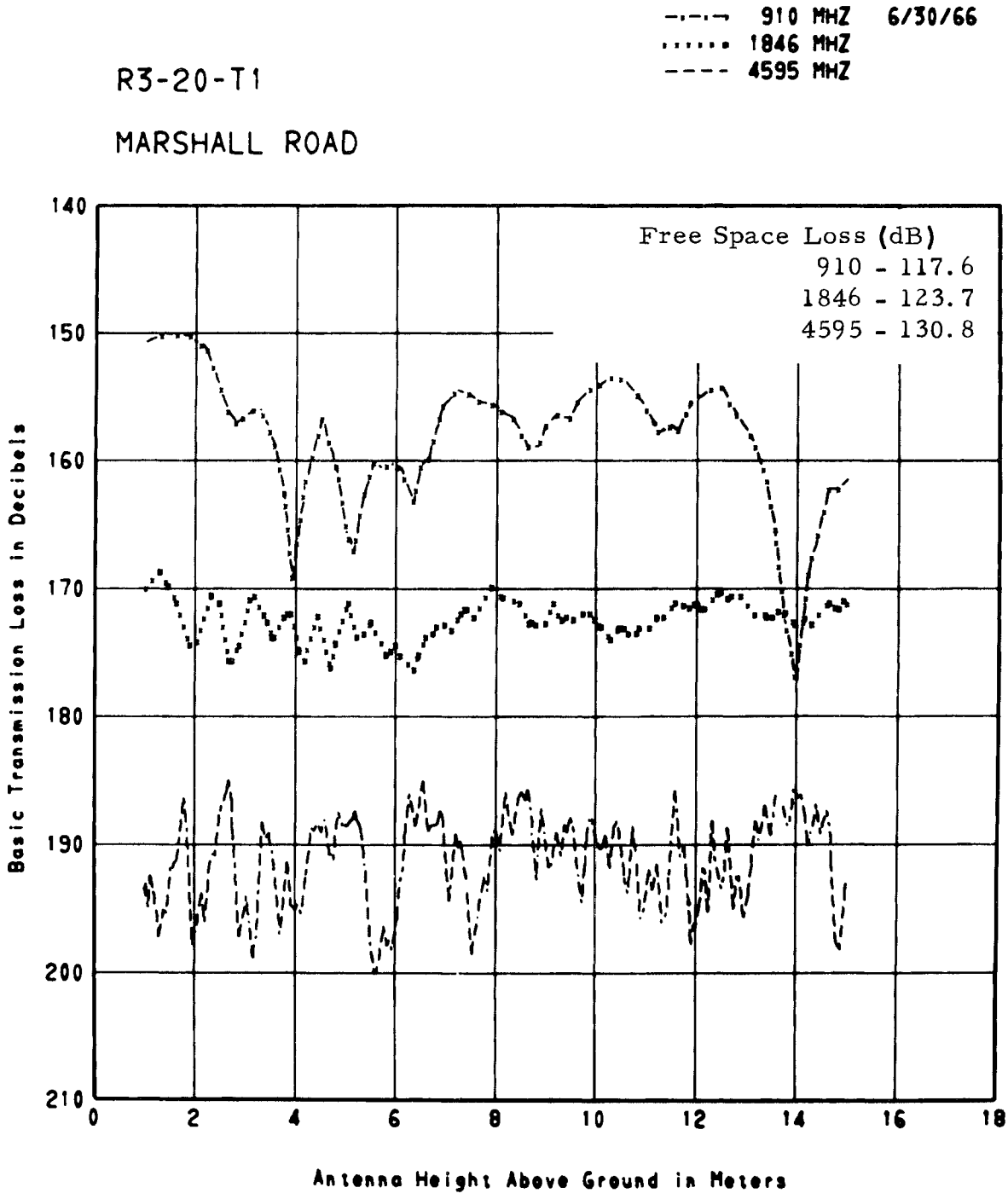
Freq(MHz)	230	410	751	910	1846	4595	9190
	9-15-66 at 15 M						
50%	100.1	104.1	113.0				
Δ10%-90%	< 3	< 3	< 3				

In the immediate foreground of the path is a dirt road. There is a fence across the path at 30 m and at 100 m, and a ditch at 200 m. Between the fences and the ditch, there is ground that is covered with grass. At 0.2 km, a house on one side of the path with trees, 5 to 10 m high.

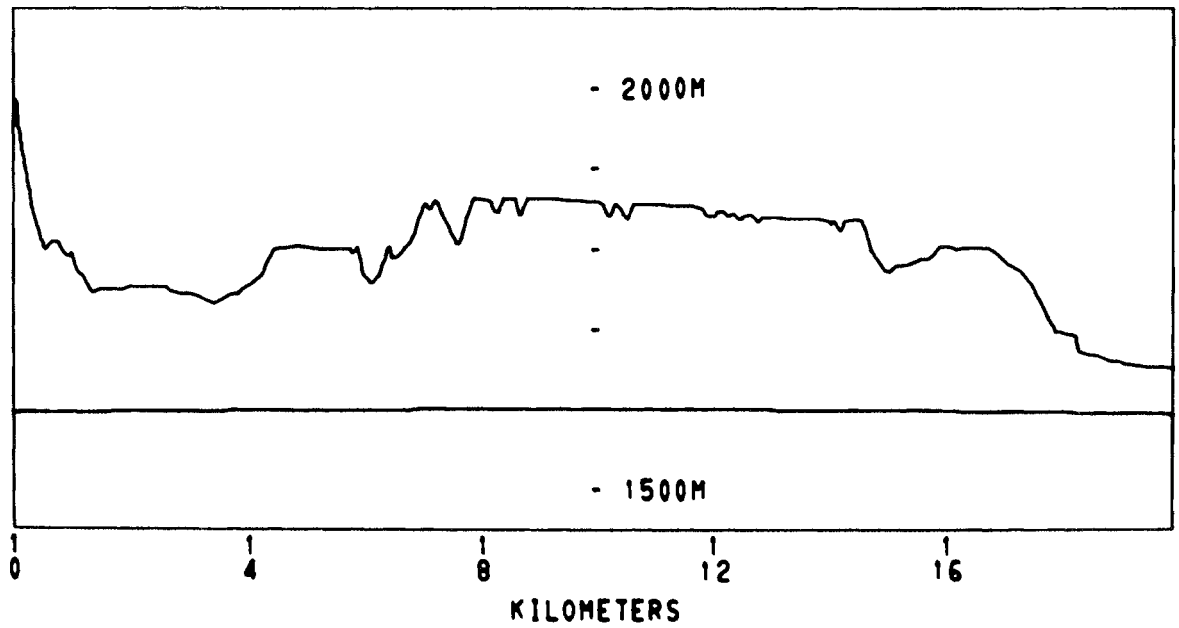
R3-20-T1
MARSHALL ROAD

PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is 351° 01' 07" T.


910 MHZ 6/30/66
1846 MHZ
4595 MHZ
R3-20-T1
MARSHALL ROAD
Free Space Loss (dB)
910 - 117.6
1846 - 123.7
4595 - 130.8
Basic Transmission Loss in Decibels
140
150
160
170
180
190
200
210
0
2
4
6
8
10
12
14
16
18
Antenna Height Above Ground in Meters

RCVR. ELEV.	R3-20-T1	XMTR. ELEV.
1995 M	PATH LENGTH 19.86 km	1657 M



L_b (dB) SHORT TERM SIGNAL VARIABILITY

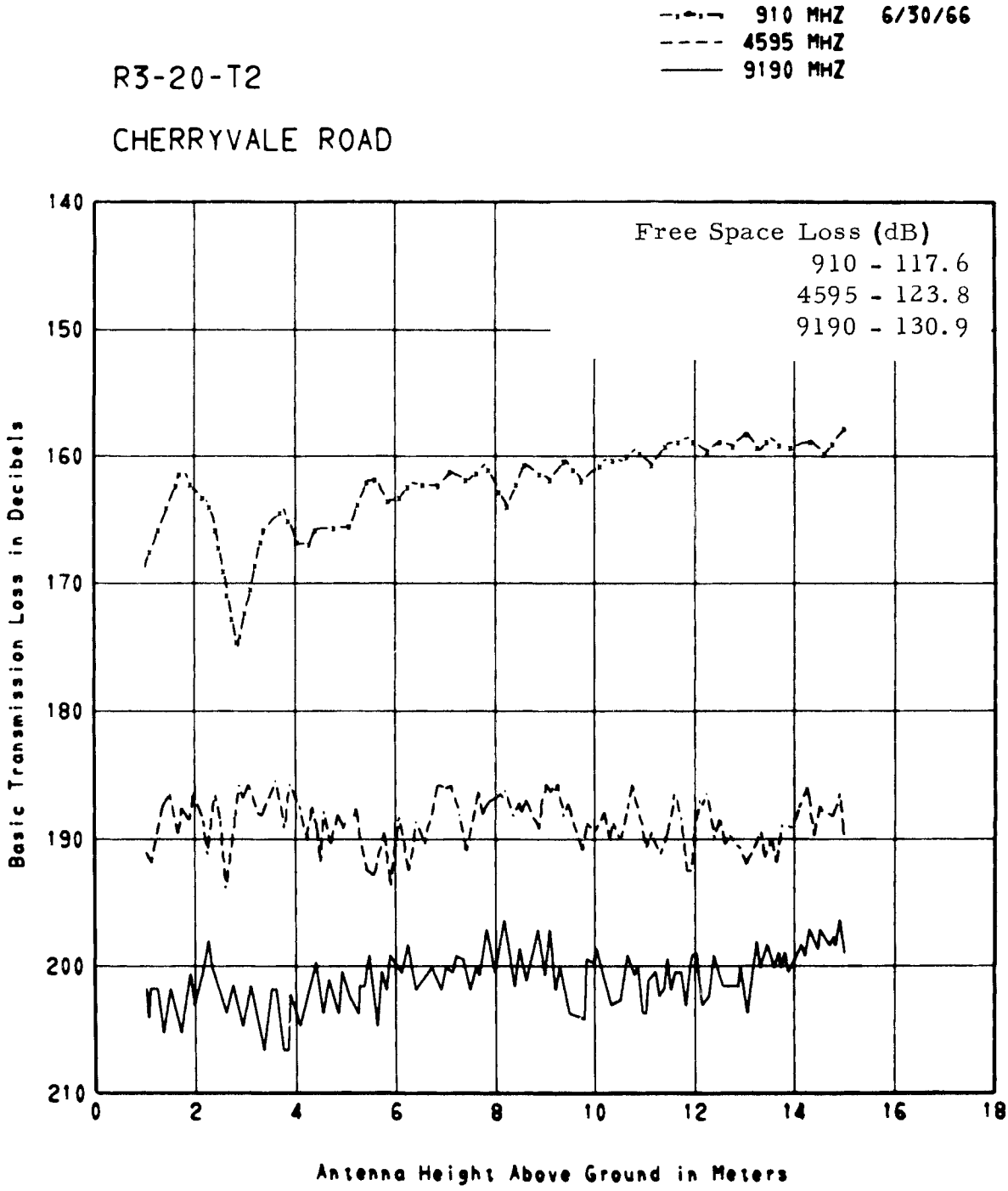
Freq(MHz)	230	410	751	910	1846	4595	9190
					6-30-66 at 15 M		
50%				161.5	170.0	188.4	
Δ10%-90%				<3	<3	11.0	
					6-30-66 at 7.3 M		
50%				155.3	172.5	190.2	
Δ10%-90%				<3	<3	8.9	
					6-30-66 at 1 M		
50%				151.7	169.6	191.5	
Δ10%-90%				<3	<3	7.6	

The path extends along a dirt road for 0.4 km. There is a power line on one side of the road and a telephone line on the other side. There are low fences on both sides of the road. A guy-cable crosses the road at 30 m. At 0.4 km, there are houses and trees on the path. A few trees are scattered beyond this point.

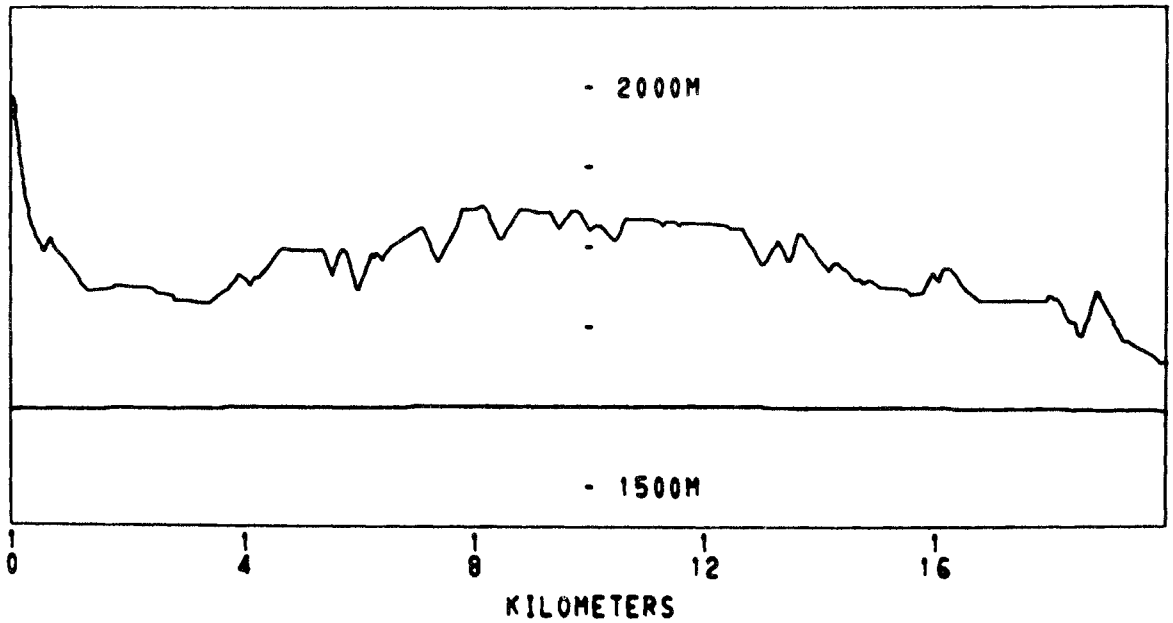
R3-20-T2
CHERRYVALE ROAD

PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is
357° 01' 07" T.


910 MHZ 6/30/66
4595 MHZ
9190 MHZ
R3-20-T2
CHERRYVALE ROAD
Free Space Loss (dB)
910 - 117.6
4595 - 123.8
9190 - 130.9
Basic Transmission Loss in Decibels
140
150
160
170
180
190
200
210
0
2
4
6
8
10
12
14
16
18
Antenna Height Above Ground in Meters

RCVR. ELEV.	R3-20-T2	XMTR. ELEV.
1995 M	PATH LENGTH 19.99 km	1660 M



L_b (dB) SHORT TERM SIGNAL VARIABILITY

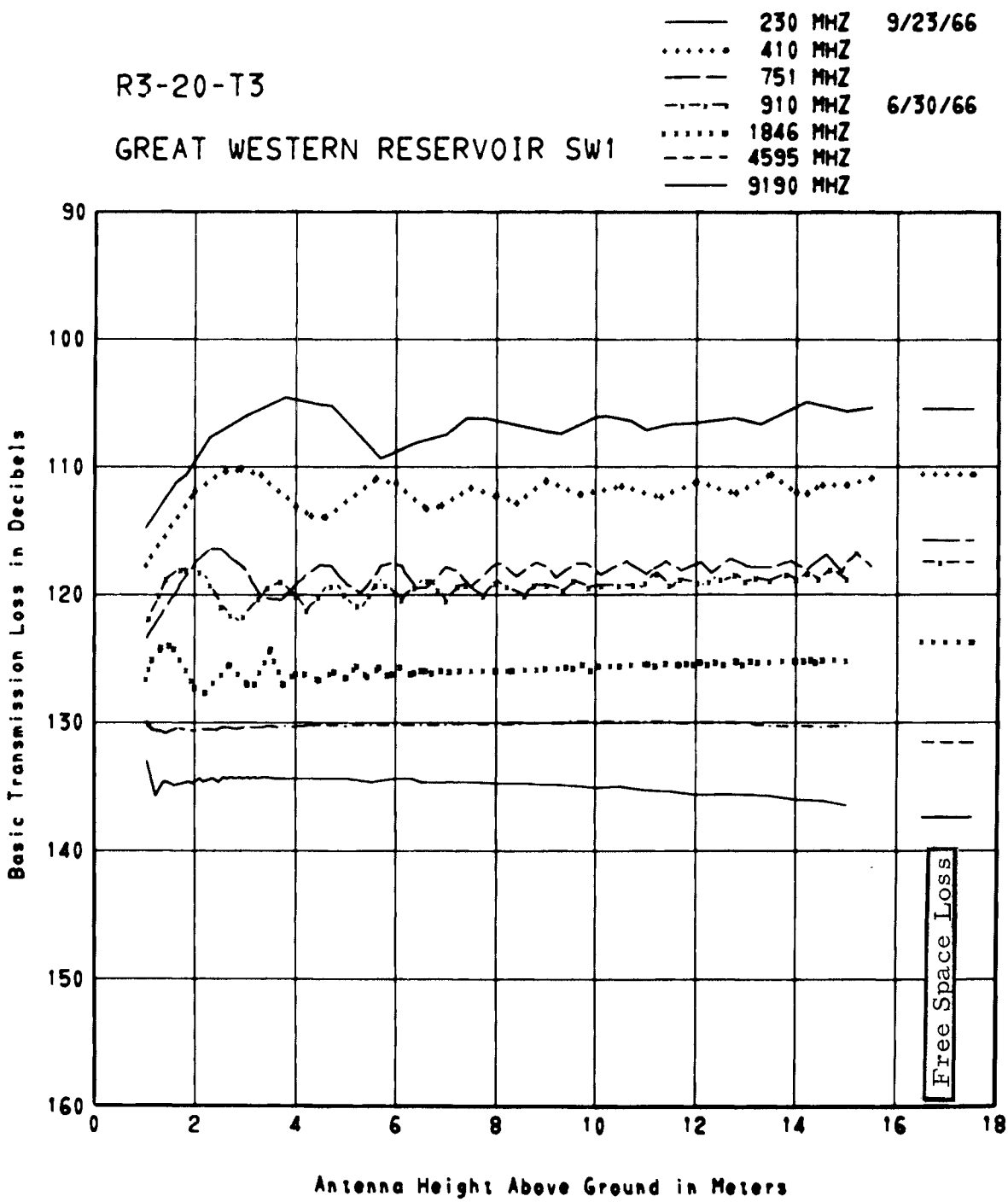
Freq(MHz)	230	410	751	910	1846	4595	9190
					6-30-66 at 15 M		
50%				157.0		188.2	201.1
Δ10%-90%				< 3		4.1	3.0
					6-30-66 at 7.3 M		
50%				161.5		189.5	203.4
Δ10%-90%				< 3		4.5	3.0
					6-30-66 at 1 M		
50%				167.5		187.6	205.6
Δ10%-90%				< 3		4.6	3.0

The site is located on a dirt road. A power line, a telephone cable, and a low fence are in the immediate foreground. At 100 m, there is an irrigation ditch with 20-m high trees. The path horizon is approximately 0.8 km from the transmitter.

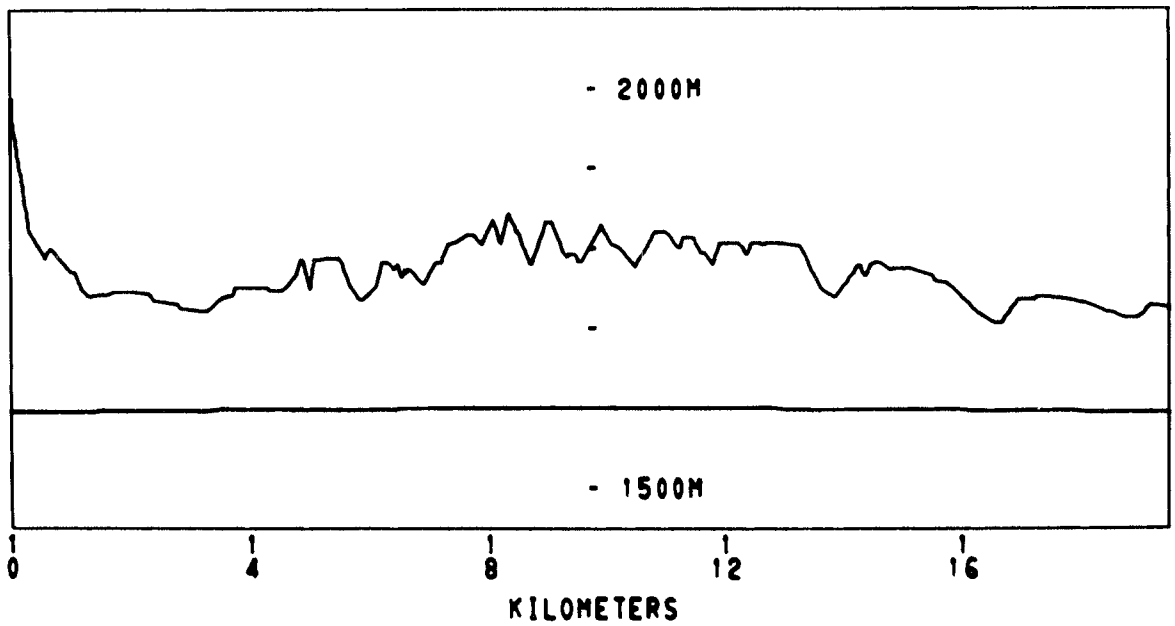
R3-20-T3
GREAT WESTERN RESERVOIR SW1

PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is
02^{o} 43' 52" T.


230 MHZ 9/23/66
410 MHZ
751 MHZ
910 MHZ 6/30/66
1846 MHZ
4595 MHZ
9190 MHZ
R3-20-T3
GREAT WESTERN RESERVOIR SW1
Basic Transmission Loss in Decibels
90
100
110
120
130
140
150
160
0
2
4
6
8
10
12
14
16
18
Antenna Height Above Ground in Meters
Free Space Loss

RCVR. ELEV.	R3-20-T3	XMTR. ELEV.
1995 M	PATH LENGTH 19.47 km	1732 M



L_b (dB) SHORT TERM SIGNAL VARIABILITY

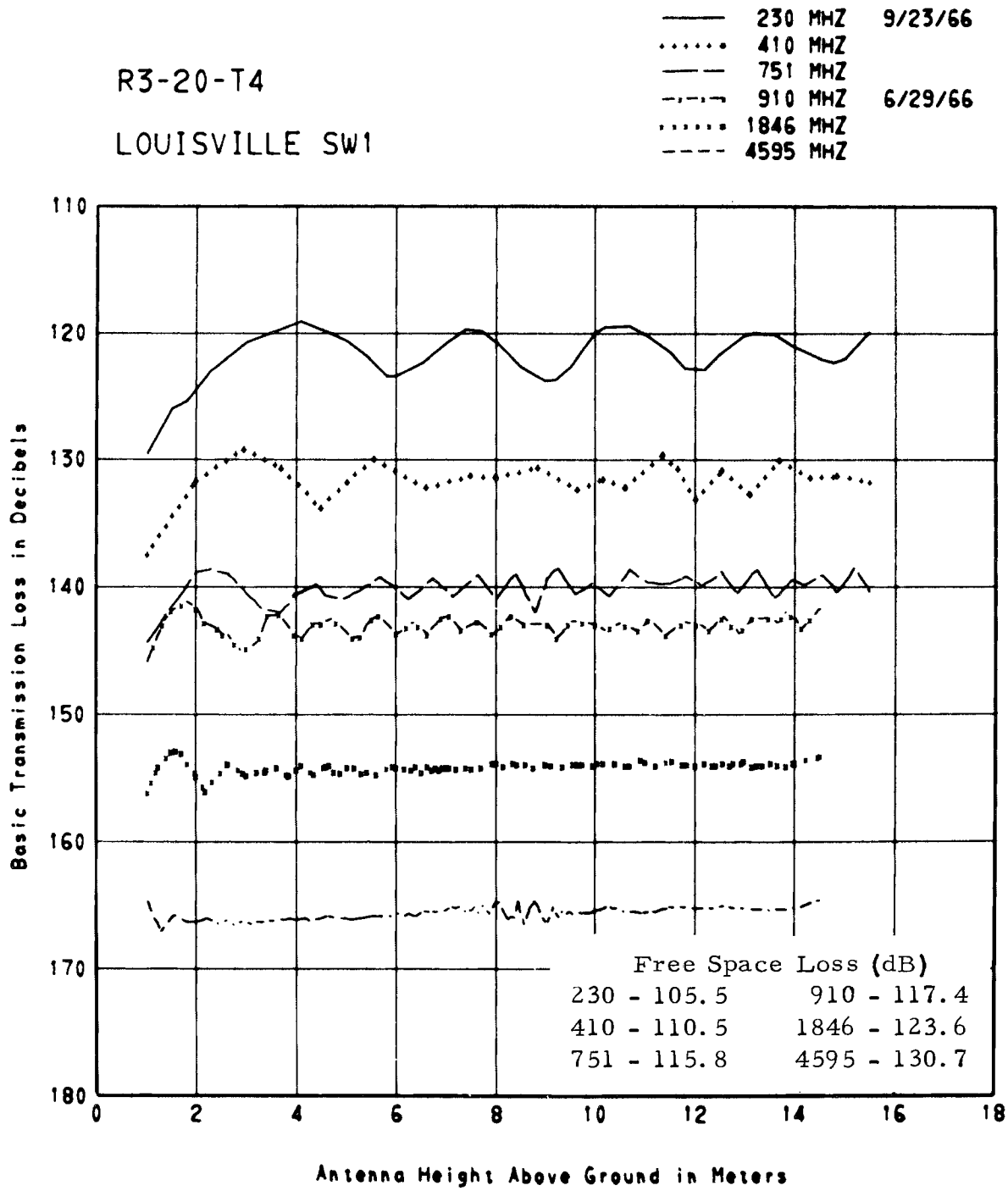
Freq(MHz)	230	410	751	910	1846	4595	9190
	9-23-66 at 15 M				6-30-66 at 7.3 M		
50%	105.7	110.2	117.7	119.1	125.1	129.6	134.2
Δ10%-90%	< 3	< 3	< 3	< 3	< 3	< 3	< 3

The path extends over grassland. Power and telephone lines cross the path at 100 m. At 120 m and to the right of the path, there are a house, a car, and a fence.

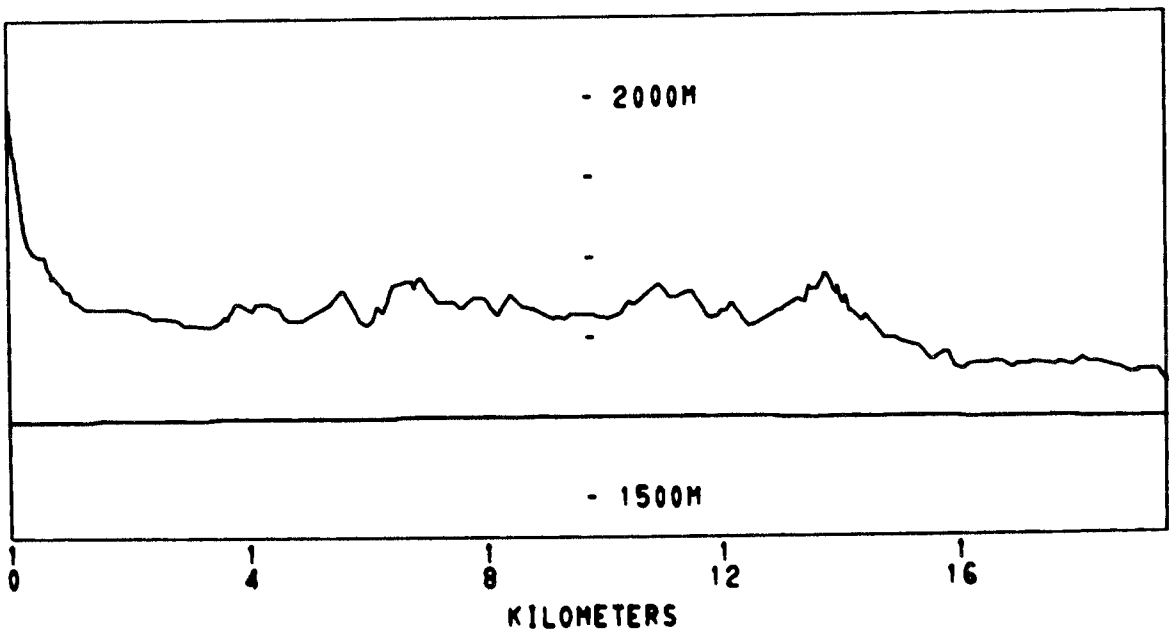
R3-20-T4
LOUISVILLE SW1

PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is
14° 39' 33" T.


230 MHZ 9/23/66
410 MHZ
751 MHZ
910 MHZ 6/29/66
1846 MHZ
4595 MHZ
R3-20-T4
LOUISVILLE SW1
Basic Transmission Loss in Decibels
110
120
130
140
150
160
170
180
0
2
4
6
8
10
12
14
16
18
Antenna Height Above Ground in Meters
Free Space Loss (dB)
230 - 105.5
410 - 110.5
751 - 115.8
910 - 117.4
1846 - 123.6
4595 - 130.7

RCVR. ELEV.	R3-20-T4	XMTR. ELEV.
1995 M	PATH LENGTH 19.47 km	1643 M



L_b (dB) SHORT TERM SIGNAL VARIABILITY

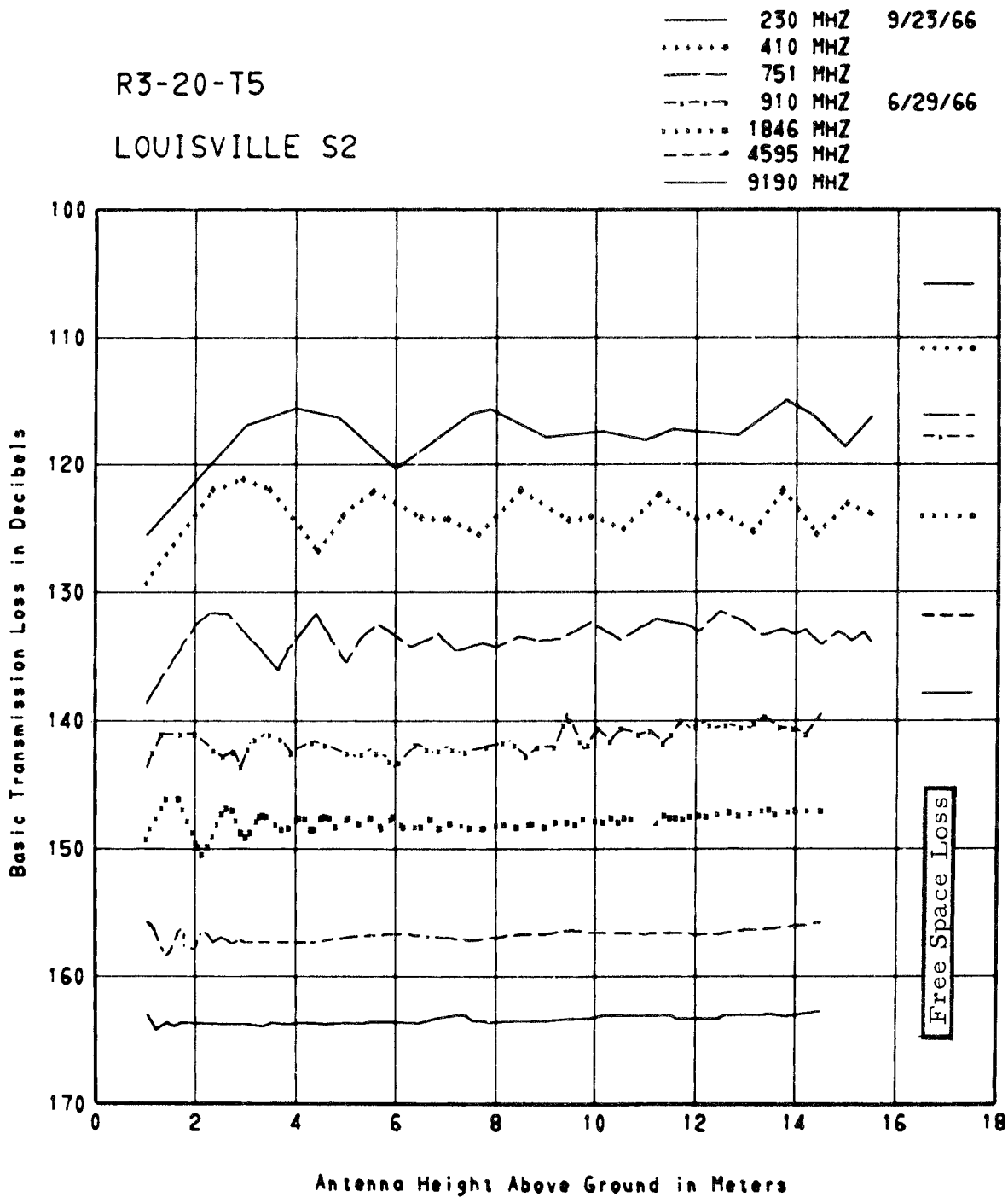
Freq(MHz)	230	410	751	910	1846	4595	9190
	9-23-66 at 15 M				6-29-66 at 15 M		
50%	121.2	131.6	138.9	141.6	152.8	165.4	
Δ10%-90%	< 3	< 3	< 3	< 3	< 3	< 3	
					6-29-66 at 7.3 M		
50%				143.9	152.9	165.2	
Δ10%-90%				< 3	< 3	< 3	
					6-29-66 at 1 M		
50%				146.1	152.8	165.0	
Δ10%-90%				< 3	< 3	< 3	

The path extends over grasslands for the first 500 m, then over plowed fields for the next 2 km. In the foreground, there are trees to the left of the path and a 15-wire telephone line to the right. There is a telephone cable across the path. There are several scattered trees along the path.

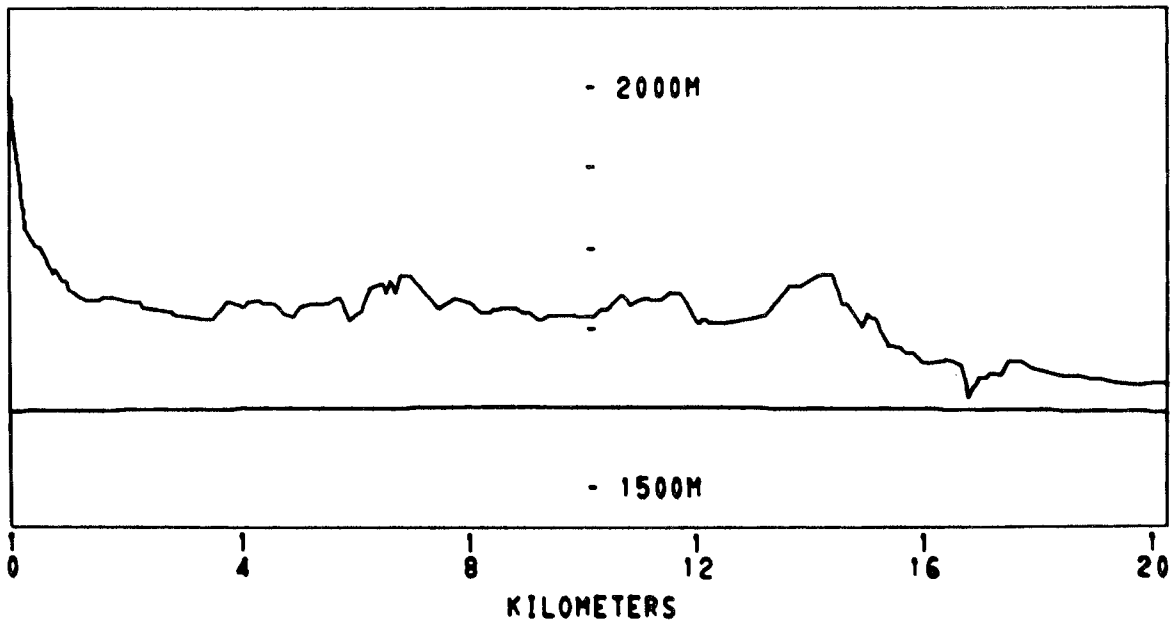
R3-20-T5
LOUISVILLE S1

PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is
17° 41' 07" T.


R3-20-T5
LOUISVILLE S2
230 MHZ 9/23/66
410 MHZ
751 MHZ
910 MHZ 6/29/66
1846 MHZ
4595 MHZ
9190 MHZ
Basic Transmission Loss in Decibels
100
110
120
130
140
150
160
170
0
2
4
6
8
10
12
14
16
18
Free Space Loss
Antenna Height Above Ground in Meters

RCVR. ELEV.	R3-20-T5	XMTR. ELEV.
1995 M	PATH LENGTH 20.25 km	1637 M



L_b (dB) SHORT TERM SIGNAL VARIABILITY

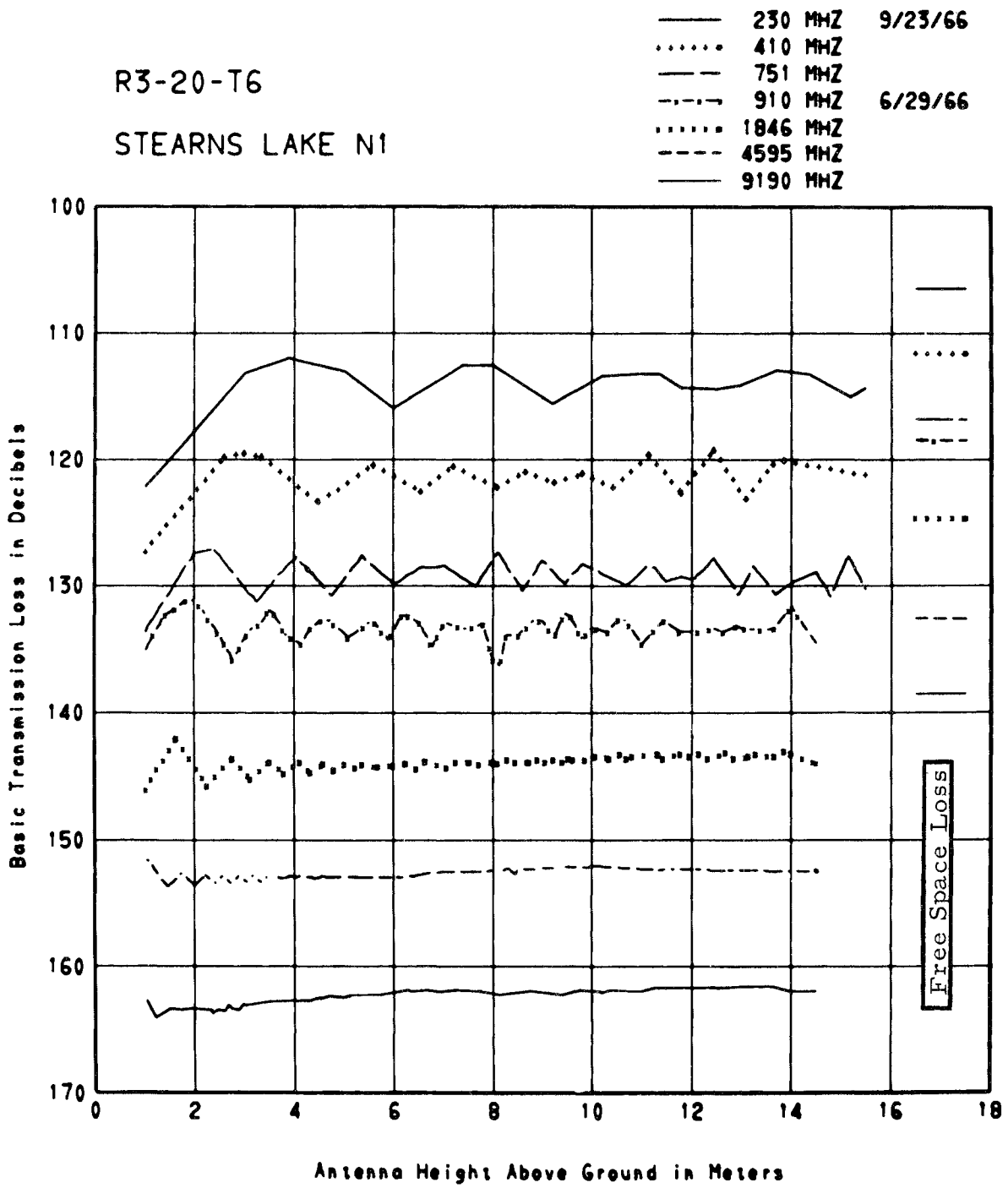
Freq(MHz)	230	410	751	910	1846	4595	9190
	9-23-66 at 15 M				6-29-66 at 7.3 M		
50%	116.0	131.6	138.9	141.2	147.8	156.7	162.8
Δ10%-90%	< 3	< 3	< 3	< 3	< 3	< 3	< 3

The path extends over a wheat field for 1.6 km. The rest of the path consists of grassland. There is a telephone cable 3 m to the left of the antenna. At 0.8 km, there is a 2-m high pile of dirt, which is covered with weeds. There are a few trees to the right and to the left of the path.

R3-20-T6
STEARNS LAKE N1

PATH VIEW FROM TRANSMITTER

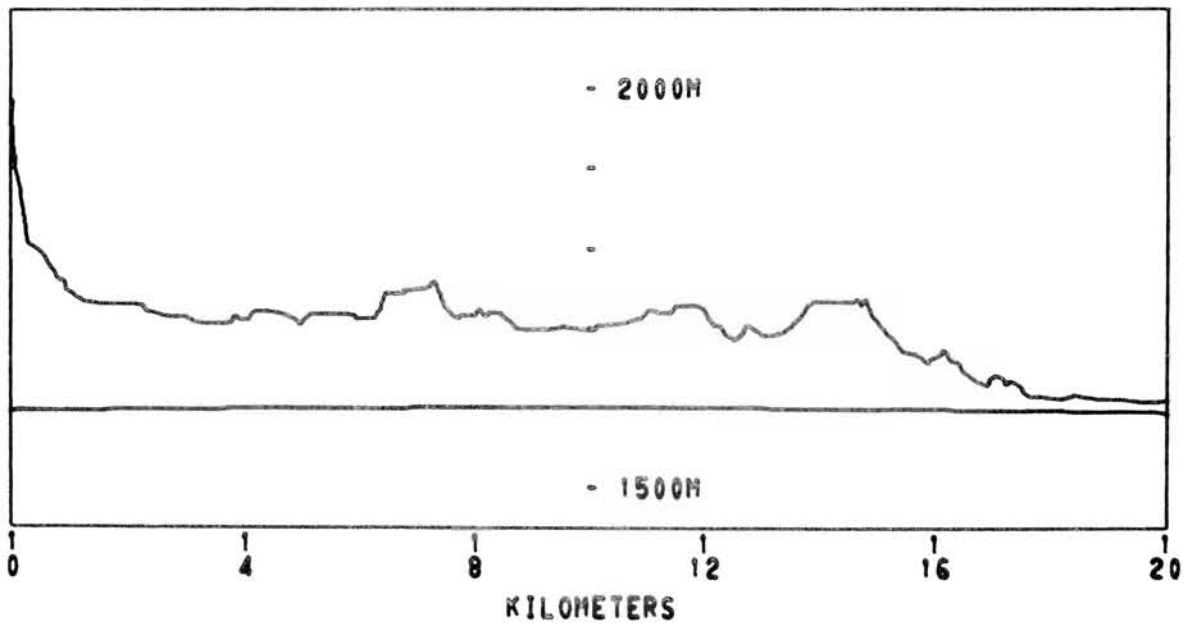
Bearing from common receiver site to transmitter site is
32° 26' 23" T.


R3-20-T6
STEARNS LAKE N1
230 MHZ 9/23/66
410 MHZ
751 MHZ
910 MHZ 6/29/66
1846 MHZ
4595 MHZ
9190 MHZ
Basic Transmission Loss in Decibels
100
110
120
130
140
150
160
170
0
2
4
6
8
10
12
14
16
18
Antenna Height Above Ground in Meters
Free Space Loss

RCVR. ELEV.
1995 M

R3-20-T6
PATH LENGTH 20.04 km

XMTR. ELEV.
1615 M



L_b (dB) SHORT TERM SIGNAL VARIABILITY

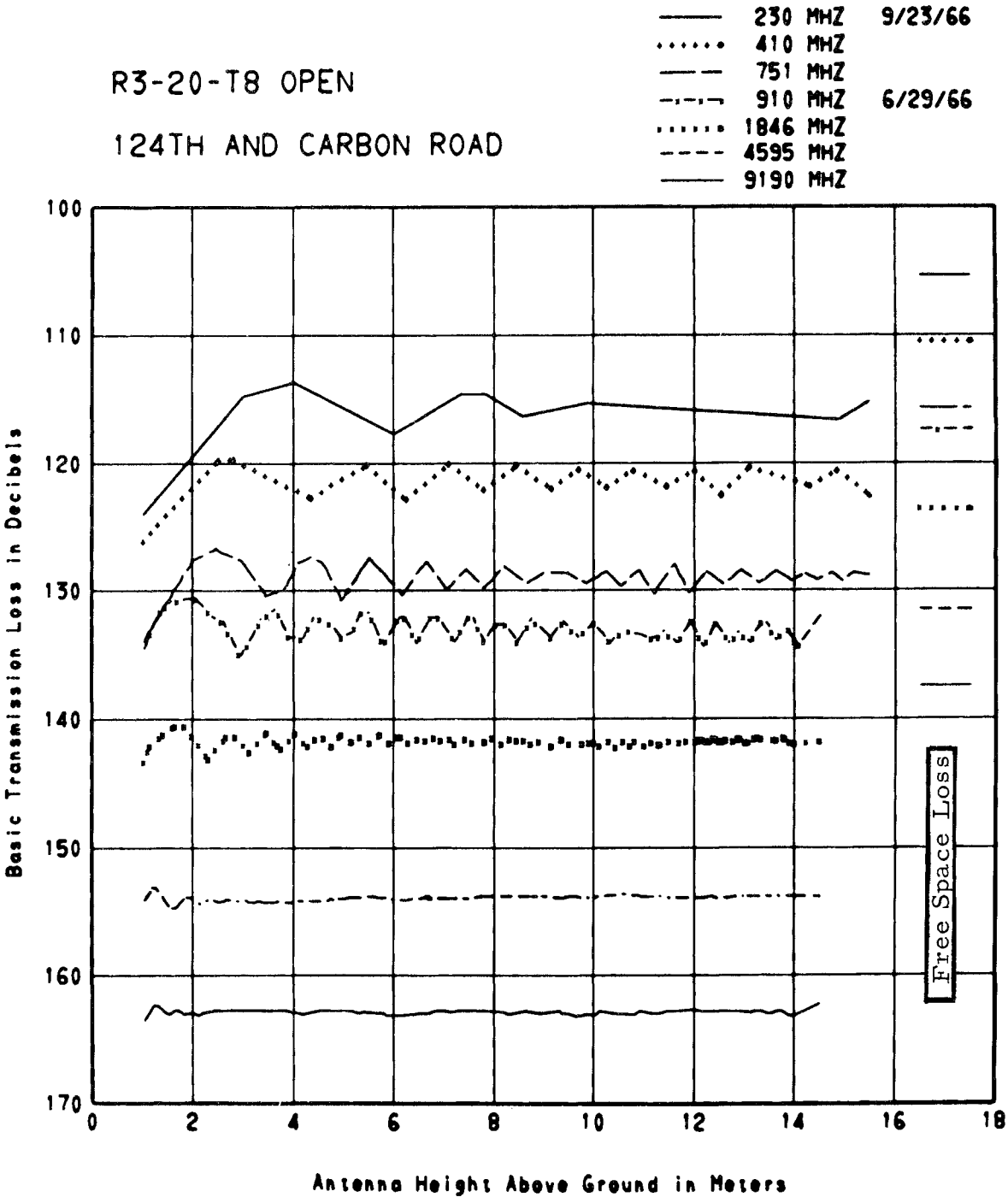
Freq(MHz)	230	410	751	910	1846	4595	9190
	9-23-66 at 15 M				6-29-66 at 15 M		
50%	115.4	119.2	130.2	134.4	142.8	152.4	161.3
Δ10%-90%	< 3	<3	< 3	< 3	< 3	< 3	< 3
					6-29-66 at 7.3 M		
50%				132.9	142.8	152.4	161.5
Δ10%-90%				< 3	< 3	< 3	< 3
					6-29-66 at 1 M		
50%				136.9	145.3	151.6	162.1
Δ10%-90%				< 3	< 3	< 3	< 3

The first 0.4 km of the path extends over a wheat field; the rest of it is grassland. There are scattered trees on either side of the path at 1.2 km.

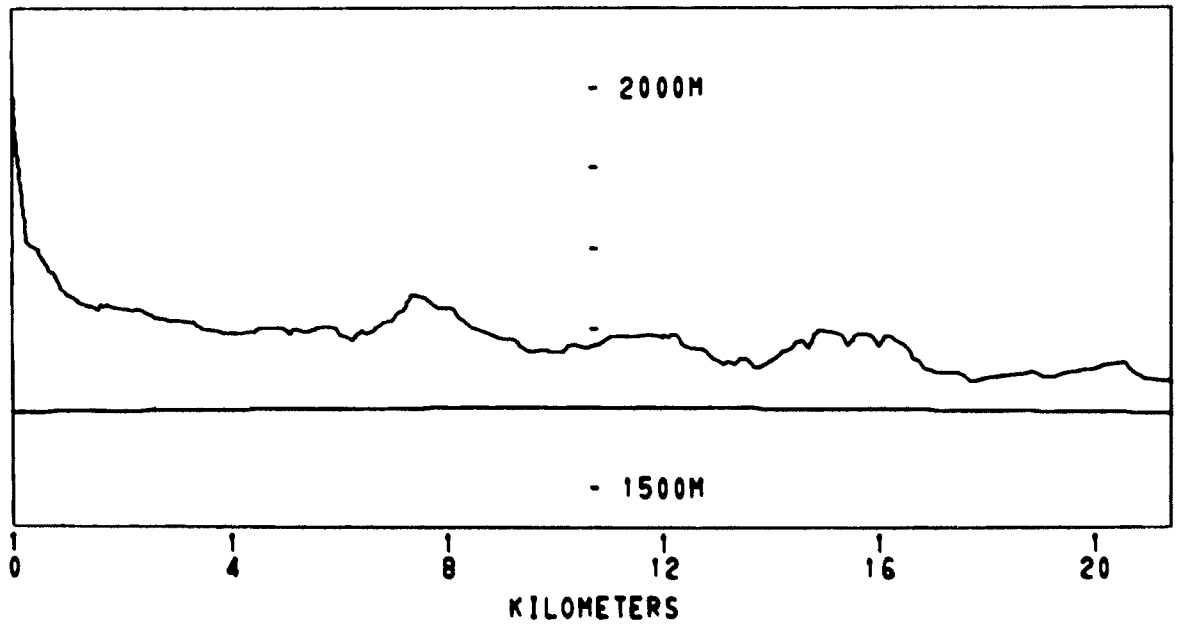
R3-20-T8 OPEN AND CONCEALED
124TH AND CARBON ROAD

PATH VIEW FROM OPEN SITE
Bearing from common receiver site to transmitter site is
23° 40' 18" T.

PATH VIEW FROM CONCEALED SITE
Bearing from common receiver site to transmitter site is
23° 25' 38" T.


230 MHZ 9/23/66
410 MHZ
751 MHZ
910 MHZ 6/29/66
1846 MHZ
4595 MHZ
9190 MHZ
R3-20-T8 OPEN
124TH AND CARBON ROAD
Basic Transmission Loss in Decibels
100
110
120
130
140
150
160
170
0
2
4
6
8
10
12
14
16
18
Antenna Height Above Ground in Meters
Free Space Loss

RCVR. ELEV.	R3-20-T8 OPEN	XMTR. ELEV.
1995 M	PATH LENGTH 21.42 km	1642 M



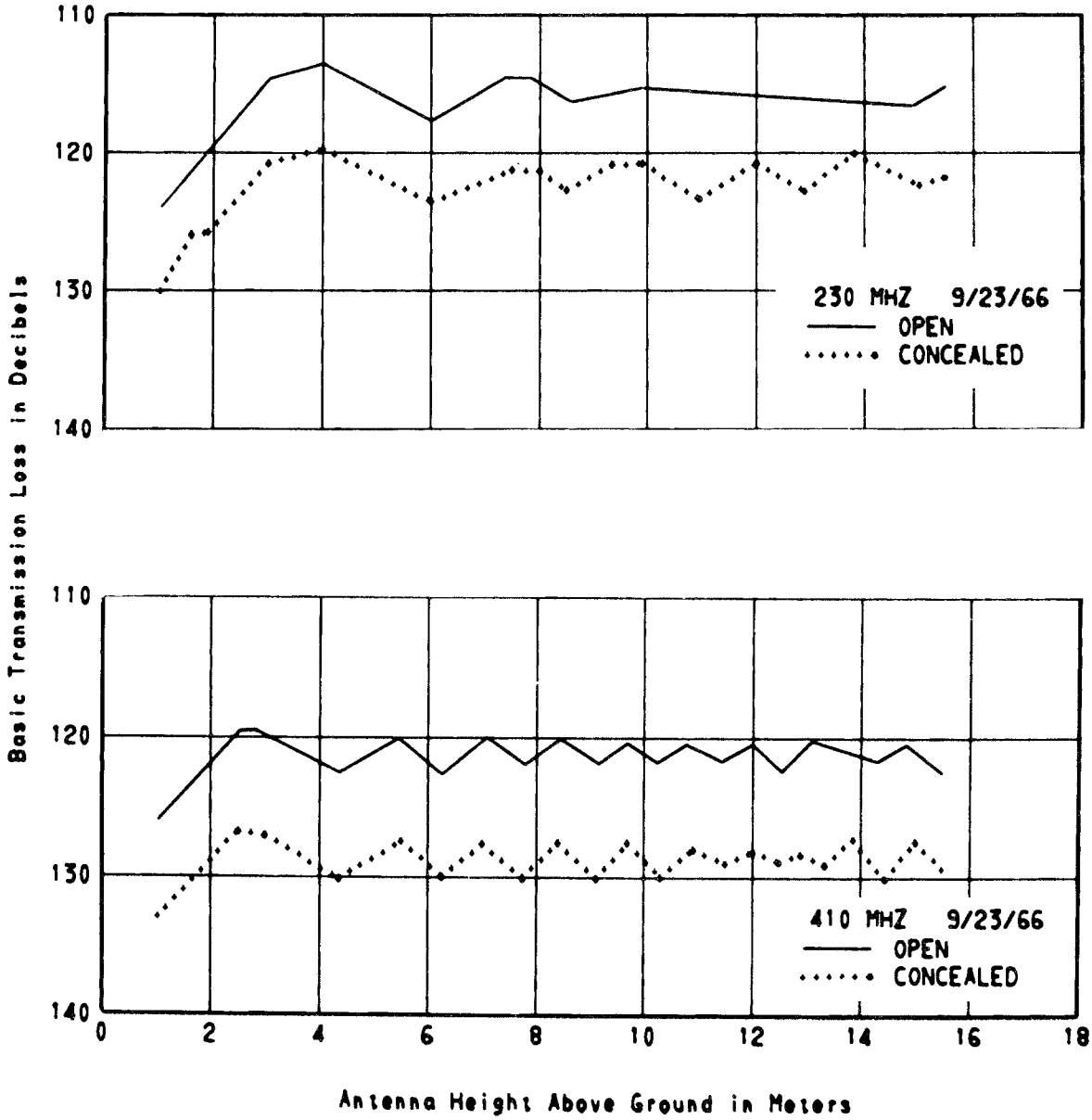
L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
	9-23-66 at 15 M				6-29-66 at 7.3 M		
50%	113.9	121.0	128.9	134.1	140.8	153.8	162.6
Δ10%-90%	< 3	< 3	< 3	< 3	< 3	< 3	< 3

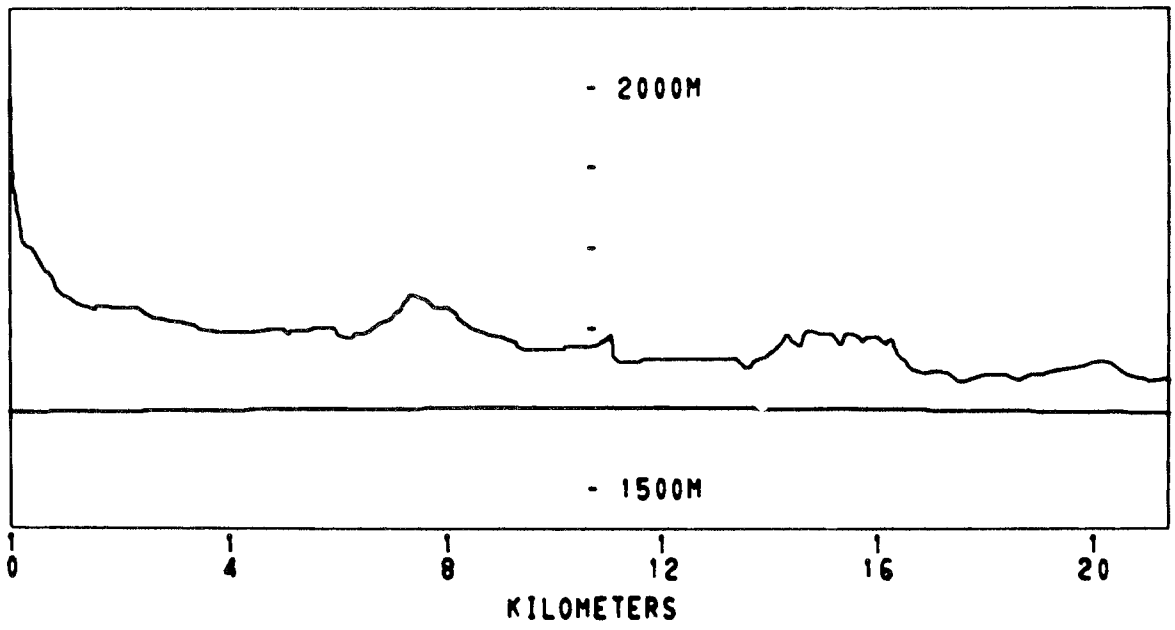
Power lines cross the path in the immediate foreground. The path also crosses a small pond, a fence, and scattered trees, 4 to 15 m high. To the left of the path, at 70 m, is a section of corrugated tin standing on edge.

R3-20-T8 O&C

124TH AND CARBON ROAD



RCVR. ELEV.	R3-20-T8 CONCEALED	XMTR. ELEV.
1995 M	PATH LENGTH 21.25 km	1642 M



L_b (dB) SHORT TERM VARIABILITY

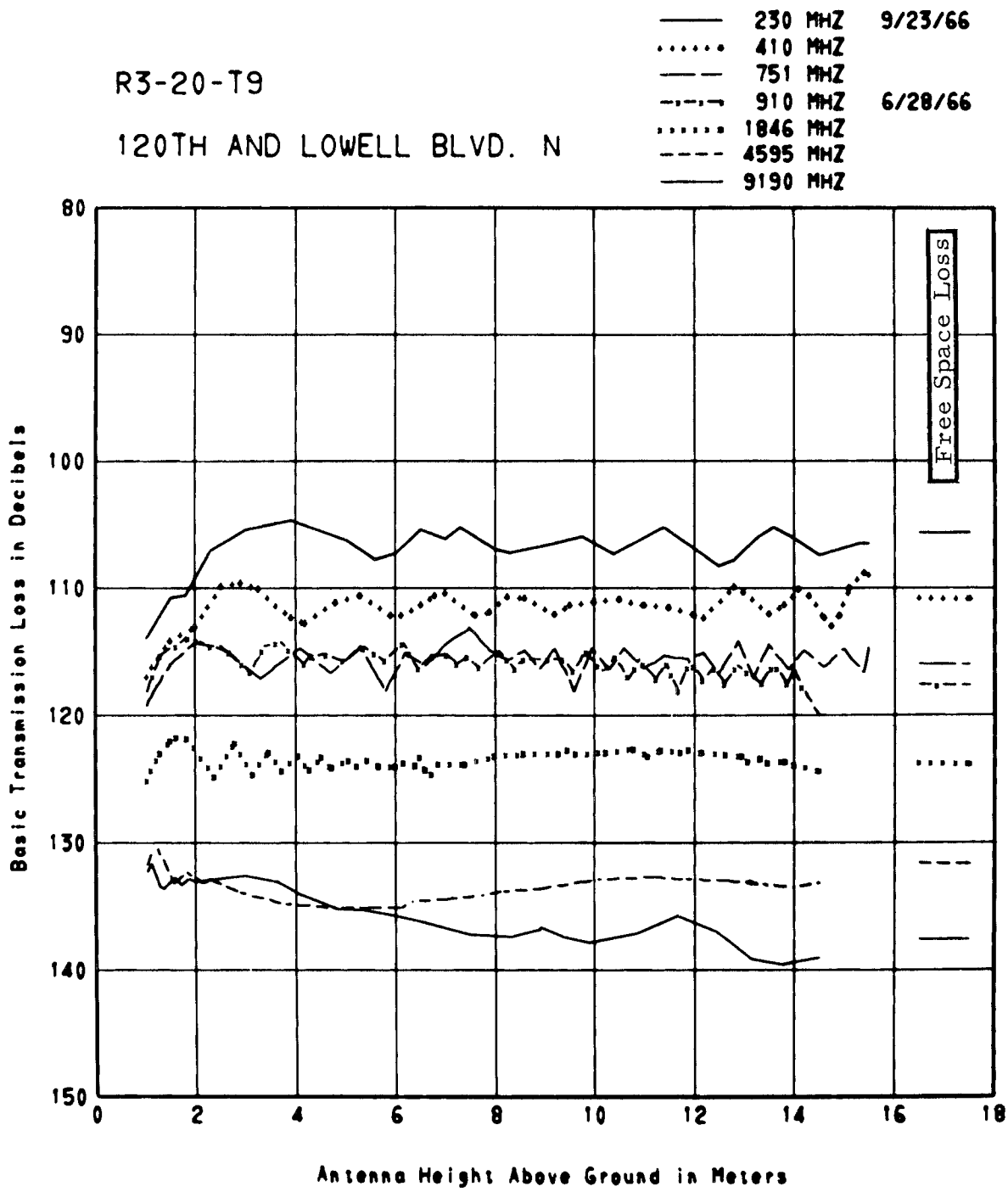
Freq(MHz)	230	410	751	910	1846	4595	9190
	9-23-66 at 15 M						
50%	123.5	129.6					
Δ10%-90%	< 3	< 3					

A 2-wire power line crosses the path, 5 m from the antenna. The trees on the path are 5 to 15 m high and they extend along the path for 100 m.

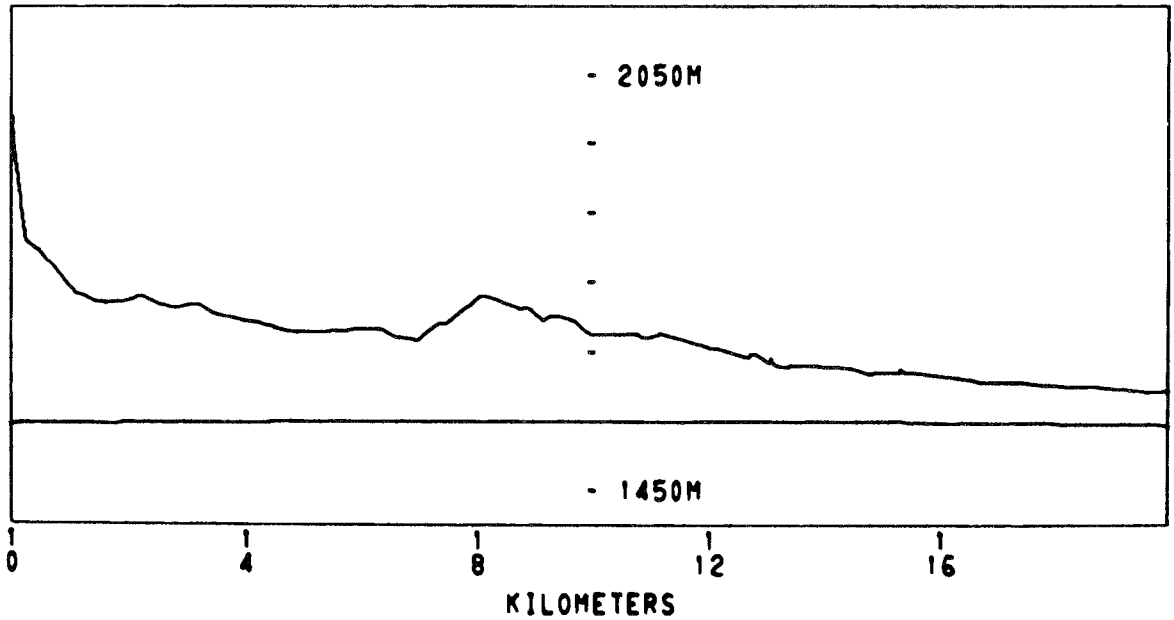
R3-20-T9
120TH AND LOWELL BOULEVARD N

PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is
45° 21' 40" T.


230 MHZ 9/23/66
410 MHZ
751 MHZ
910 MHZ 6/28/66
1846 MHZ
4595 MHZ
9190 MHZ
R3-20-T9
120TH AND LOWELL BLVD. N
Free Space Loss
Basic Transmission Loss in Decibels
80
90
100
110
120
130
140
150
0
2
4
6
8
10
12
14
16
18
Antenna Height Above Ground in Meters

RCVR. ELEV.	R3-20-T9	XMTR. ELEV.
1995 M	PATH LENGTH 19.89 km	1599 M



L_b (dB) SHORT TERM SIGNAL VARIABILITY

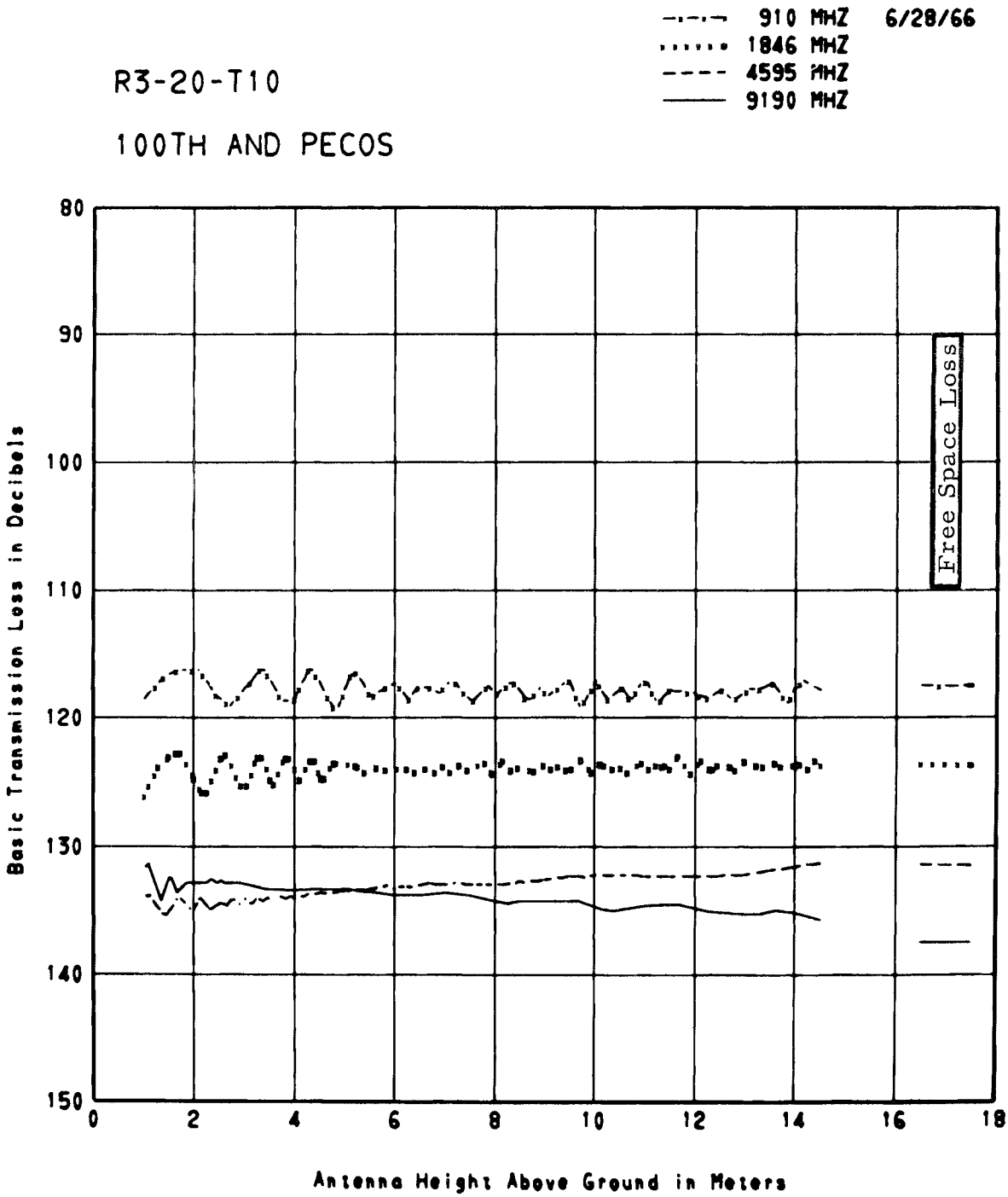
Freq(MHz)	230	410	751	910	1846	4595	9190
	9-23-66 at 15 M				6-28-66 at 7.3 M		
50%	106.4	108.6	114.8	116.7	122.7	134.8	137.1
Δ10%-90%	< 3	< 3	< 3	< 3	< 3	< 3	< 3

The path extends over a wheatfield for 35 m, then plowed ground for 10 m, then over wheatfield, grassland, and more fields. At 40 m, there is a fence corner to the left of the path. At 0.8 km, a power line and a road cross the path. There are a few scattered trees about 2.3 km along the path.

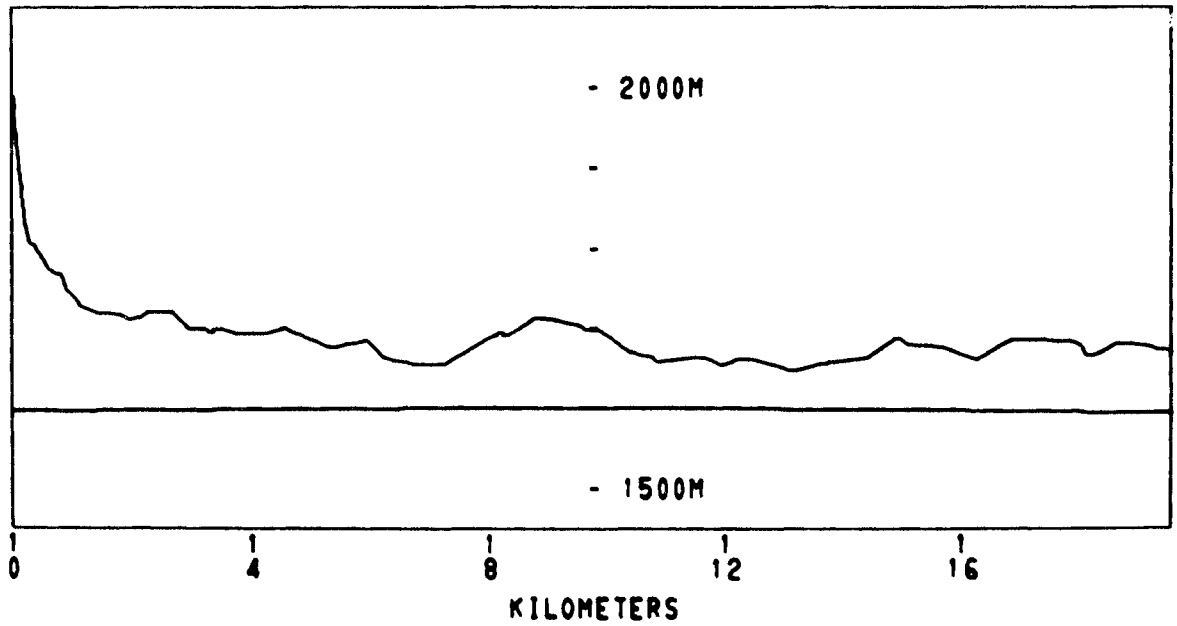
R3-20-T10
100TH AND PECOS

PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is
58° 51' 23" T.


910 MHZ 6/28/66
1846 MHZ
4595 MHZ
9190 MHZ
R3-20-T10
100TH AND PECOS
Free Space Loss
Basic Transmission Loss in Decibels
Antenna Height Above Ground in Meters
80
90
100
110
120
130
140
150
0
2
4
6
8
10
12
14
16
18

RCVR. ELEV.	R3-20-T10	XMTR. ELEV.
1995 M	PATH LENGTH 19.51 km	1677 M



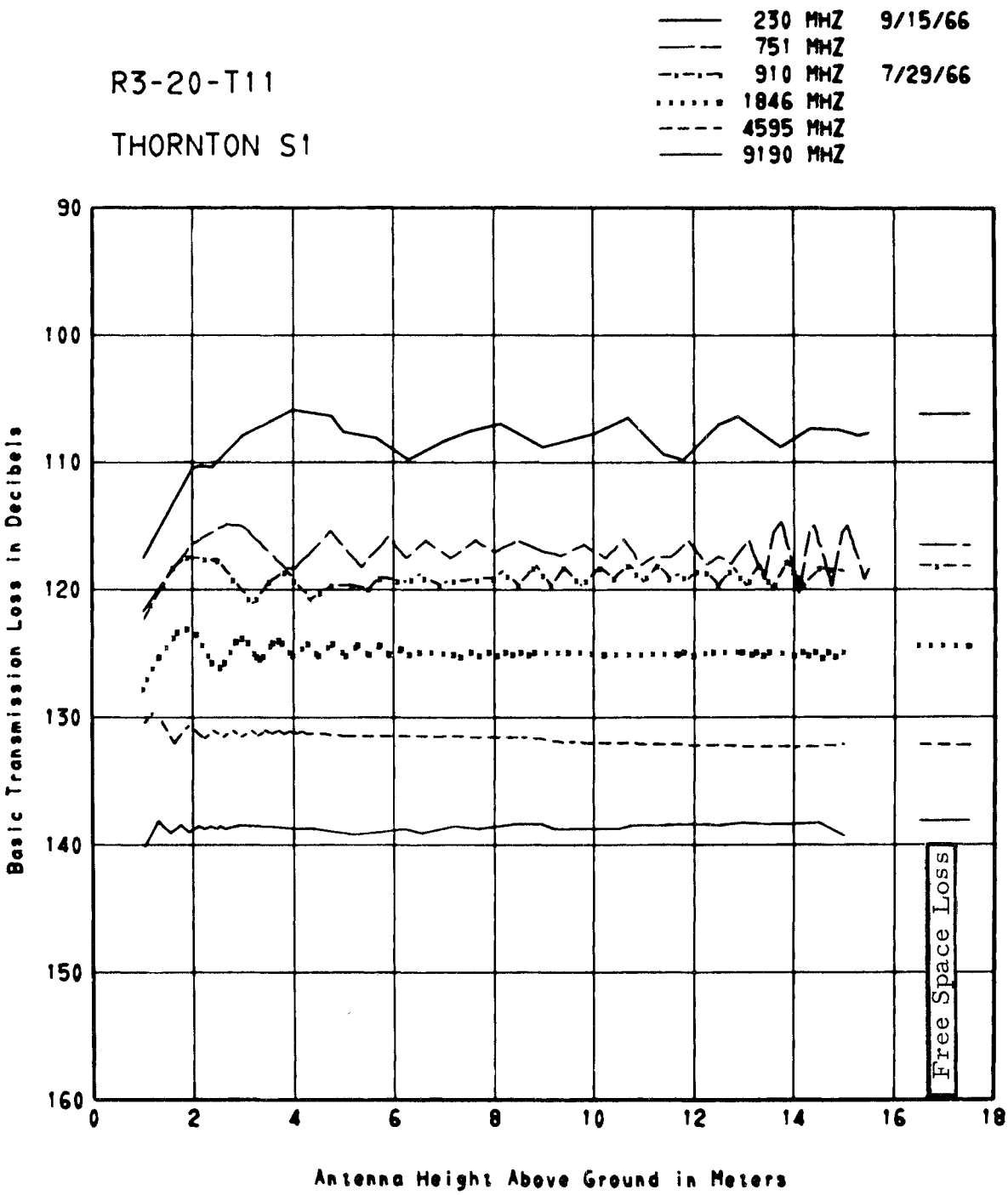
L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
					6-28-66 at 7.3 M		
50%				116.7	123.6	132.8	133.5
Δ10%-90%				< 3	< 3	< 3	< 3

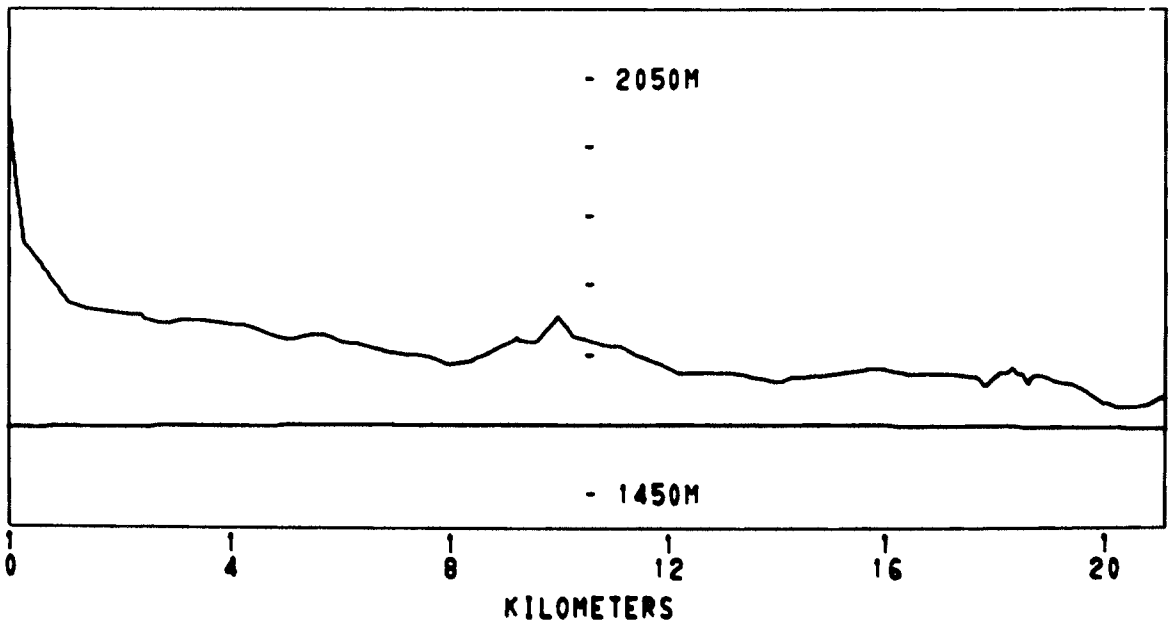
The site is located in an undeveloped housing area which has a weed covering. There is a plowed field for 1.6 km beyond the housing area, and then houses. A power line crosses the path at 0.8 km.

PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is
72° 50' 47" T.


230 MHZ 9/15/66
751 MHZ
910 MHZ 7/29/66
1846 MHZ
4595 MHZ
9190 MHZ
R3-20-T11
THORNTON S1
Basic Transmission Loss in Decibels
90
100
110
120
130
140
150
160
0
2
4
6
8
10
12
14
16
18
Antenna Height Above Ground in Meters
Free Space Loss

RCVR. ELEV.	R3-20-T11	XMTR. ELEV.
1995 M	PATH LENGTH 21.08 km	1594 M



L_b (dB) SHORT TERM SIGNAL VARIABILITY

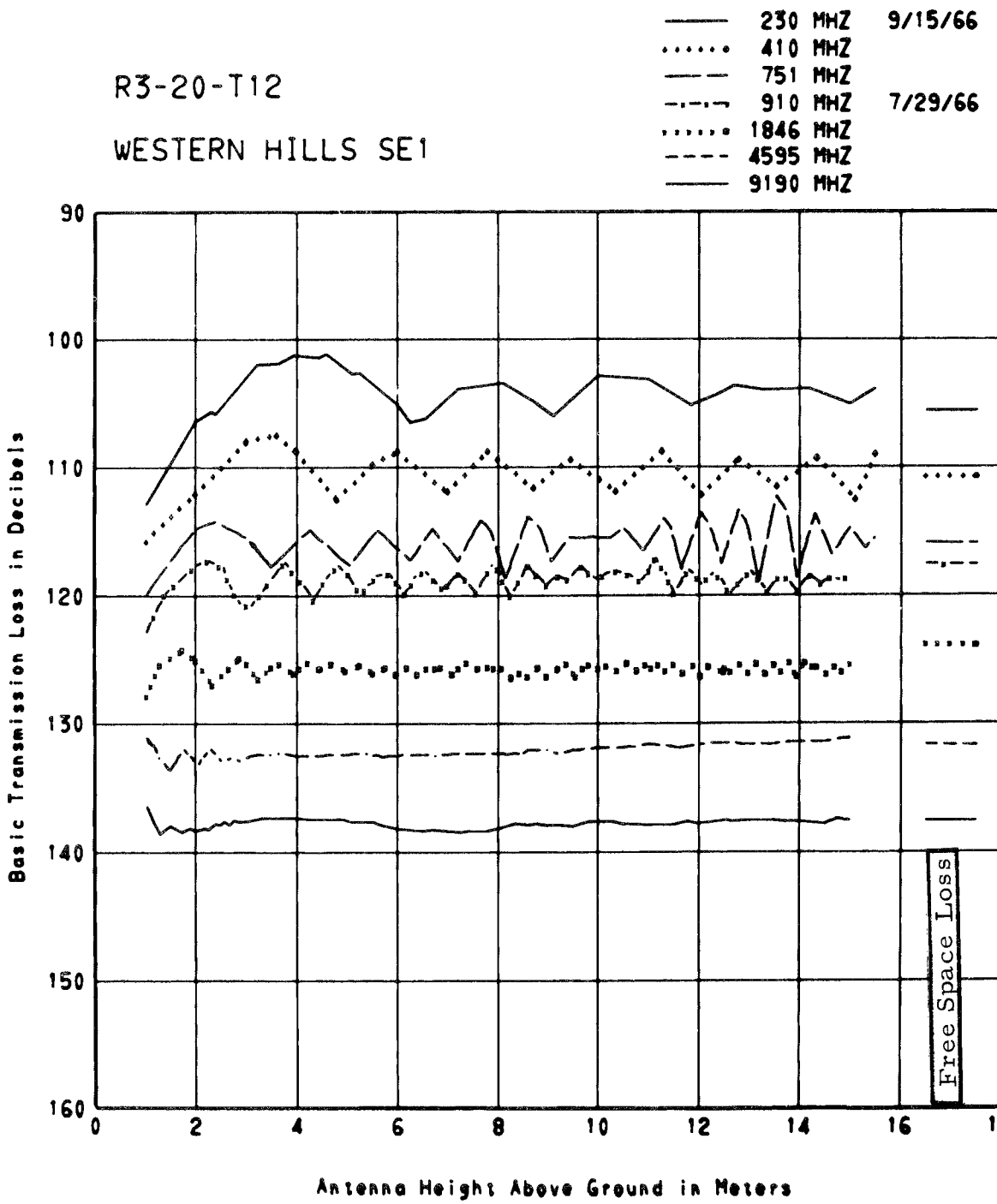
Freq(MHz)	230	410	751	910	1846	4595	9190
	9-15-66 at 15 M				7-29-66 at 7.3 M		
50%	107.2		117.3	119.0	123.0	131.0	138.3
Δ10%-90%	< 3		< 3	< 3	< 3	< 3	< 3

The first 0.4 km of the path is covered with weeds. The next 0.4 km has houses, power lines, and trees. There are trees to the right and to the left of the path.

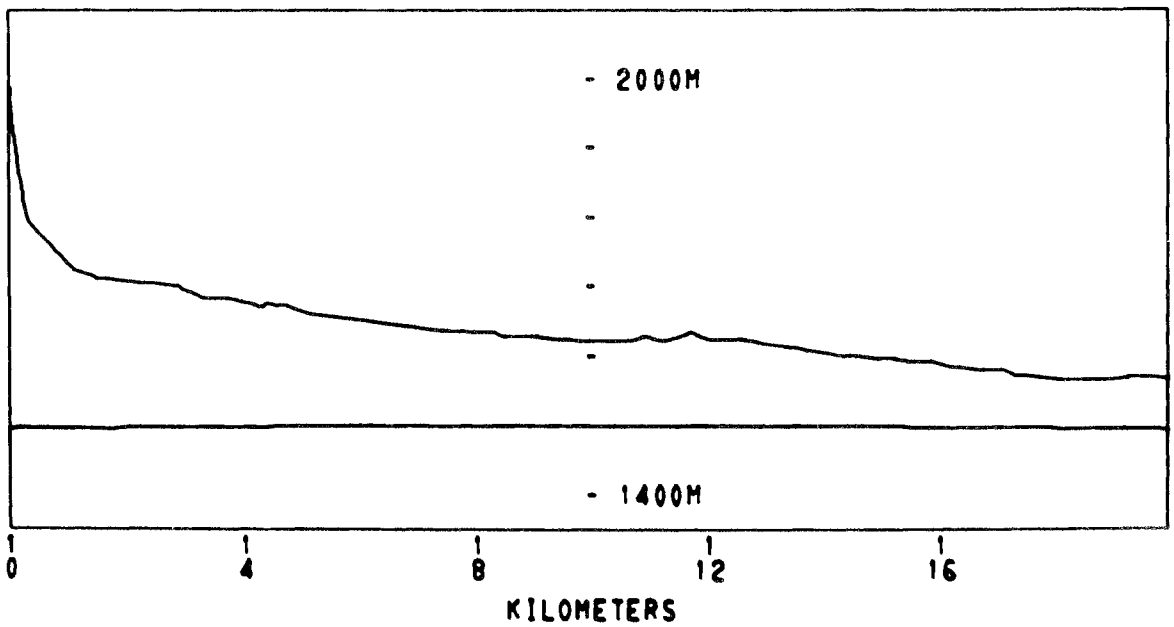
R3-20-T12
WESTERN HILLS SE1

PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is
80° 47' 00" T.


230 MHZ 9/15/66
410 MHZ
751 MHZ
910 MHZ 7/29/66
1846 MHZ
4595 MHZ
9190 MHZ
R3-20-T12
WESTERN HILLS SE1
Basic Transmission Loss in Decibels
90
100
110
120
130
140
150
160
0
2
4
6
8
10
12
14
16
18
Antenna Height Above Ground in Meters
Free Space Loss

RCVR. ELEV.	R3-20-T12	XMTR. ELEV.
1995 M	PATH LENGTH 19.89 km	1573 M

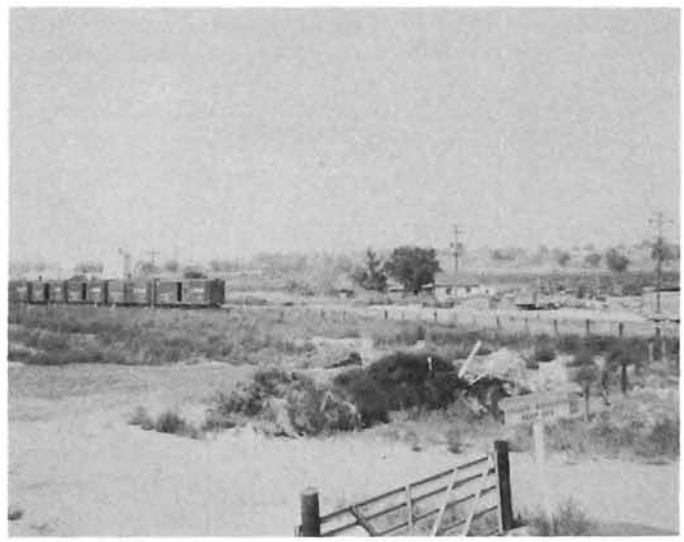


L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
	9-15-66 at 15 M				7-29-66 at 7.3 M		
50%	103.8	106.8	115.9	118.9	125.1	131.8	137.5
Δ10%-90%	< 3	< 3	< 3	< 3	< 3	< 3	< 3

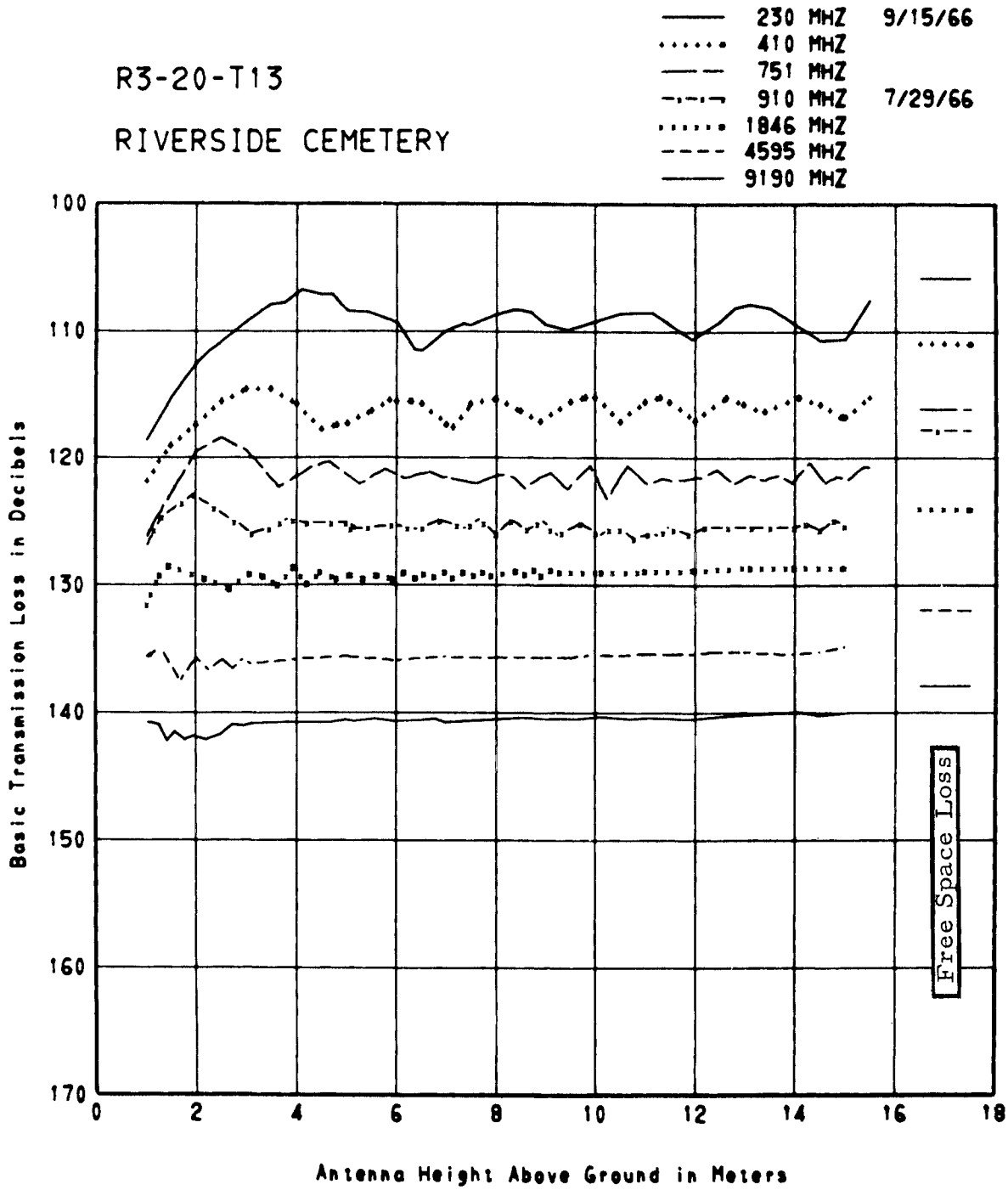
An irrigation ditch and a fence cross the path in the foreground. The next 30 m are covered with low, garden plants. The path then extends between two houses, over a power line, and over 8-m high trees. The power line crosses at 80 m.

R3-20-T13
RIVERSIDE CEMETERY

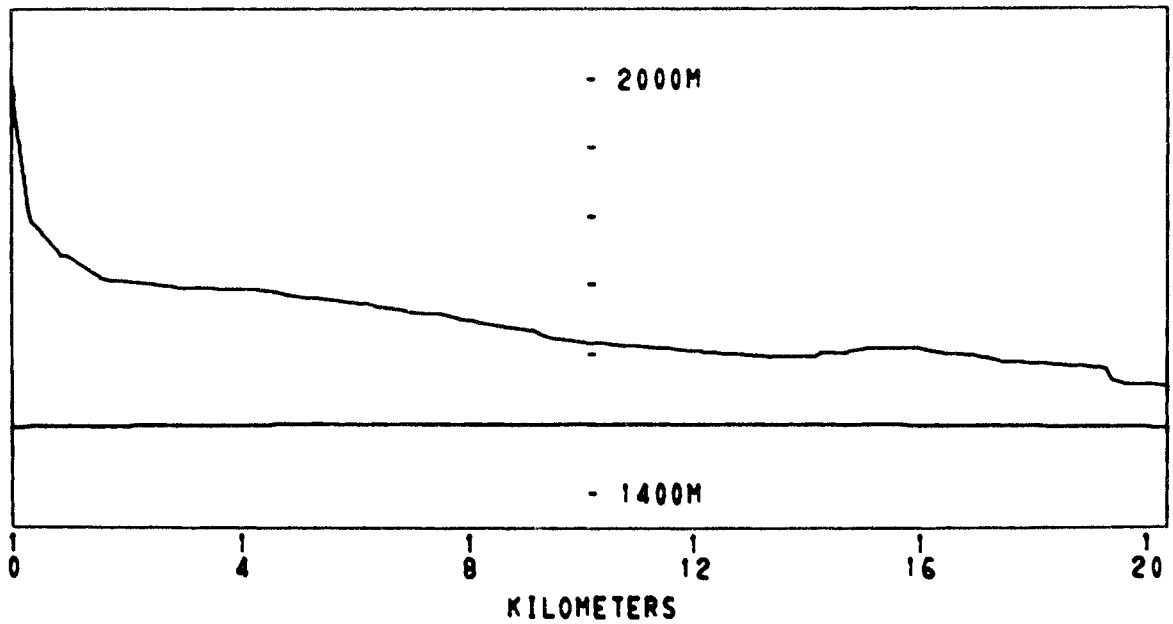


PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is
87° 42' 19" T.


R3-20-T13
RIVERSIDE CEMETERY
230 MHZ 9/15/66
410 MHZ
751 MHZ
910 MHZ 7/29/66
1846 MHZ
4595 MHZ
9190 MHZ
Basic Transmission Loss in Decibels
100
110
120
130
140
150
160
170
0
2
4
6
8
10
12
14
16
18
Antenna Height Above Ground in Meters
Free Space Loss

RCVR. ELEV.	R3-20-T13	XMTR. ELEV.
1995 M	PATH LENGTH 20.34 km	1558 M



L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
	9-15-66 at 15 M				7-29-66 at 7.3 M		
50%	107.5	112.2	120.9	126.3	128.4	134.9	140.3
Δ10%-90%	< 3	< 3	< 3	< 3	< 3	< 3	< 3

The site is located near a packing plant. The path has the following obstructions: at 10 m, a metal gate; at 25 m, a large pile of wire; railroad tracks and a power line at 30 m; at 45 m, a small building with trees on either side; 100-m high trees; a building at 150 m; and, an antenna (aircraft array) at 175 m.

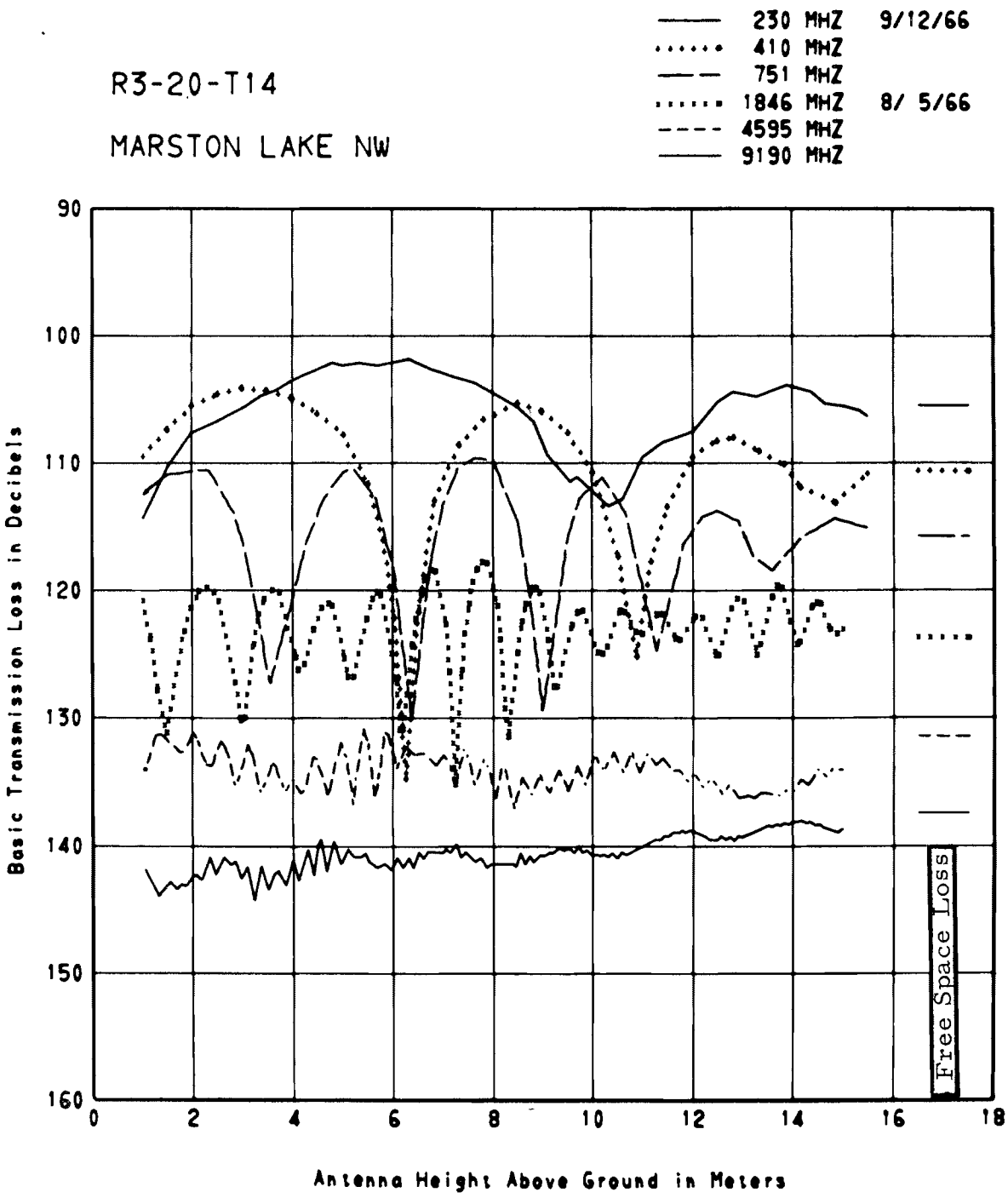
R3-20-T14
MARSTON LAKE NW

PATH VIEW FROM TRANSMITTER

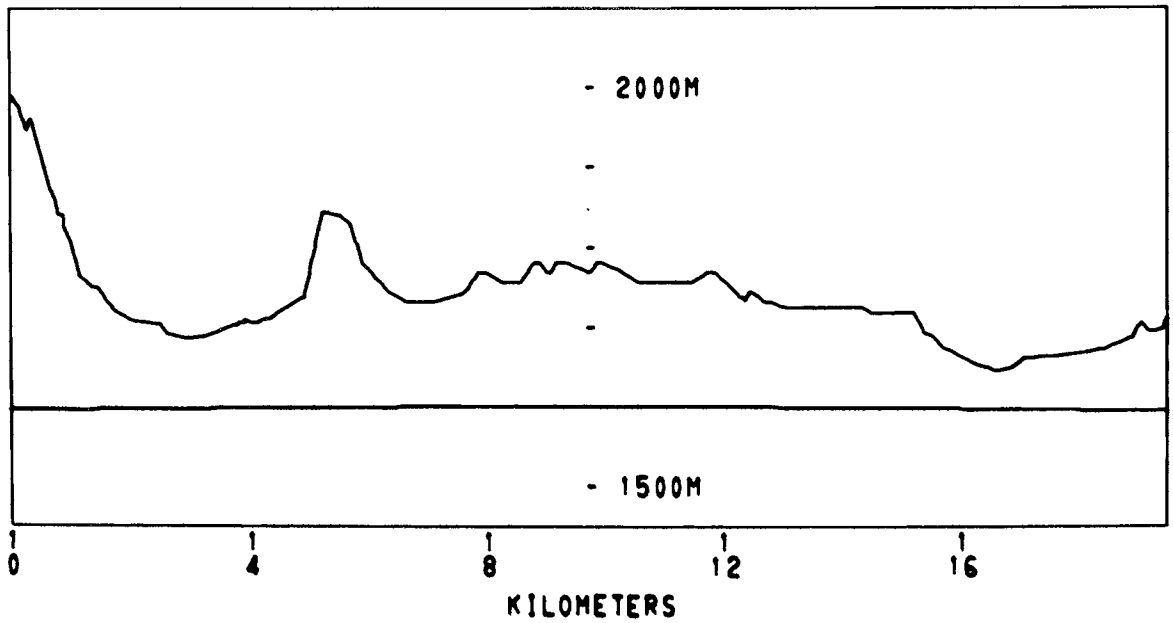
Bearing from common receiver site to transmitter site is 148° 31' 24" T.

R3-20-T14

MARSTON LAKE NW



RCVR. ELEV.	R3-20-T14	XMTR. ELEV.
1995 M	PATH LENGTH 19.44 km	1716 M



L_b (dB) SHORT TERM SIGNAL VARIABILITY

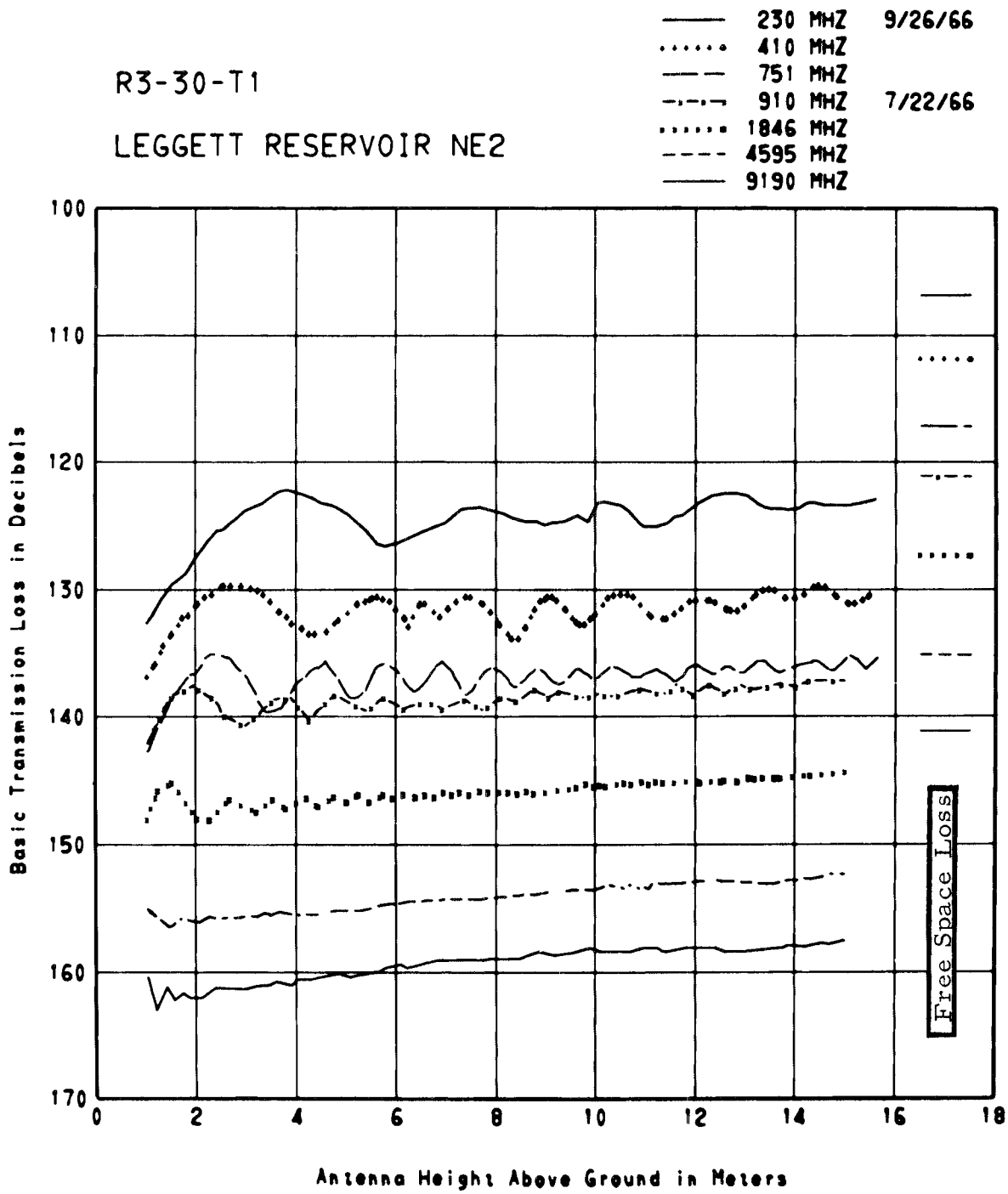
Freq(MHz)	230	410	751	910	1846	4595	9190
	9-12-66 at 15 M				8-5-66 at 15 M		
50%	106.6	110.2	115.1		121.3	133.9	141.9
Δ10%-90%	< 3	< 3	< 3		< 3	< 3	< 3
					8-5-66 at 7.3 M		
50%					125.3	134.7	140.9
Δ10%-90%					<3	< 3	< 3
					8-5-66 at 1 M		
50%					121.3	132.4	142.1
Δ10%-90%					< 3	< 3	< 3

The first 400 m of the path extend over plowed fields. Then, there is a water tower to the right of the path, and buildings and trees for the next 5 to 6 km.

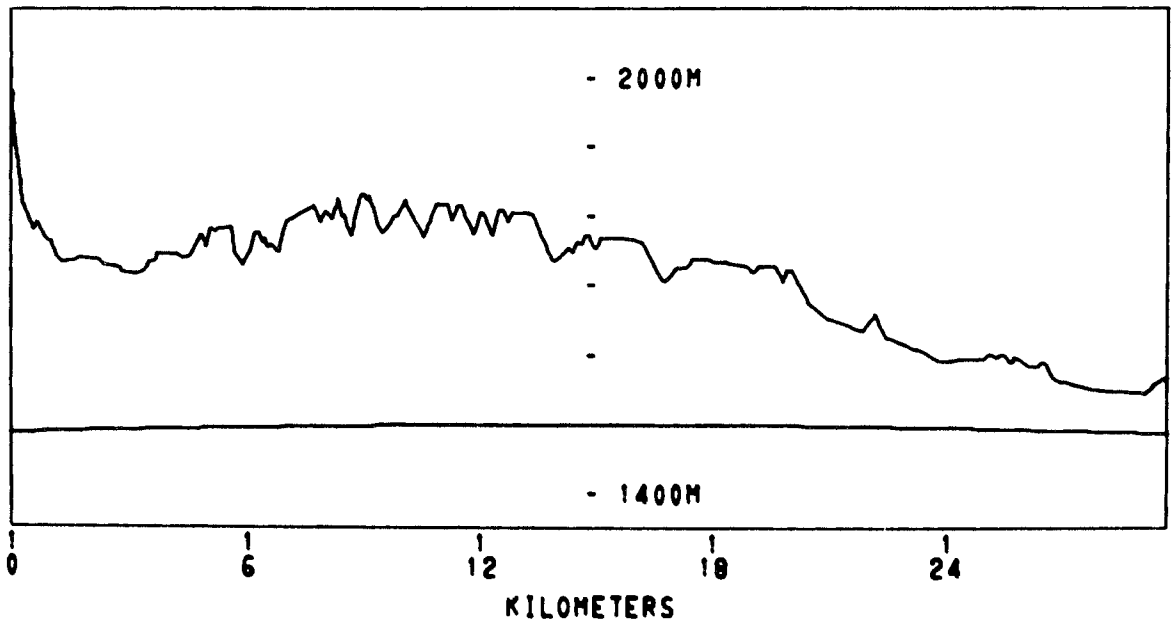
R3-30-T1
LEGGETT RESERVOIR NE2

PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is
03° 35' 26" T.


R3-30-T1
LEGGETT RESERVOIR NE2
230 MHZ 9/26/66
410 MHZ
751 MHZ
910 MHZ 7/22/66
1846 MHZ
4595 MHZ
9190 MHZ
Basic Transmission Loss in Decibels
100
110
120
130
140
150
160
170
0
2
4
6
8
10
12
14
16
18
Antenna Height Above Ground in Meters
Free Space Loss

RCVR. ELEV.	R3-30-T1	XMTR. ELEV.
1995 M	PATH LENGTH 29.64 km	1580 M

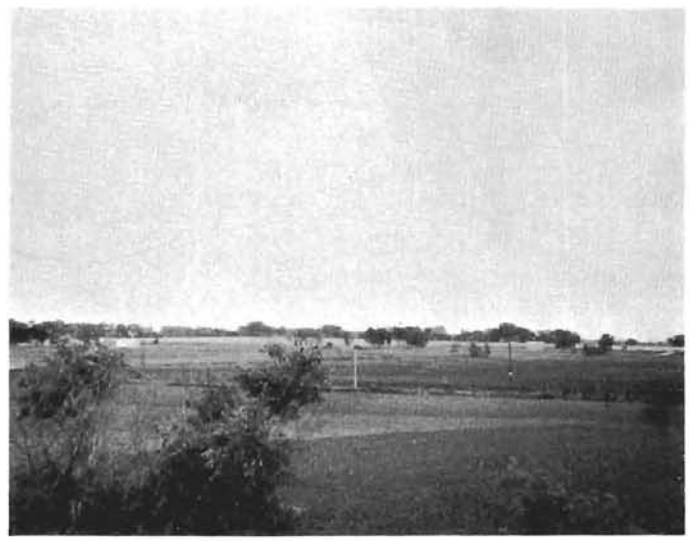


L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
	9-26-66 at 15 M				7-22-66 at 7.3 M		
50%	122.4	130.5	135.2	141.0	145.7	153.9	159.0
Δ10%-90%	< 3	< 3	< 3	< 3	< 3	< 3	< 3

The first 0.4 km of the path extends downhill to a row of 20-m high trees. The trees are below the radio horizon. A power line runs parallel to the path for 0.4 km and then angles to the right of the path.

R3-30-T2
EAST LAKE RESERVOIR N3



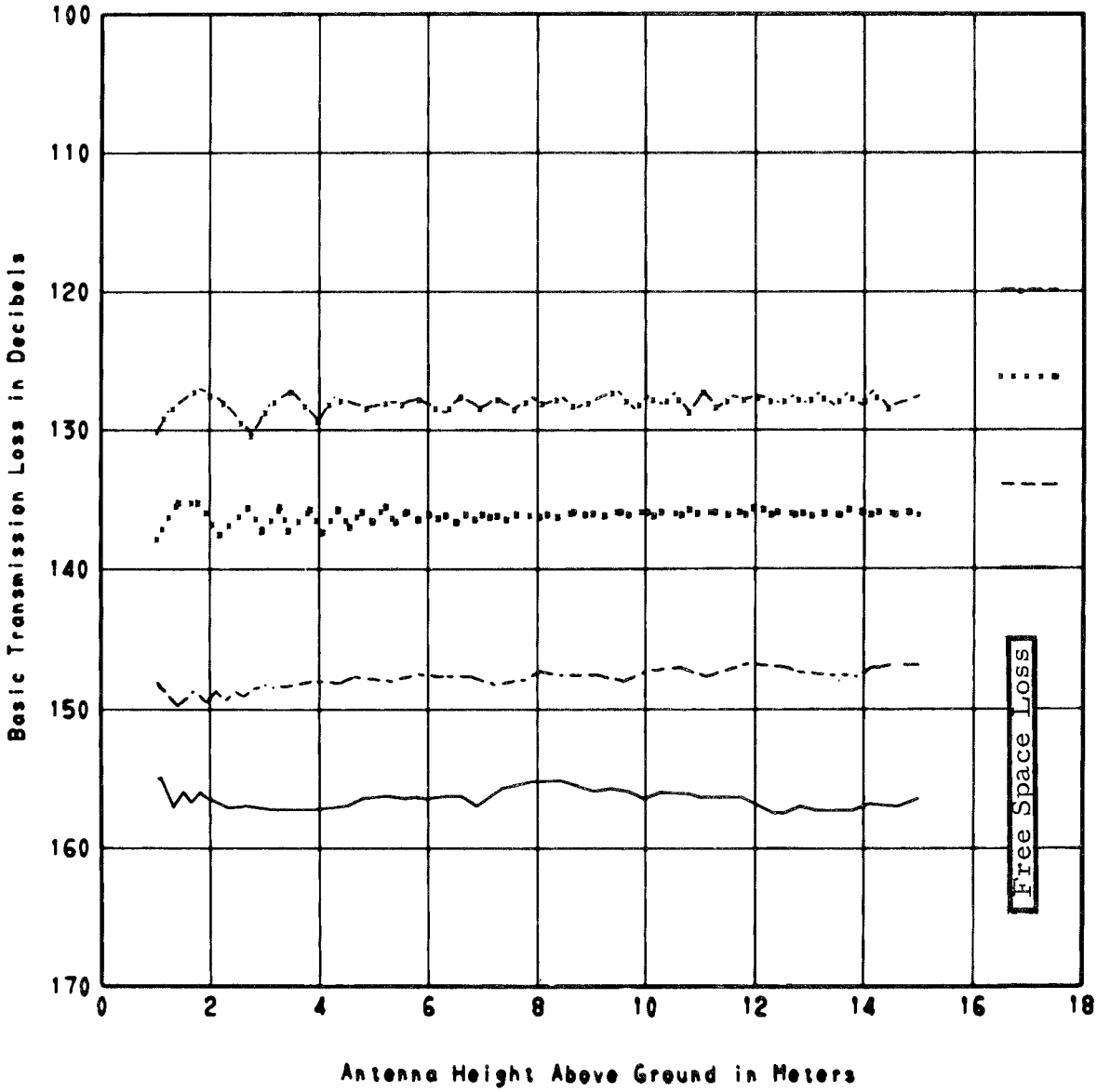
PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is
53^{o} 10' 17" T.

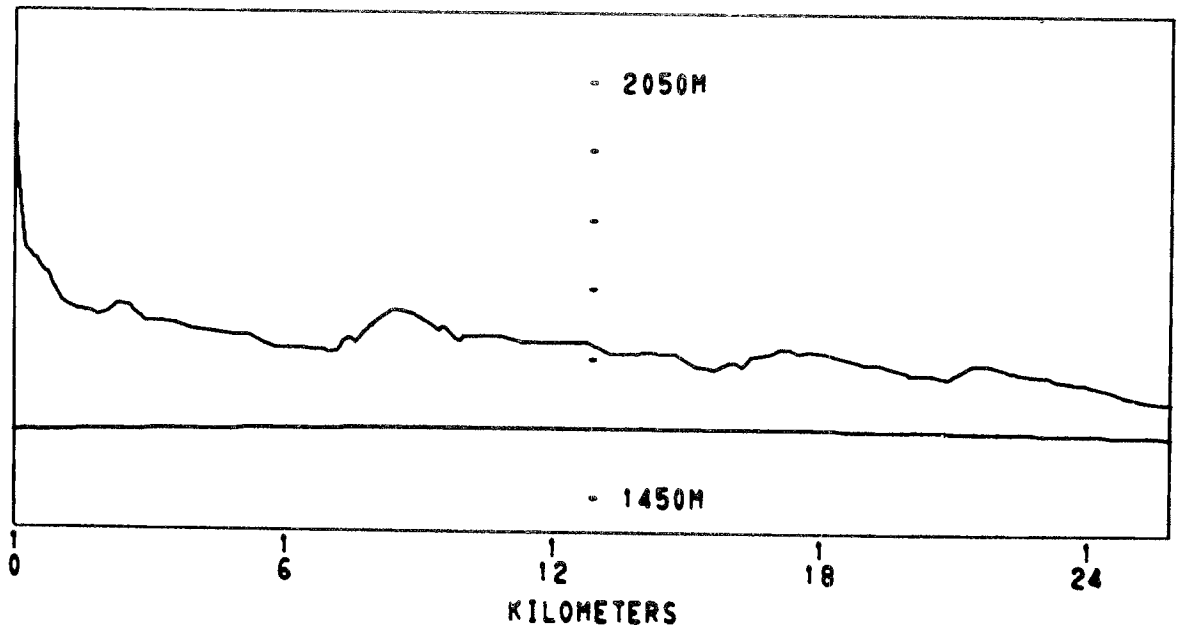
910 MHZ 8/ 1/66
1846 MHZ
4595 MHZ
9190 MHZ

R3-30-T2

EAST LAKE RESERVOIR N3



RCVR. ELEV.	R3-30-T2	XMTR. ELEV.
1995 M	PATH LENGTH 25.81 km	1600 M



L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
					8-1-66 at 15 M		
50%				127.4	135.5	146.4	155.8
Δ10%-90%				< 3	< 3	< 3	< 3
					8-1-66 at 7.3 M		
50%				126.7	136.0	147.5	155.7
Δ10%-90%				< 3	< 3	< 3	< 3
					8-1-66 at 1 M		
50%				131.0	137.0	147.5	154.8
Δ10%-90%				< 3	< 3	< 3	< 3

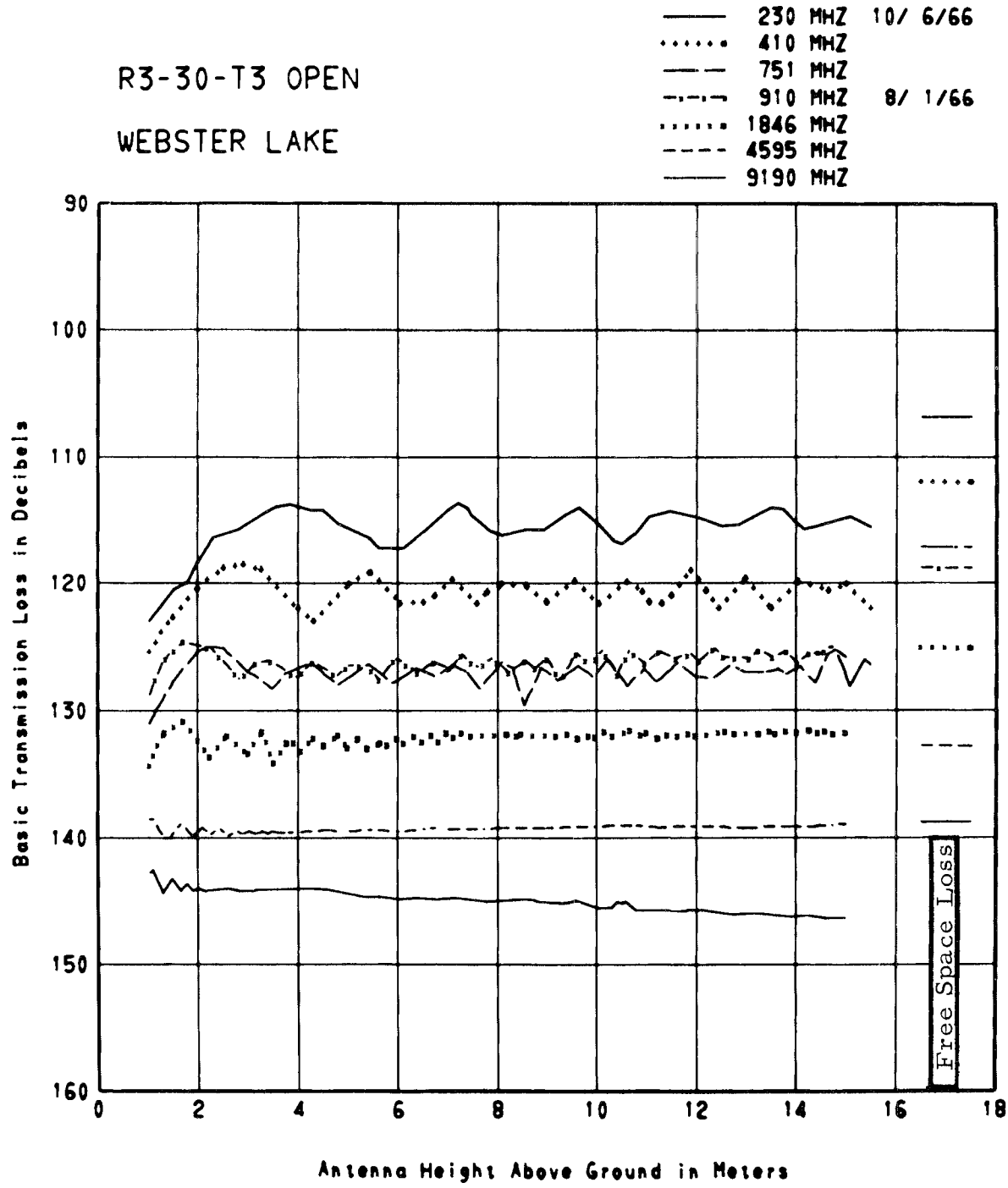
At 70 m, two fences, a power line, and a road cross the path. The next 110 m is pasture land. A road, a power line, and two fences then cross the path. After another 100 m, there are several small, wooden buildings. A row of 10-m high trees crosses the path at the horizon.

R3-30-T3 OPEN AND CONCEALED
WEBSTER LAKE

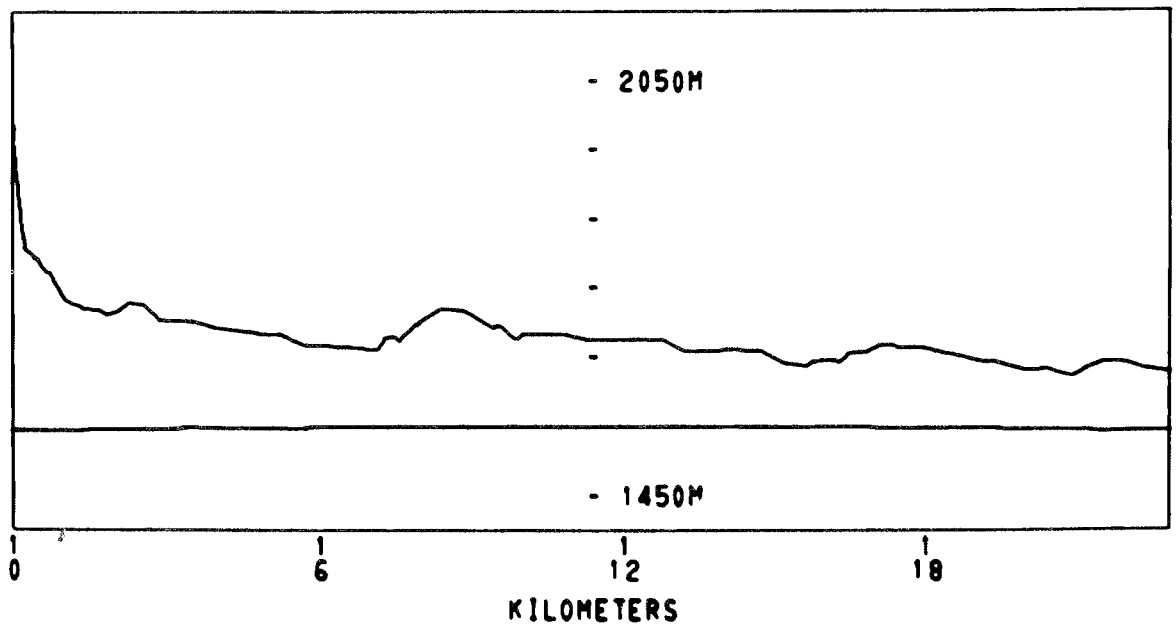
PATH VIEW FROM OPEN SITE
Bearing from common receiver site to transmitter site is
53° 12' 48" T.

PATH VIEW FROM CONCEALED SITE

Bearing from common receiver site to transmitter site is
53° 14' 40" T.


R3-30-T3 OPEN
WEBSTER LAKE
230 MHZ 10/ 6/66
410 MHZ
751 MHZ
910 MHZ 8/ 1/66
1846 MHZ
4595 MHZ
9190 MHZ
Free Space Loss
Basic Transmission Loss in Decibels
Antenna Height Above Ground in Meters
90
100
110
120
130
140
150
160
0
2
4
6
8
10
12
14
16
18

RCVR. ELEV.	R3-30-T3 OPEN	XMTR. ELEV.
1995 M	PATH LENGTH 22.76 km	1635 M



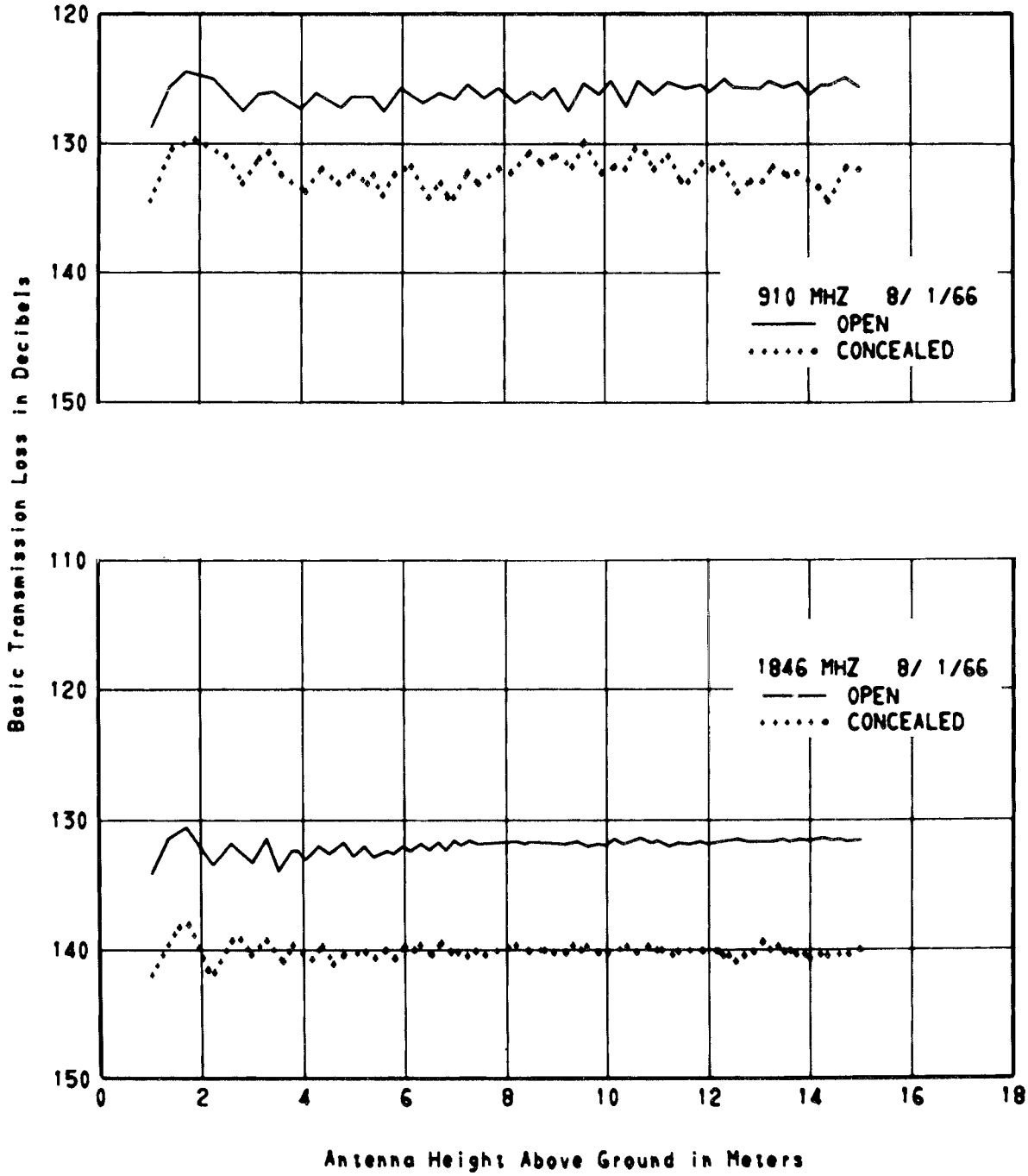
L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
	10-6-66 at 15 M				8-1-66 at 7.3 M		
50%	114.5	120.5	130.0	125.1	133.7	141.3	144.2
Δ10%-90%	< 3	< 3	< 3	< 3	< 3	< 3	< 3

The path crosses a road, a 4-wire fence, and a 2-wire power line at the end of a row of trees. At 350 m, it crosses another fence, a 3-wire power line, and a 4-lane highway. There are power lines and a phone line on the far side of the highway. A wheat field and low grassland with sparsely scattered trees extend for the next 0.4 km.

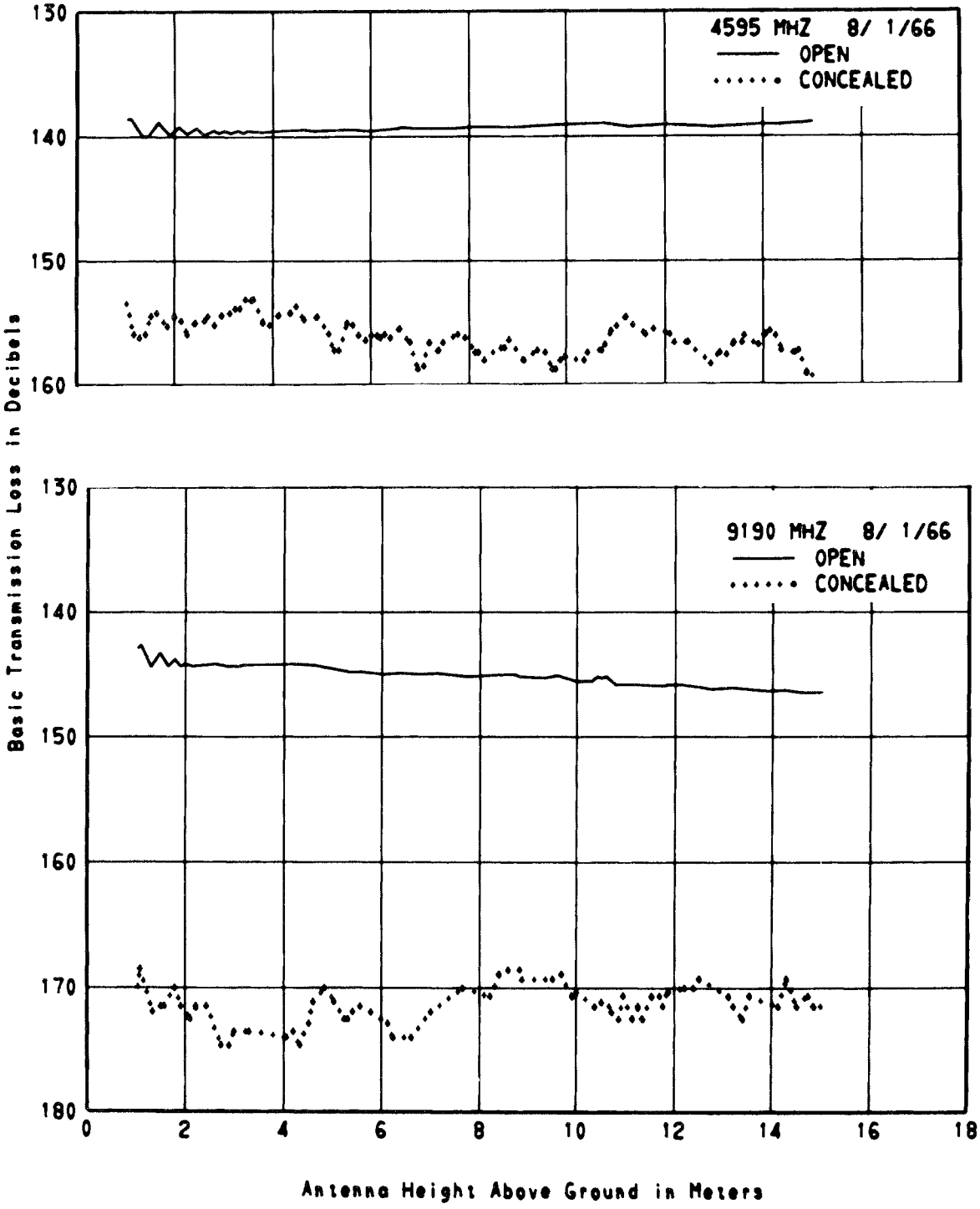
R3-30-T3 O&C

WEBSTER LAKE



R3-30-T3 O&C

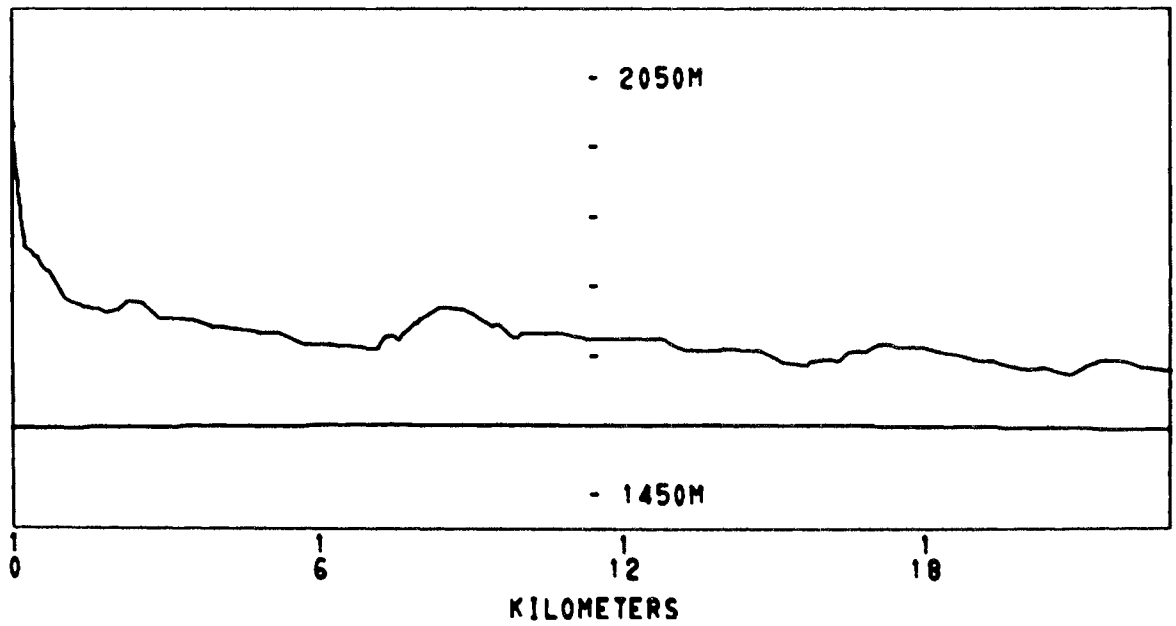
WEBSTER LAKE



RCVR. ELEV.
1995 M

R3-30-T3 CONCEALED
PATH LENGTH 22.82 km

XMTR. ELEV.
1636 M



L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
					8-1-66 at 15 M		
50%				142.7	139.4	154.4	170.9
Δ10%-90%				< 3	< 3	< 3	6.3
					8-1-66 at 7.3 M		
50%				146.5	139.9	154.8	168.5
Δ10%-90%				5.0	< 3	3.9	7.8
					8-1-66 at 1 M		
50%				146.3	141.1	156.0	167.4
Δ10%-90%				4.4	< 3	7.5	6.1

The site is located in a ditch. A 4-wire fence and a 2-wire power line are 3 m behind the van. In front of the van is a hedge, 4-m high, followed by another hedge, 12-m high.

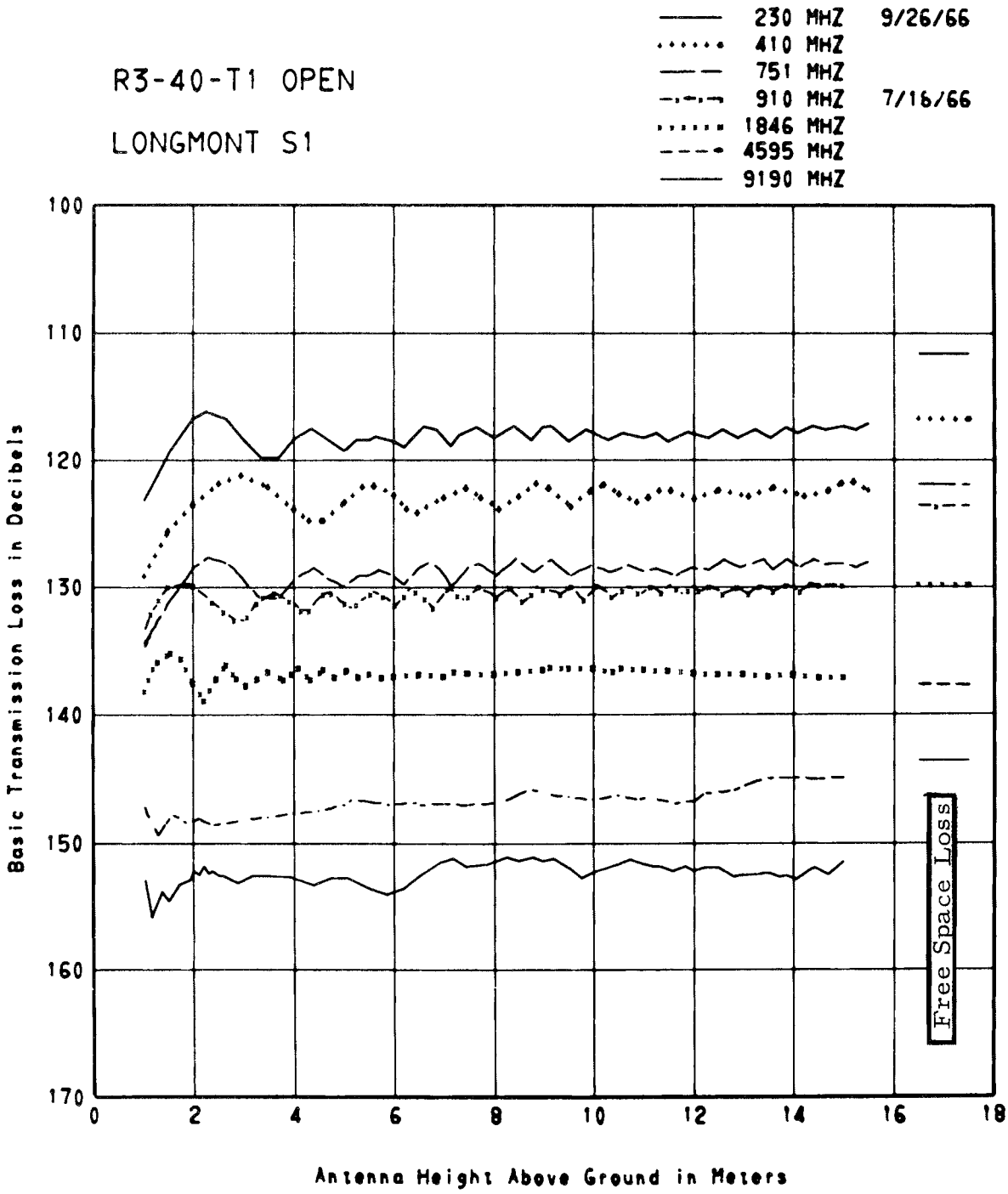
R3-40-T1 OPEN AND CONCEALED
LONGMONT S1

PATH VIEW FROM OPEN SITE

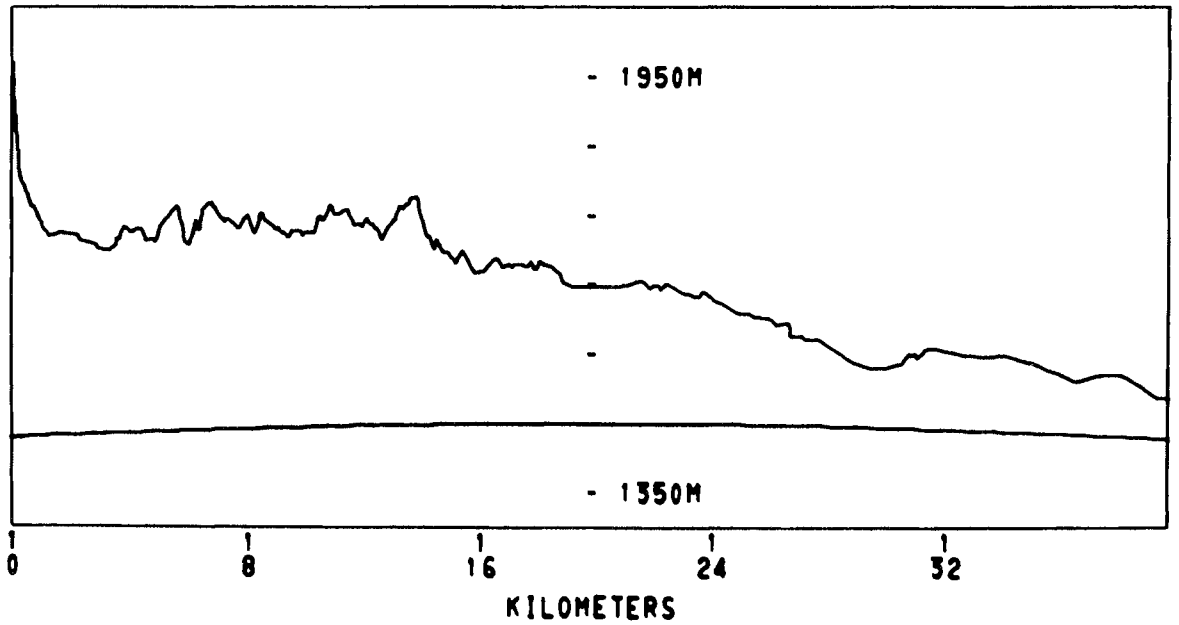
Bearing from common receiver site to transmitter site is
13° 20' 59" T.

PATH VIEW FROM CONCEALED SITE

Bearing from common receiver site to transmitter site is
13° 25' 54" T.


R3-40-T1 OPEN
LONGMONT S1
230 MHZ 9/26/66
410 MHZ
751 MHZ
910 MHZ 7/16/66
1846 MHZ
4595 MHZ
9190 MHZ
Basic Transmission Loss in Decibels
100
110
120
130
140
150
160
170
0
2
4
6
8
10
12
14
16
18
Antenna Height Above Ground in Meters
Free Space Loss

RCVR. ELEV.	R3-40-T1 OPEN	XMTR. ELEV.
1995 M	PATH LENGTH 39.59 km	1509 M



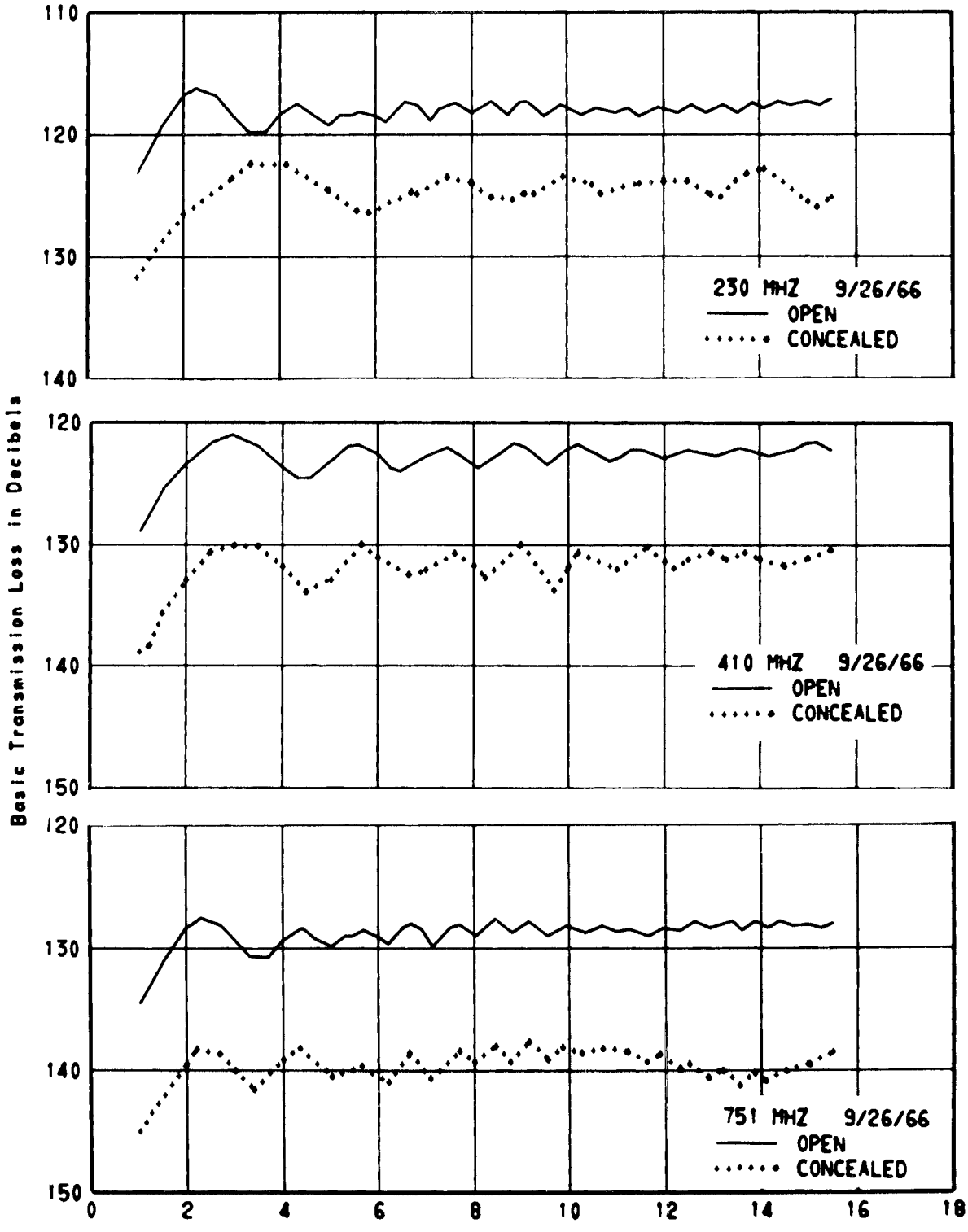
L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
	9-26-66 at 15 M				7-18-66 at 15 M		
50%	116.5	121.9	127.7	130.4	136.4	144.6	151.4
Δ10%-90%	< 3	< 3	< 3	< 3	< 3	< 3	< 3
					7-18-66 at 7.3 M		
50%				130.9	136.4	146.0	152.1
Δ10%-90%				< 3	< 3	< 3	< 3
					7-18-66 at 1 M		
50%				130.9	136.4	146.1	155.9
Δ10%-90%				< 3	< 3	< 3	< 3

The site is on the north bank of the St. Vrain River. The path crosses a stream at 30 m, and fences at 100 m, 250 m, and 500 m. At 500 m the terrain changes from pasture land to cornfield. The cornfield extends for 0.8 km. There are a few scattered trees at 1 km and at 3 km.

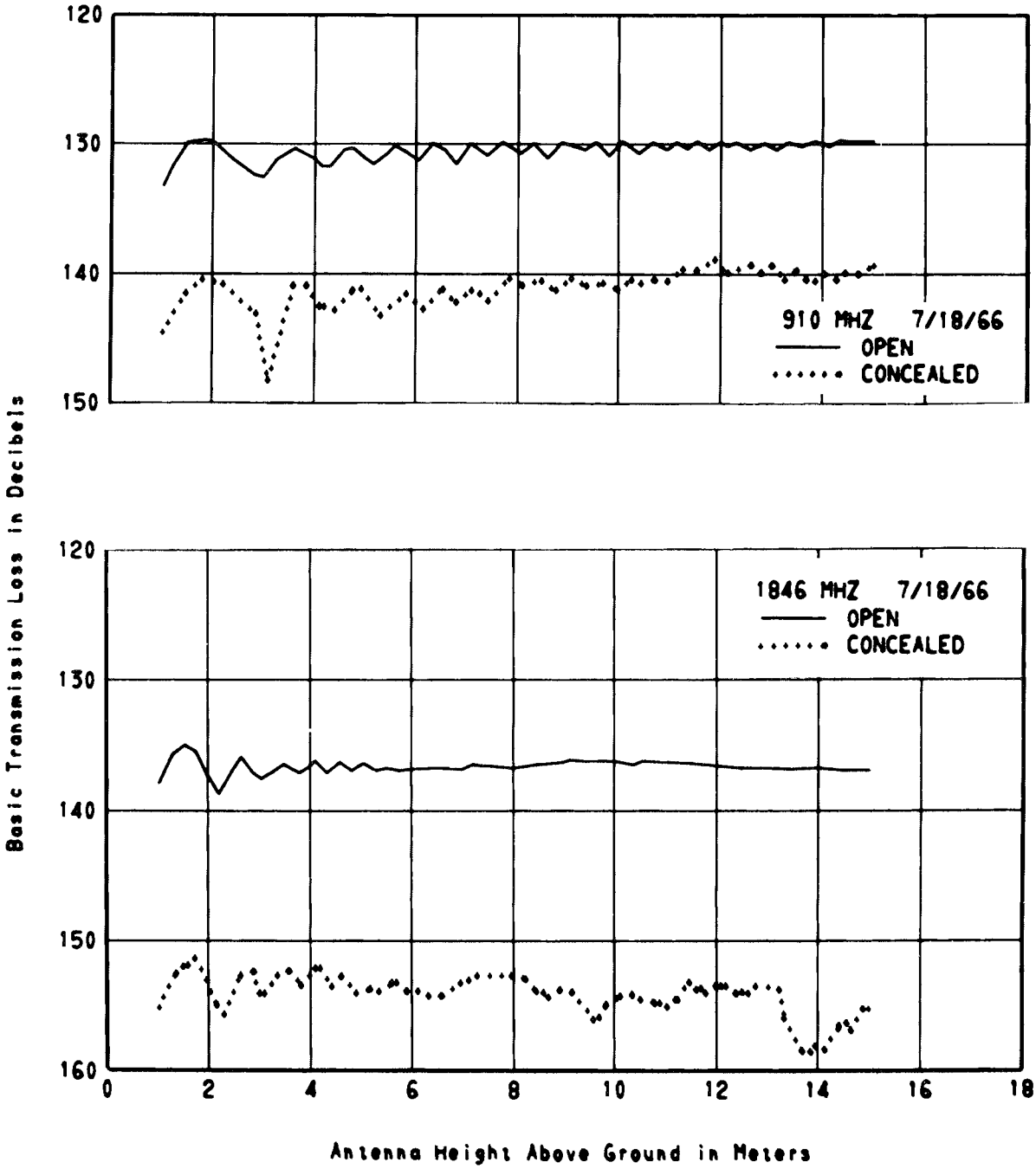
R3-40-T1 O&C

LONGMONT S1



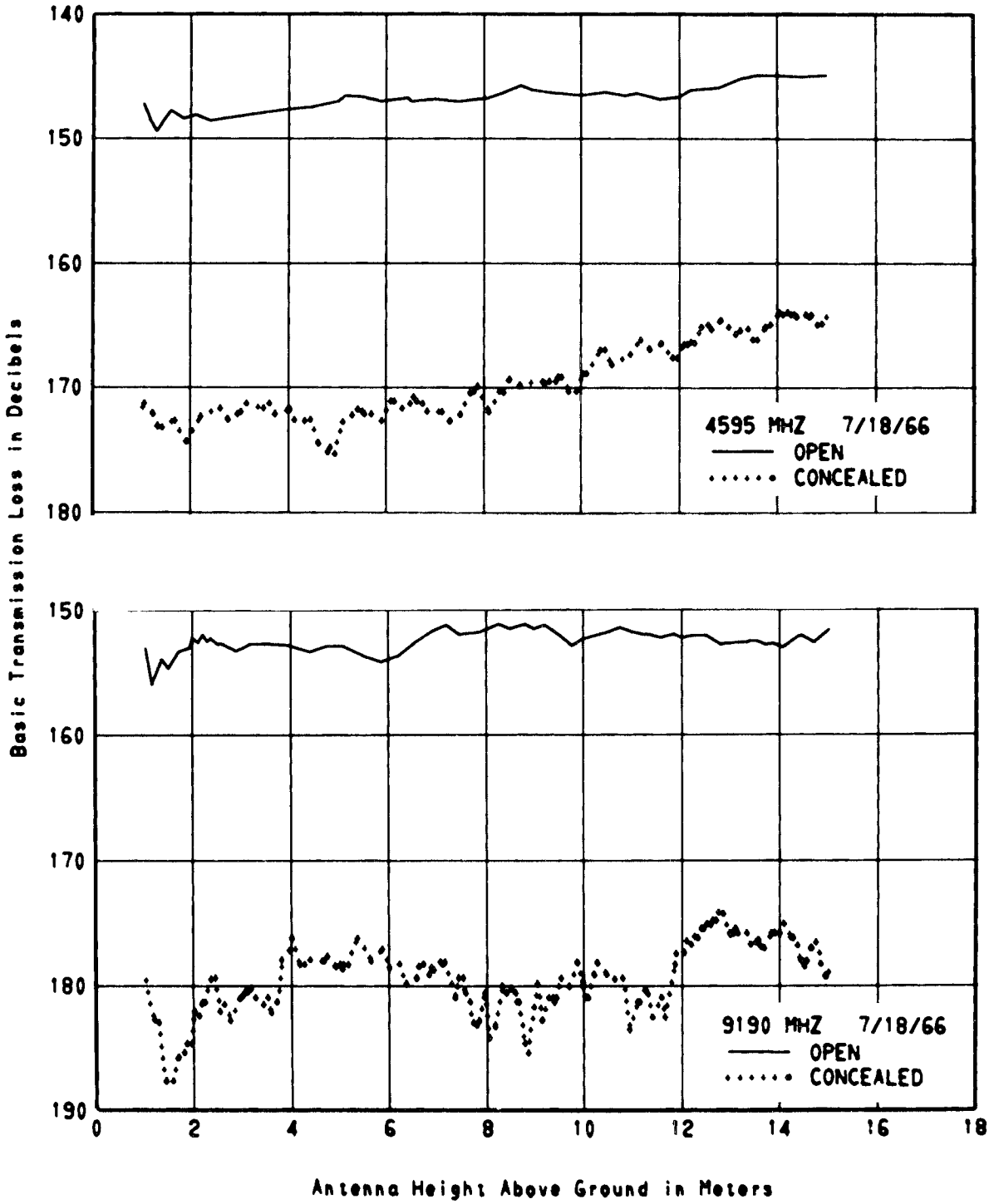
R3-40-T1 O&C

LONGMONT S1

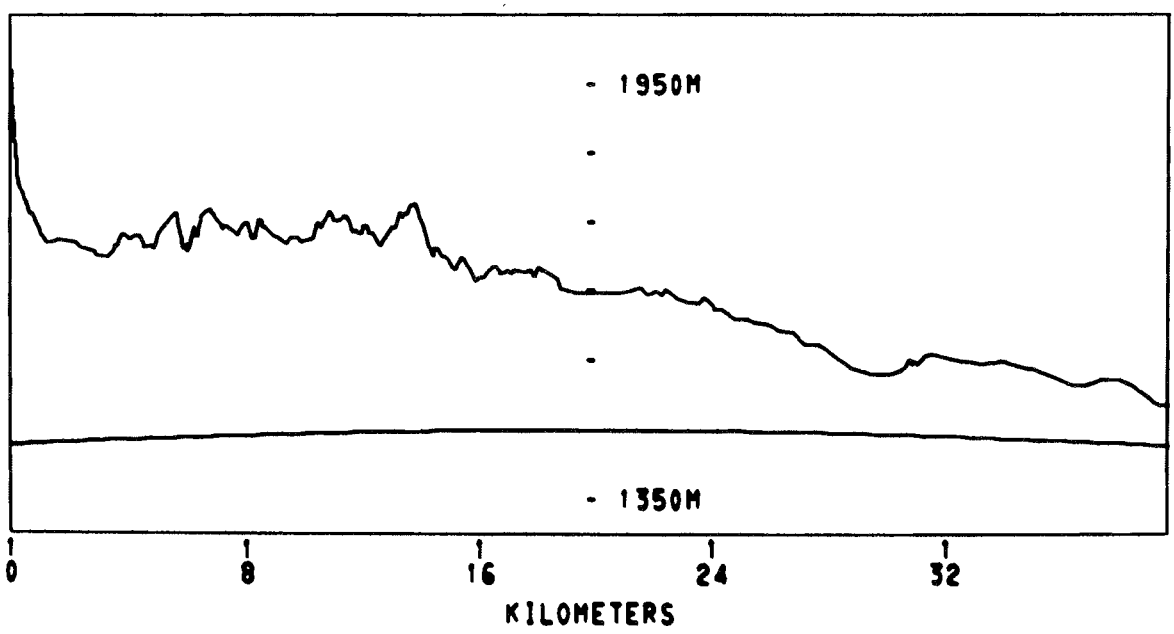


R3-40-T1 O&C

LONGMONT S1



RCVR. ELEV.	R3-40-T1 CONCEALED	XMTR. ELEV.
1995 M	PATH LENGTH 39.56 km	1509 M

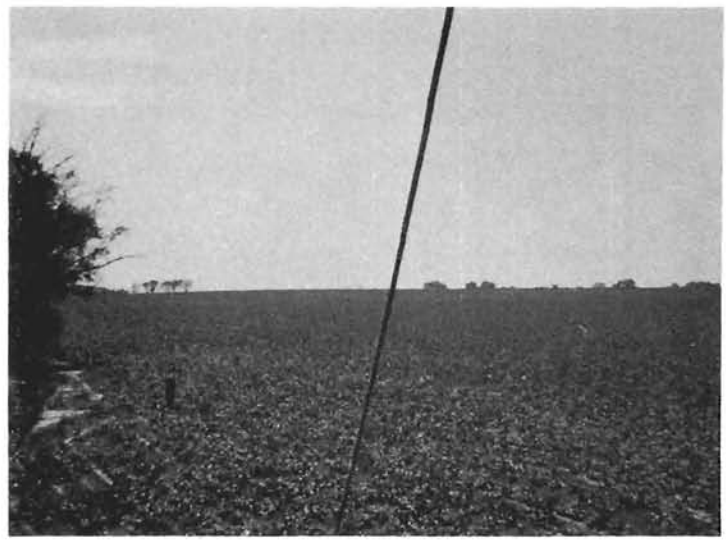


L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
	9-26-66 at 15 M				7-18-66 at 15 M		
50%	126.5	129.6	137.5	141.9	156.5	166.4	178.3
Δ10%-90%	< 3	< 3	< 3	< 3	4.9	3.1	7.6
					7-18-66 at 7.3 M		
50%				142.4	155.0	167.3	181.0
Δ10%-90%				< 3	3.5	3.3	9.0
					7-18-66 at 1 M		
50%				146.7	155.5	168.9	179.7
Δ10%-90%				3.1	4.0	4.1	8.4

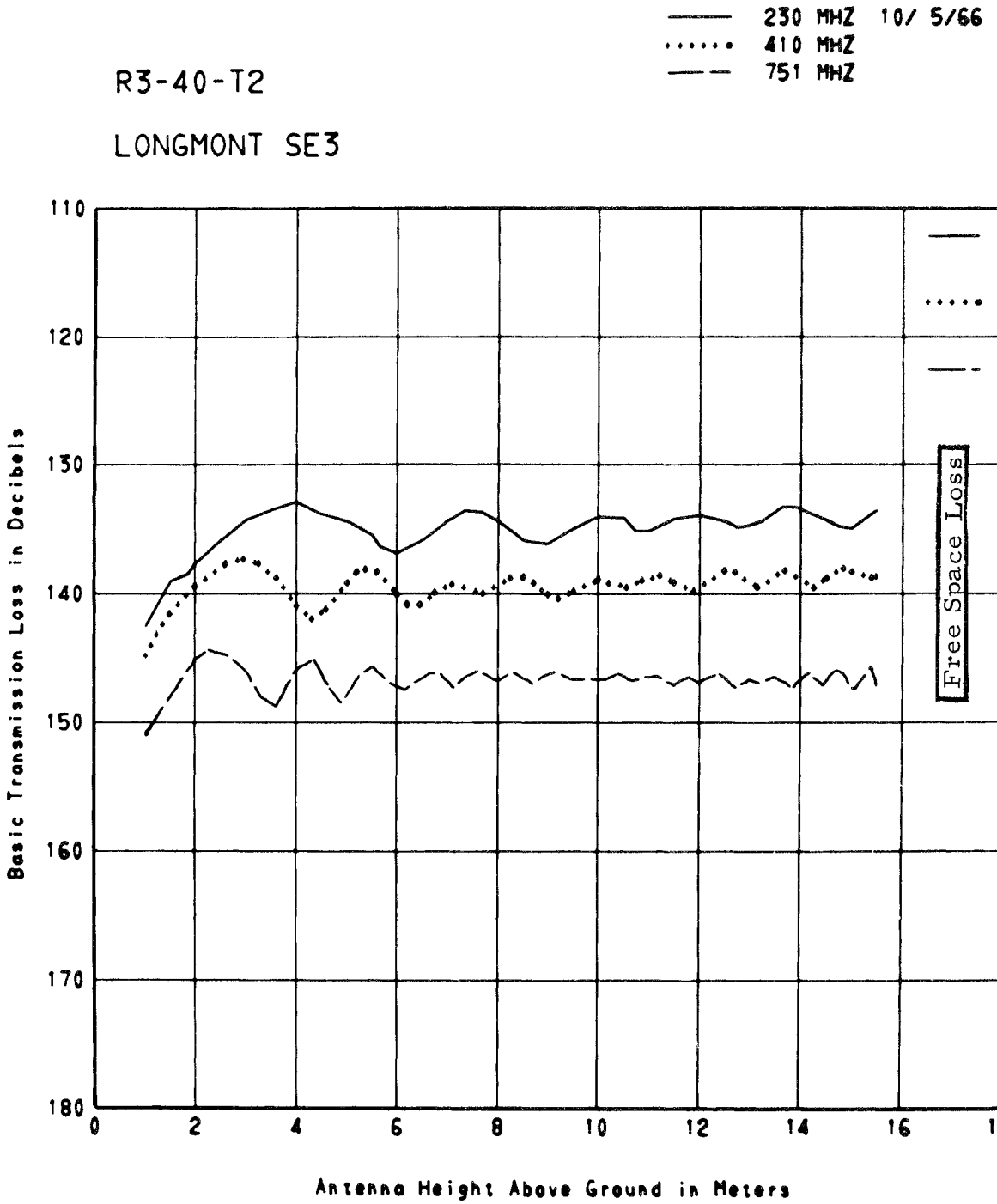
The beginning of the path is concealed by 20-m high trees. The remainder of the path is essentially identical to R3-40-T1 OPEN.

R3-40-T2
LONGMONT SE3

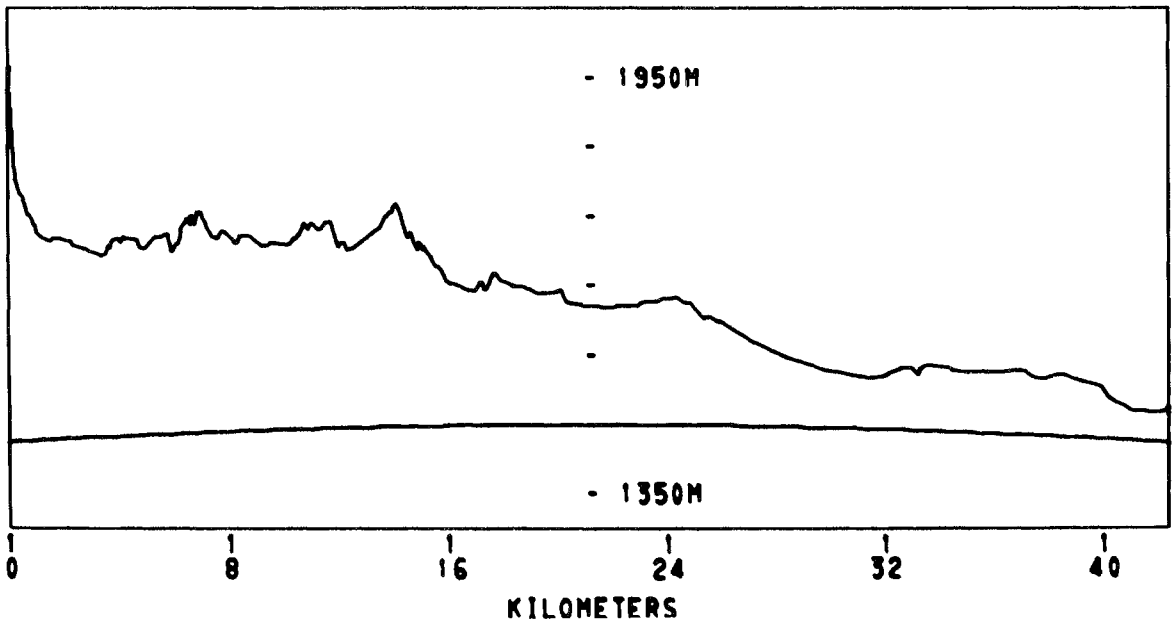


PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is
16° 53' 08" T.


230 MHZ 10/ 5/66
410 MHZ
751 MHZ
R3-40-T2
LONGMONT SE3
Basic Transmission Loss in Decibels
110
120
130
140
150
160
170
180
0
2
4
6
8
10
12
14
16
18
Antenna Height Above Ground in Meters
Free Space Loss

RCVR. ELEV.	R3-40-T2	XMTR. ELEV.
1995 M	PATH LENGTH 42.33 km	1501 M



L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
	10-5-66 at 15 M						
50%	132.9	138.2	147.4				
Δ10%-90%	< 3	< 3	< 3				

The path extends over sugar-beet fields to the horizon. There are 20-m high trees, 70 m to the south, and a high ridge, 0.8 km to the south.

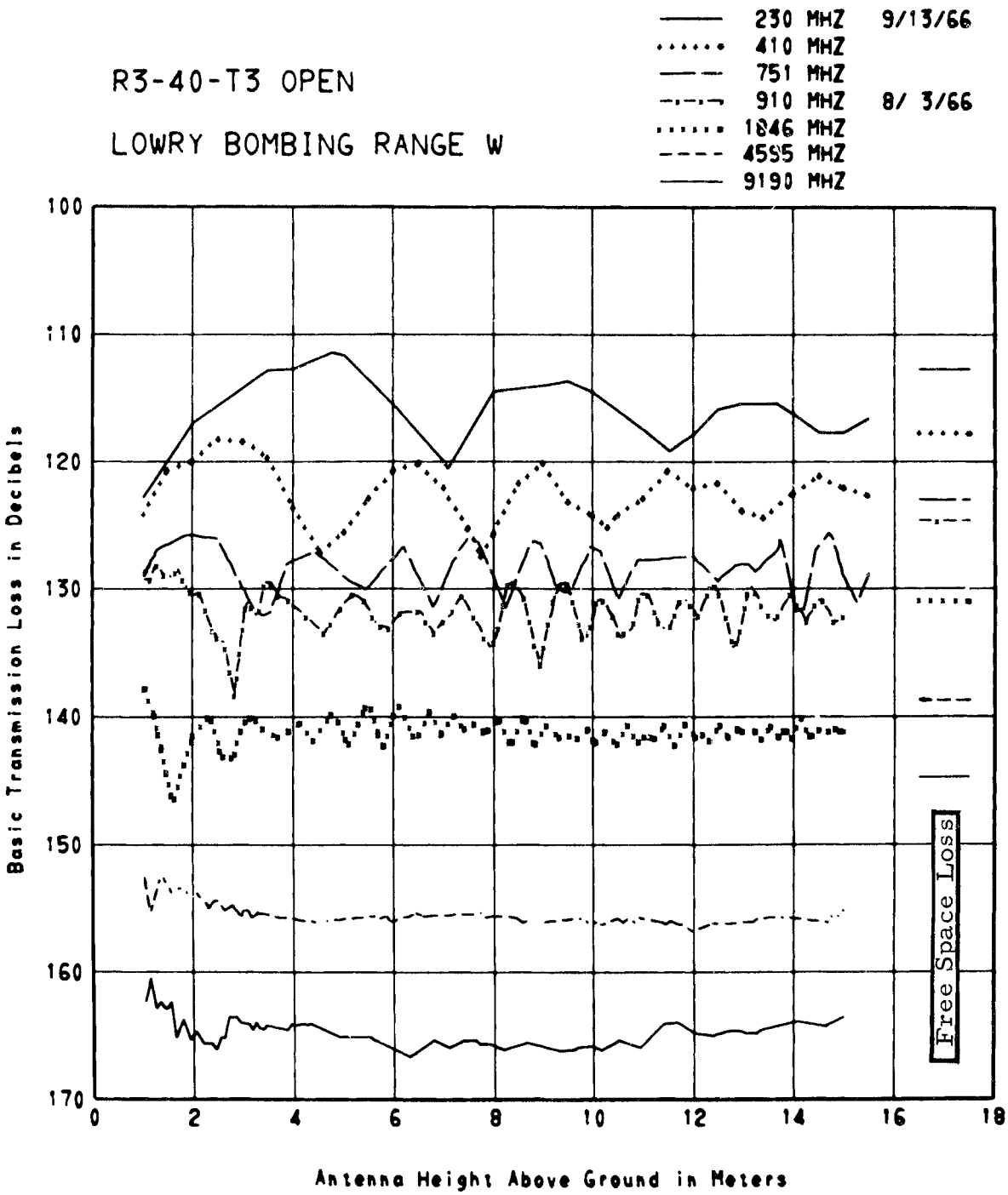
R3-40-T3 OPEN AND CONCEALED
LOWRY BOMBING RANGE W

PATH VIEW FROM OPEN SITE

Bearing from common receiver site to transmitter site is
119° 11' 34" T.

PATH VIEW FROM CONCEALED SITE

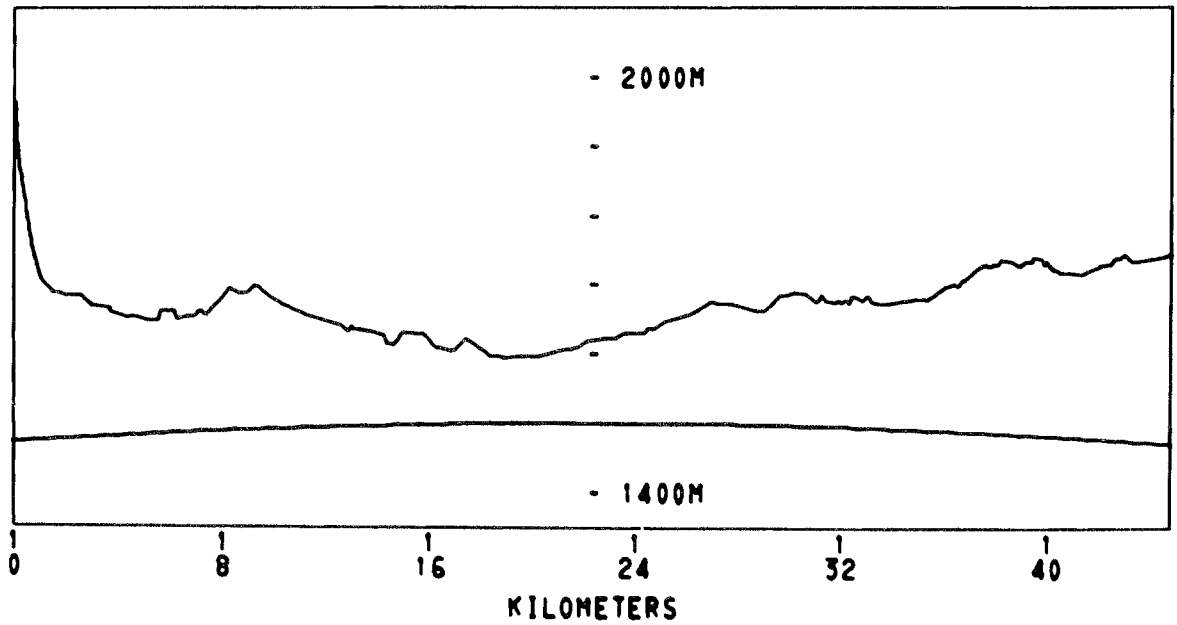
Bearing from common receiver site to transmitter site is
119° 16' 32" T.


230 MHZ 9/13/66
410 MHZ
751 MHZ
910 MHZ 8/ 3/66
1846 MHZ
4595 MHZ
9190 MHZ
R3-40-T3 OPEN
LOWRY BOMBING RANGE W
Basic Transmission Loss in Decibels
Antenna Height Above Ground in Meters
Free Space Loss
100
110
120
130
140
150
160
170
0
2
4
6
8
10
12
14
16
18

RCVR. ELEV. 1995 M

R3-40-T3 OPEN
PATH LENGTH 44.71 km

XMTR. ELEV. 1774 M



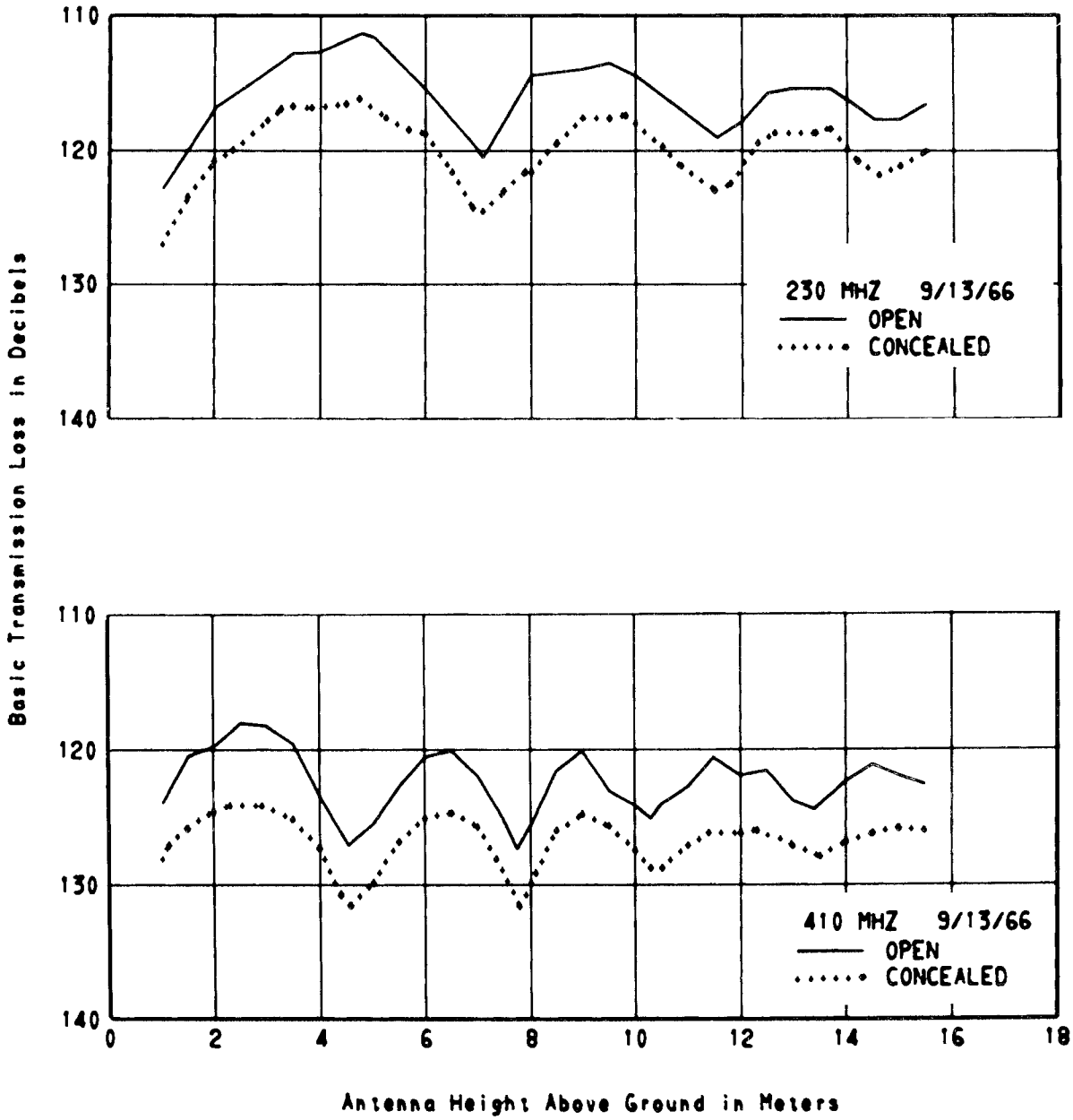
L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
	9-13-66 at 15 M				8-3-66 at 15 M		
50%	117.5	120.2	124.2	132.5	139.8	154.6	162.5
Δ10%-90%	< 3	< 3	< 3	< 3	< 3	< 3	< 3
					8-3-66 at 7.3 M		
50%				130.4	141.5	154.1	165.6
Δ10%-90%				< 3	< 3	< 3	< 3
					8-3-66 at 1 M		
50%				130.8	137.8	151.3	161.1
Δ10%-90%				< 3	< 3	< 3	< 3

The immediate foreground of the path is covered with grass. A 4-wire fence is close to the van. The path crosses an 8-m wide creek bed at 50 m. There are 10-m high trees at 0.4 km. The horizon is at the crest of a hill, approximately 2.4 km away.

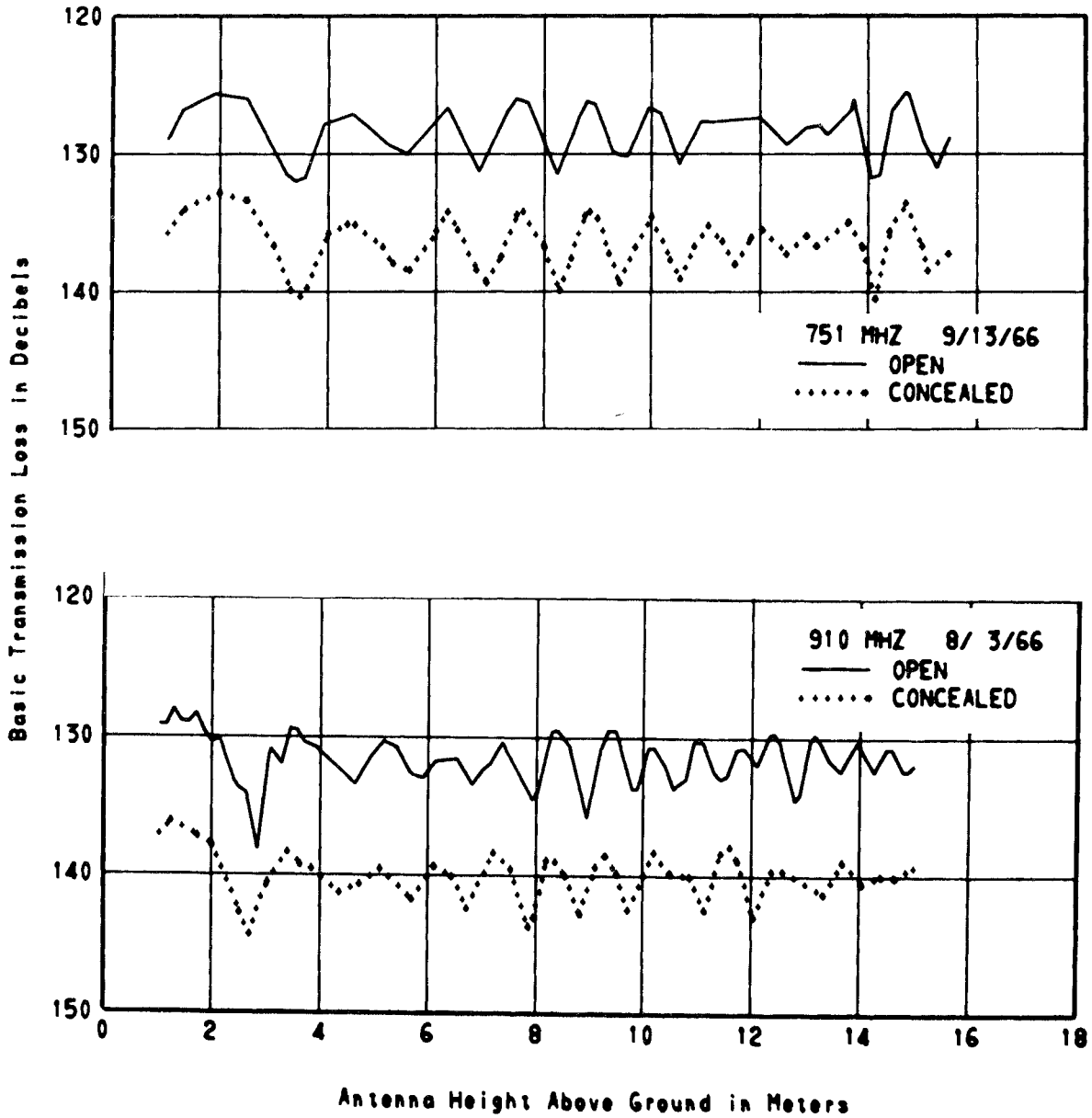
R3-40-T3 O&C

LOWRY BOMBING RANGE W



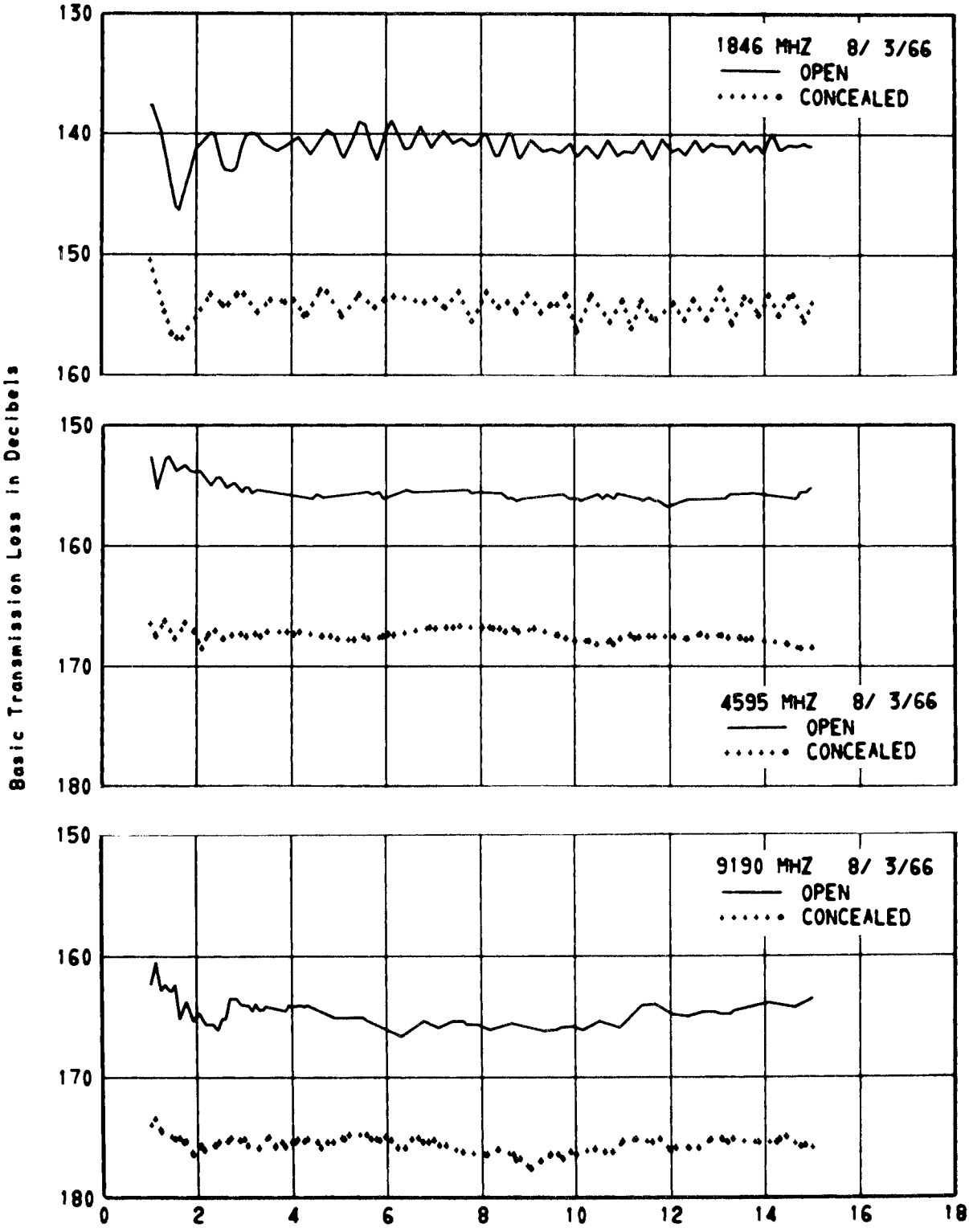
R3-40-T3 O&C

LOWRY BOMBING RANGE W

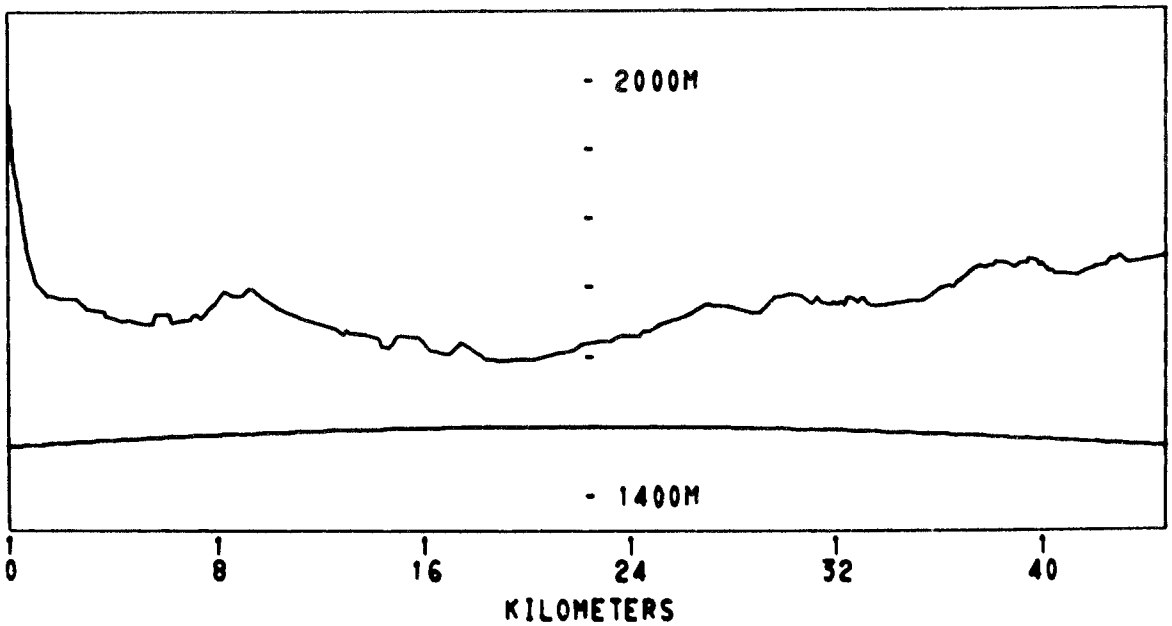


R3-40-T3 O&C

LOWRY BOMBING RANGE



RCVR. ELEV.	R3-40-T3 CONCEALED	XMTR. ELEV.
1995 M	PATH LENGTH 44.71 km	1774 M



L_b (dB) SHORT TERM SIGNAL VARIABILITY

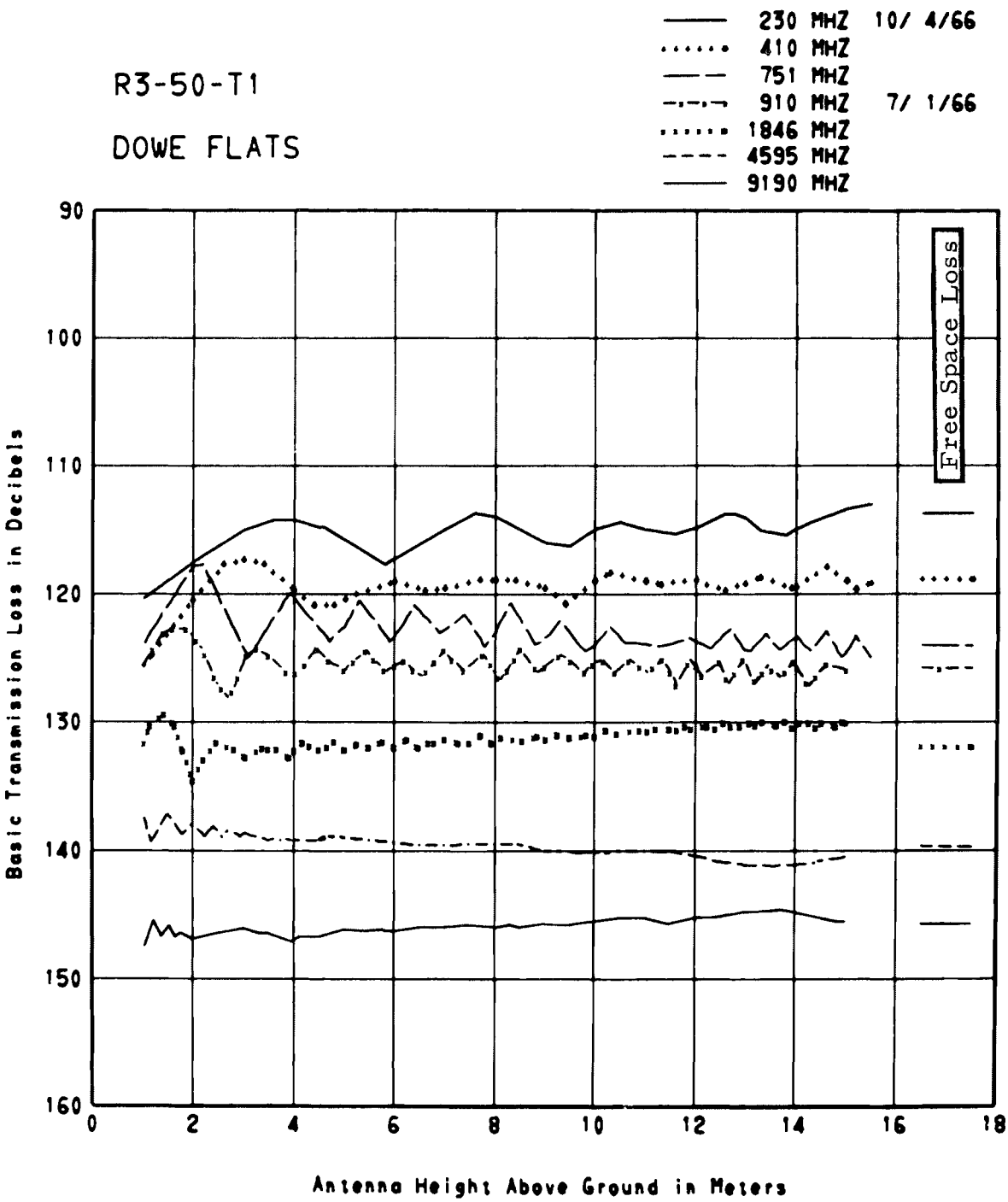
Freq(MHz)	230	410	751	910	1846	4595	9190
	9-13-66 at 15 M				8-3-66 at 15 M		
50%	120.5	125.3	136.2	139.5	152.0	168.2	176.8
Δ10%-90%	< 3	< 3	< 3	< 3	< 3	< 3	4.3
					8-3-66 at 7.3 M		
50%				138.0	152.5	166.8	177.6
Δ10%-90%				< 3	< 3	< 3	6.7
					8-3-66 at 1 M		
50%				138.8	151.3	165.3	175.6
Δ10%-90%				< 3	< 3	< 3	4.2

There are 10-12 m high trees at 10 m along the path. The rest of the path is essentially identical to R3-40-T3 OPEN.

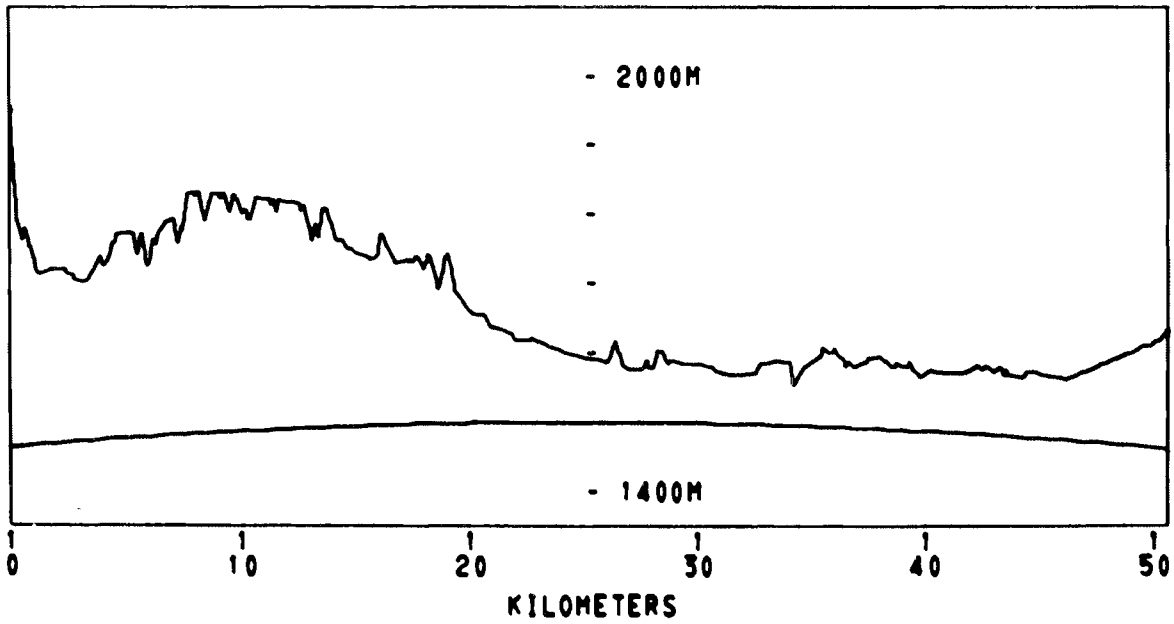
R3-50-T1
DOWE FLATS

PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is 177° 34' 15" T.


230 MHZ 10/ 4/66
410 MHZ
751 MHZ
910 MHZ 7/ 1/66
1846 MHZ
4595 MHZ
9190 MHZ
R3-50-T1
DOWE FLATS
Free Space Loss
Basic Transmission Loss in Decibels
Antenna Height Above Ground in Meters
90
100
110
120
130
140
150
160
0
2
4
6
8
10
12
14
16
18

RCVR. ELEV.	R3-50-T1	XMTR. ELEV.
1995 M	PATH LENGTH 50.57 km	1671 M



L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
	10-4-66 at 15 M				7-1-66 at 15 M		
50%	112.8	118.1	122.1	124.8	130.4	137.8	144.7
Δ10%-90%	< 3	< 3	< 3	< 3	< 3	< 3	< 3
					7-1-66 at 7.3 M		
50%				126.8	132.3	137.8	144.7
Δ10%-90%				< 3	< 3	< 3	< 3
					7-1-66 at 1 M		
50%				126.8	132.2	134.2	147.8
Δ10%-90%				< 3	< 3	< 3	< 3

The path extends over grassland. It crosses an irrigation ditch at 30 m. There is a power line below the level of the van at 400 m, and also a telephone line. At 1 km, there is a house, and at 2.3 km, a few scattered trees.

R3-50-T2
HIGHLAND NO. 2 RESERVOIR

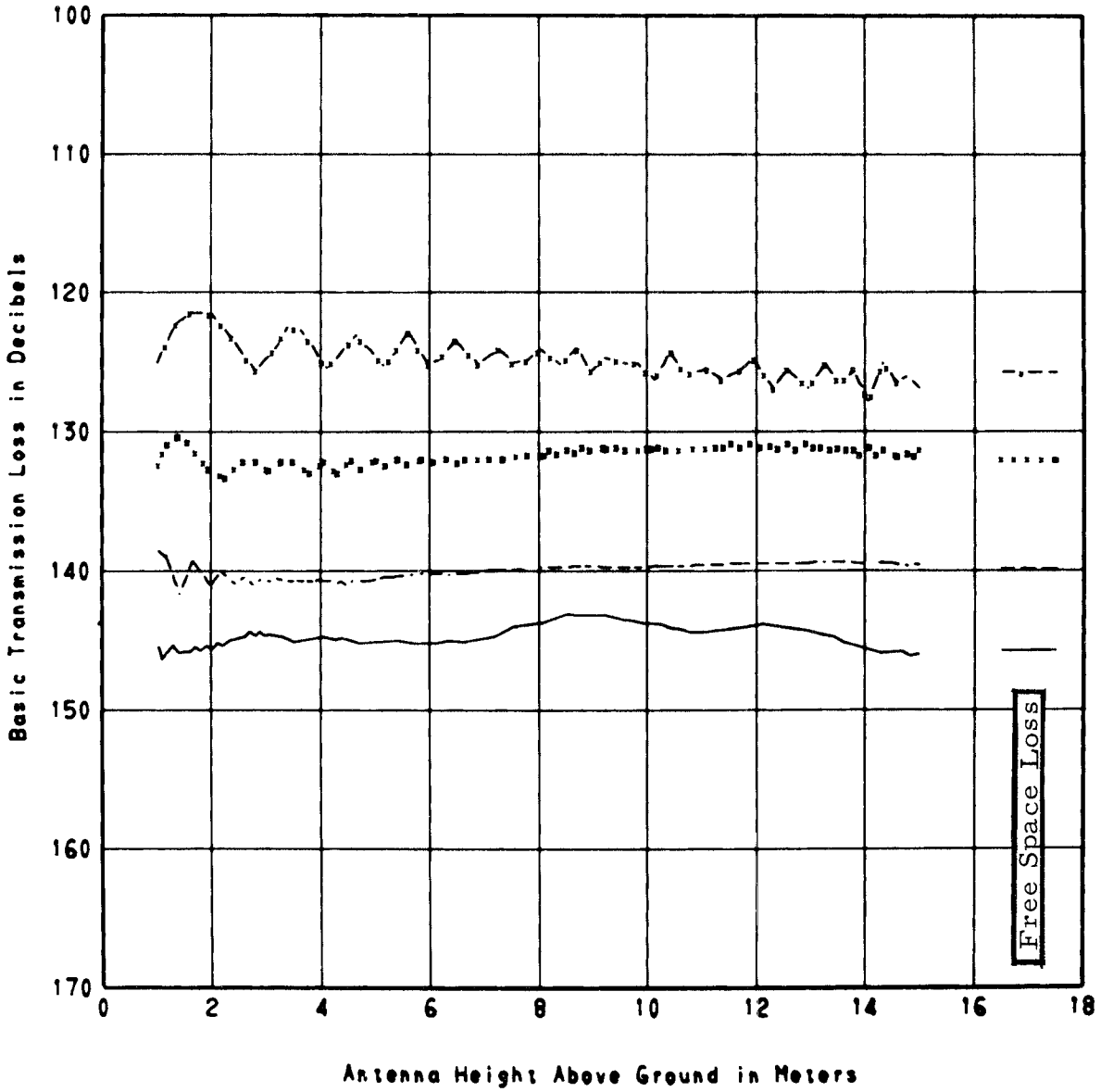
PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is
06^{o} 34' 40" T.

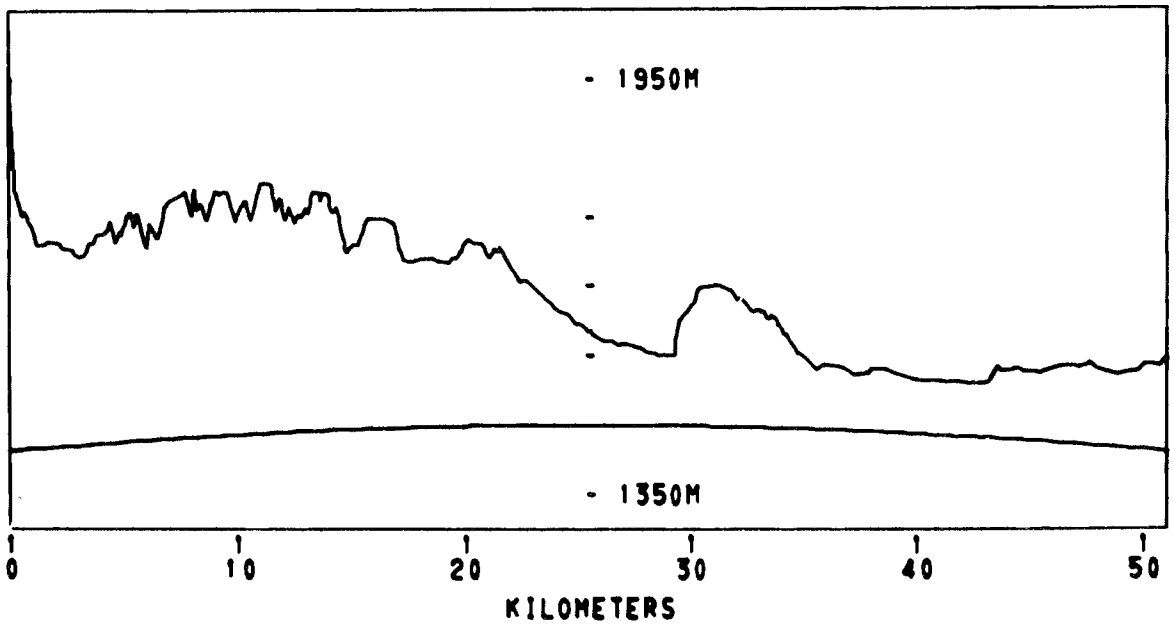
910 MHZ 7/ 6/66
1846 MHZ
4595 MHZ
9190 MHZ

R3-50-T2

HIGHLAND RESERVOIR NO. 2



RCVR. ELEV.	R3-50-T2	XMTR. ELEV.
1995 M	PATH LENGTH 50.98 km	1583 M



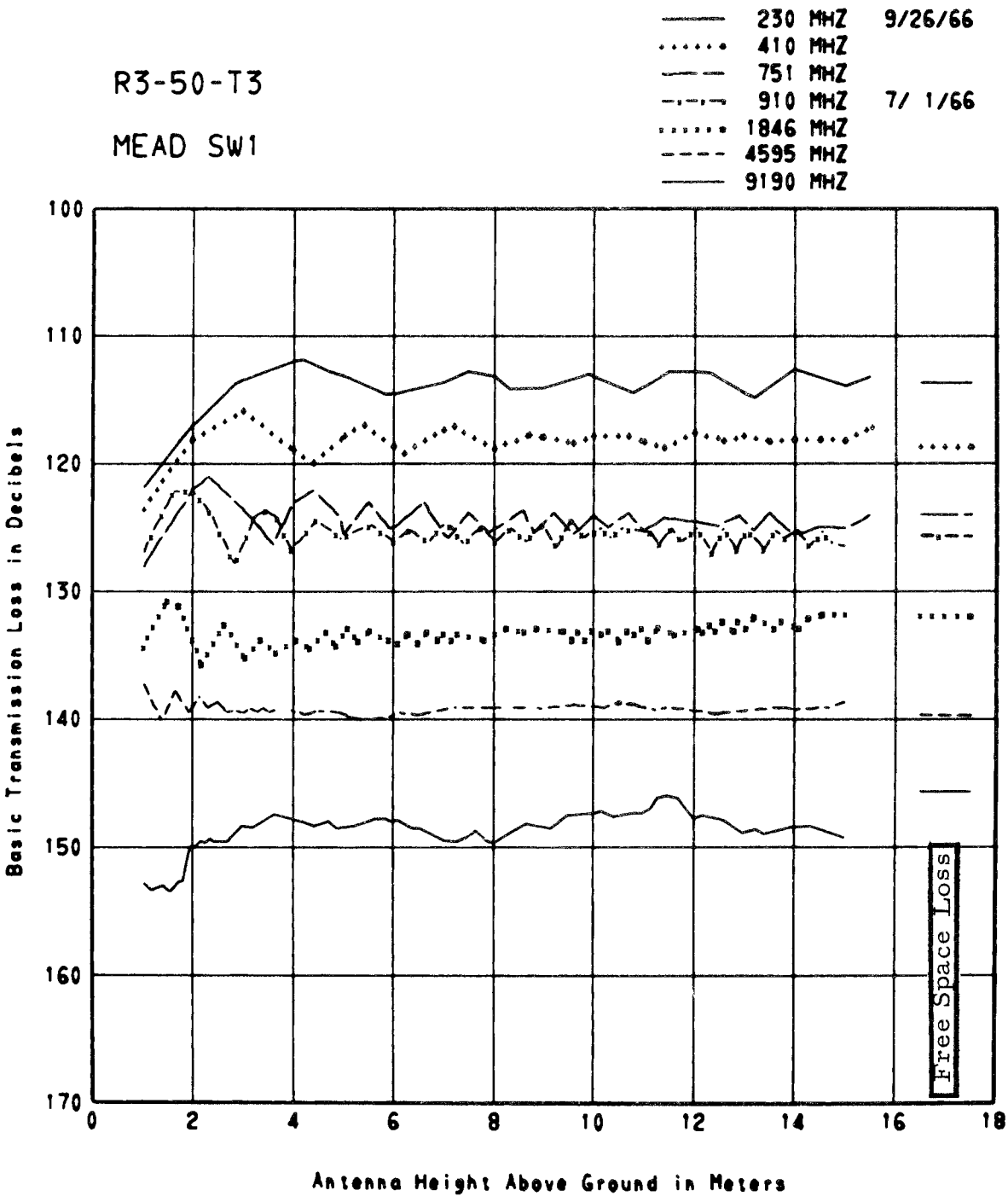
L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
					7-6-66 at 15 M		
50%				126.6	131.2	138.4	144.3
Δ10%-90%				< 3	< 3	< 3	< 3
					7-6-66 at 7.3 M		
50%				123.8	131.3	139.2	145.3
Δ10%-90%				< 3	< 3	< 3	< 3
					7-6-66 at 1 M		
50%				135.1	128.1	137.0	145.5
Δ10%-90%				< 3	< 3	< 3	< 3

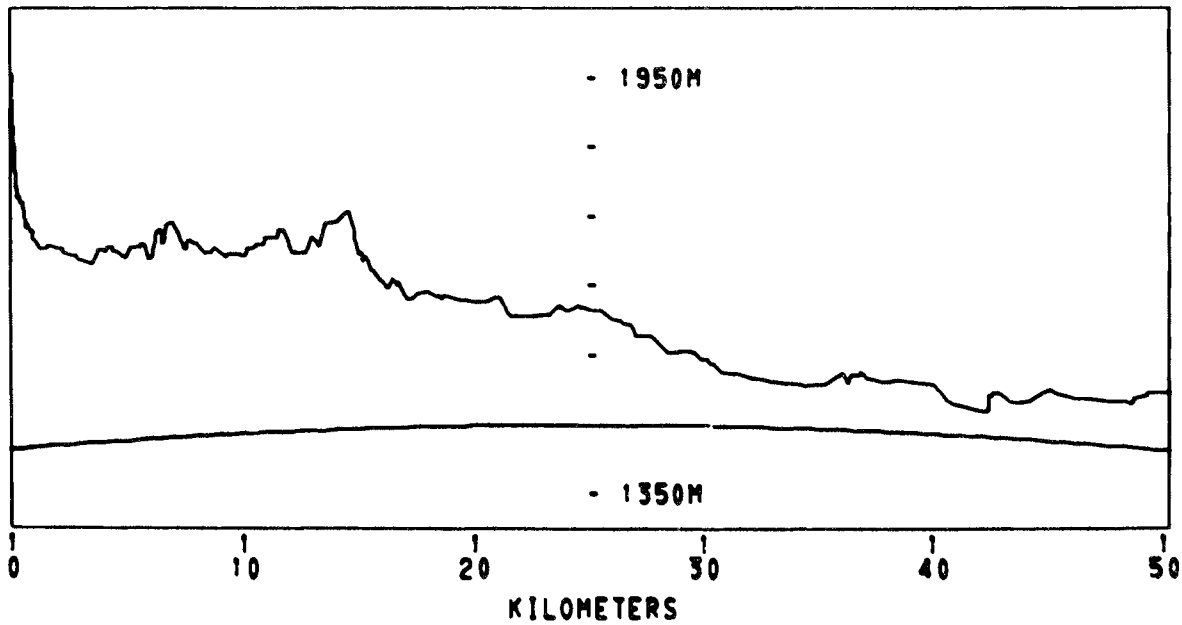
There is a wheat field in the foreground of the path. At 90 m, a fence and telephone lines cross the path. A lake lies on the path at 0.8 km, with a few trees at the edge of the lake.

PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is 19° 01' 35" T.


R3-50-T3
MEAD SW1
230 MHZ 9/26/66
410 MHZ
751 MHZ
910 MHZ 7/ 1/66
1846 MHZ
4595 MHZ
9190 MHZ
Basic Transmission Loss in Decibels
100
110
120
130
140
150
160
170
0
2
4
6
8
10
12
14
16
18
Antenna Height Above Ground in Meters
Free Space Loss

RCVR. ELEV.	R3-50-T3	XMTR. ELEV.
1995 M	PATH LENGTH 50.21 km	1535 M



L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
	9-26-66 at 15 M				7-1-66 at 15 M		
50%	113.1	116.1	124.1	125.7	128.1	139.1	154.0
Δ10%-90%	< 3	< 3	< 3	< 3	< 3	< 3	4.7
					7-1-66 at 7.3 M		
50%				124.9	128.7	137.2	148.0
Δ10%-90%				< 3	< 3	< 3	3.4
					7-1-66 at 1 M		
50%				126.7	132.1	135.9	148.7
Δ10%-90%				< 3	< 3	< 3	6.0

The first 100 m of the path is covered with grass. This is broken at 75 m by a fence. For the next 440 m, the ground is covered with corn, and the next 1.2 km are covered with wheat. At 100 m, a 15-wire telephone line crosses the path. At 1.6 km there are trees and buildings on the far side of the path.

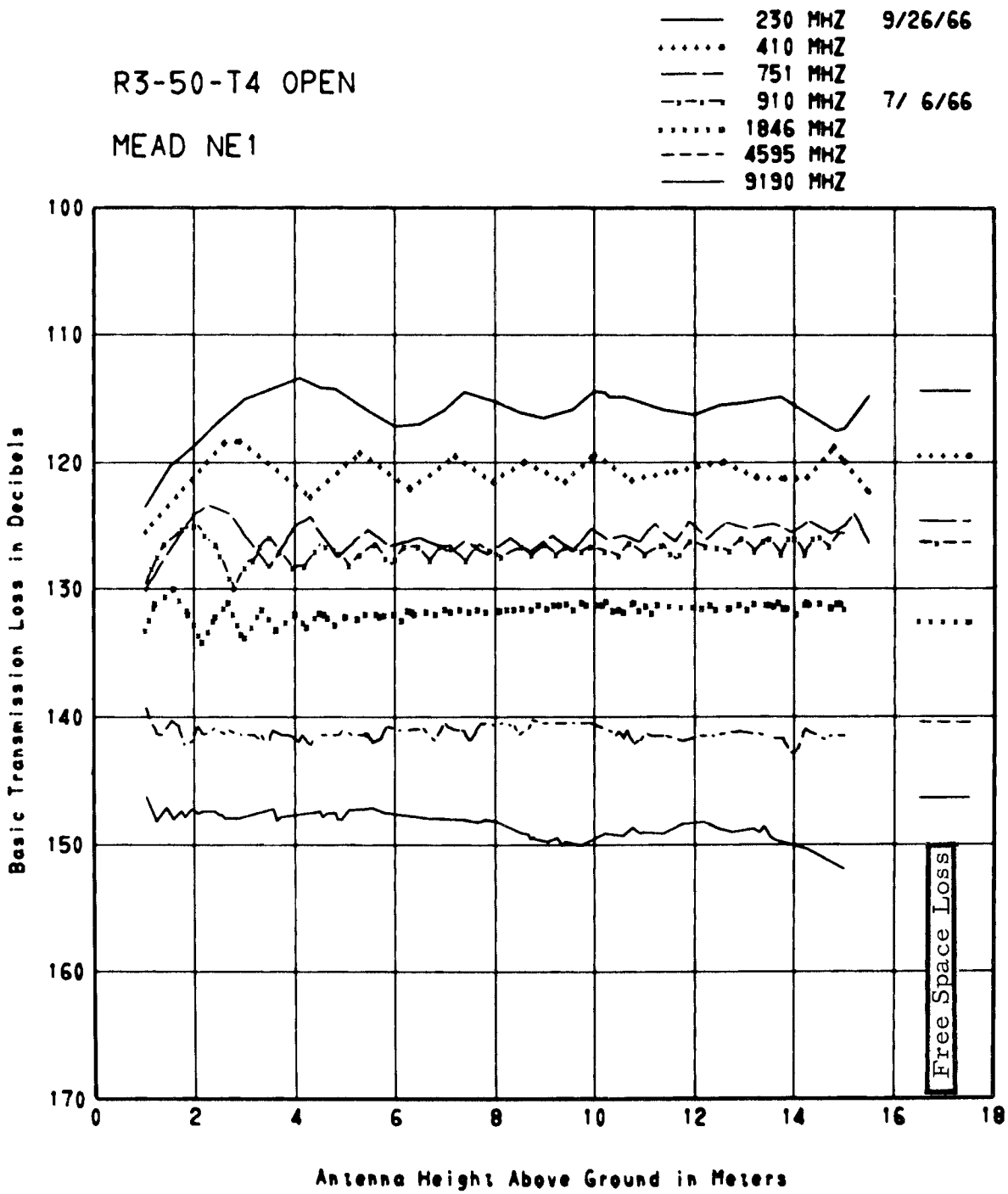
R3-50-T4 OPEN AND CONCEALED
MEAD NE1

PATH VIEW FROM OPEN SITE

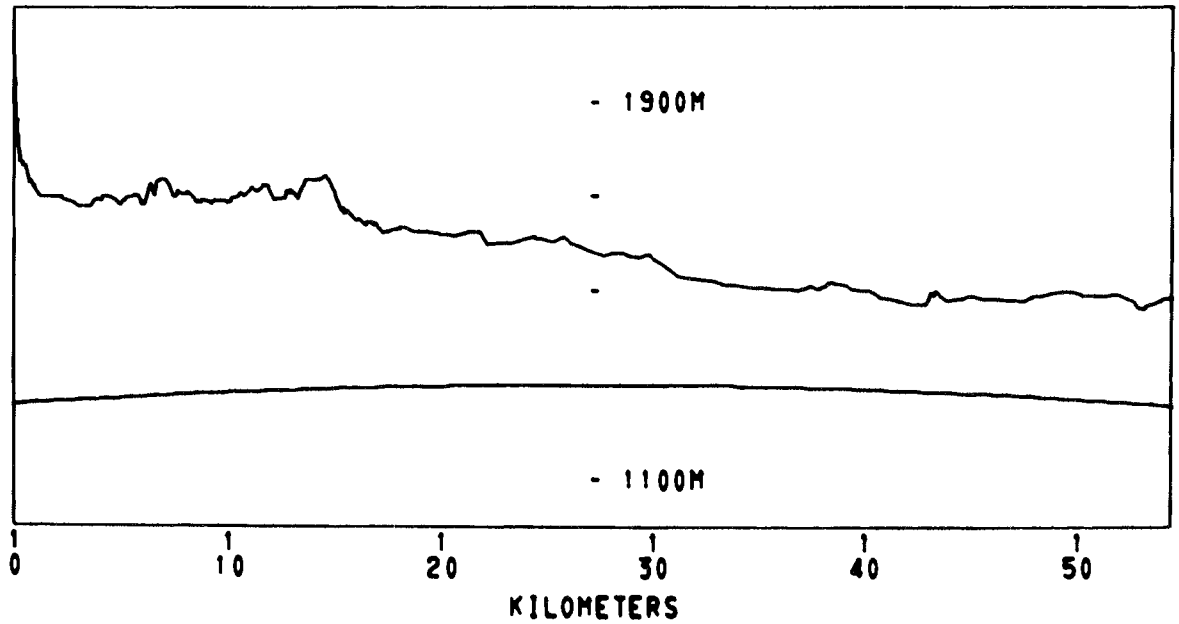
Bearing from common receiver site to transmitter site is
20° 14' 29" T.

PATH VIEW FROM CONCEALED SITE

Bearing from common receiver site to transmitter site is
20° 27' 20" T.


R3-50-T4 OPEN
MEAD NE1
230 MHZ 9/26/66
410 MHZ
751 MHZ
910 MHZ 7/ 6/66
1846 MHZ
4595 MHZ
9190 MHZ
Basic Transmission Loss in Decibels
100
110
120
130
140
150
160
170
0
2
4
6
8
10
12
14
16
18
Antenna Height Above Ground in Meters
Free Space Loss

RCVR. ELEV.	R3-50-T4 OPEN	XMTR. ELEV.
1995 M	PATH LENGTH 54.32 km	1529 M



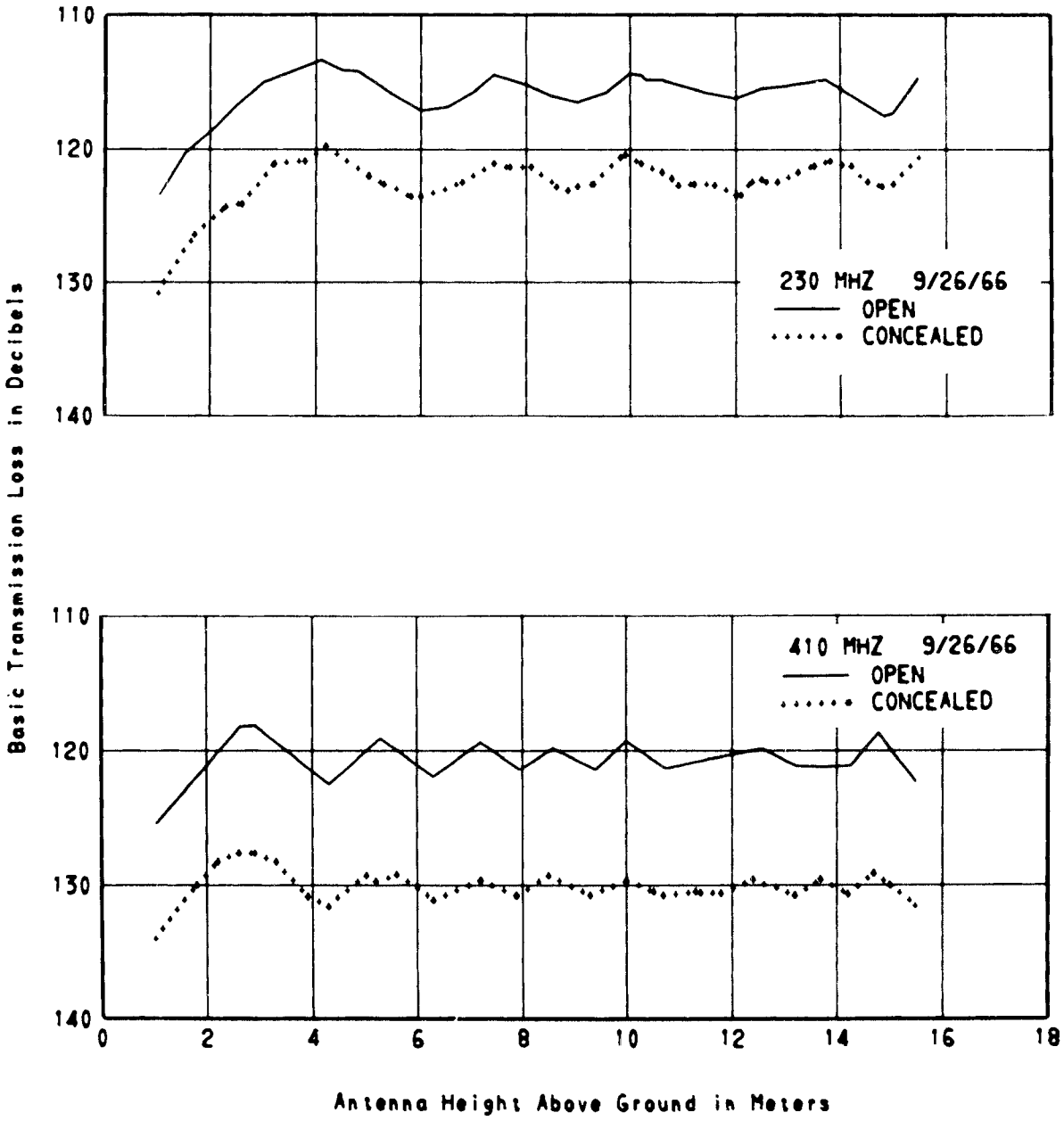
L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
	9-26-66 at 15 M				7-6-66 at 15 M		
50%	113.5	120.9	128.0	125.7	131.2	141.5	149.9
Δ10%-90%	< 3	< 3	< 3	< 3	< 3	< 3	< 3
					7-6-66 at 7.3 M		
50%				127.6	131.8	137.8	147.8
Δ10%-90%				< 3	< 3	< 3	< 3
					7-6-66 at 1 M		
50%				127.4	131.9	138.5	146.0
Δ10%-90%				< 3	< 3	< 3	< 3

The ground covering of the path is weeds and hay. A fence runs beside the van and crosses the path at 100 m. At 440 m, a house and 16-m high trees are on the edge of the path. At 0.8 km, a fence, a telephone line, and an interstate highway cross the path.

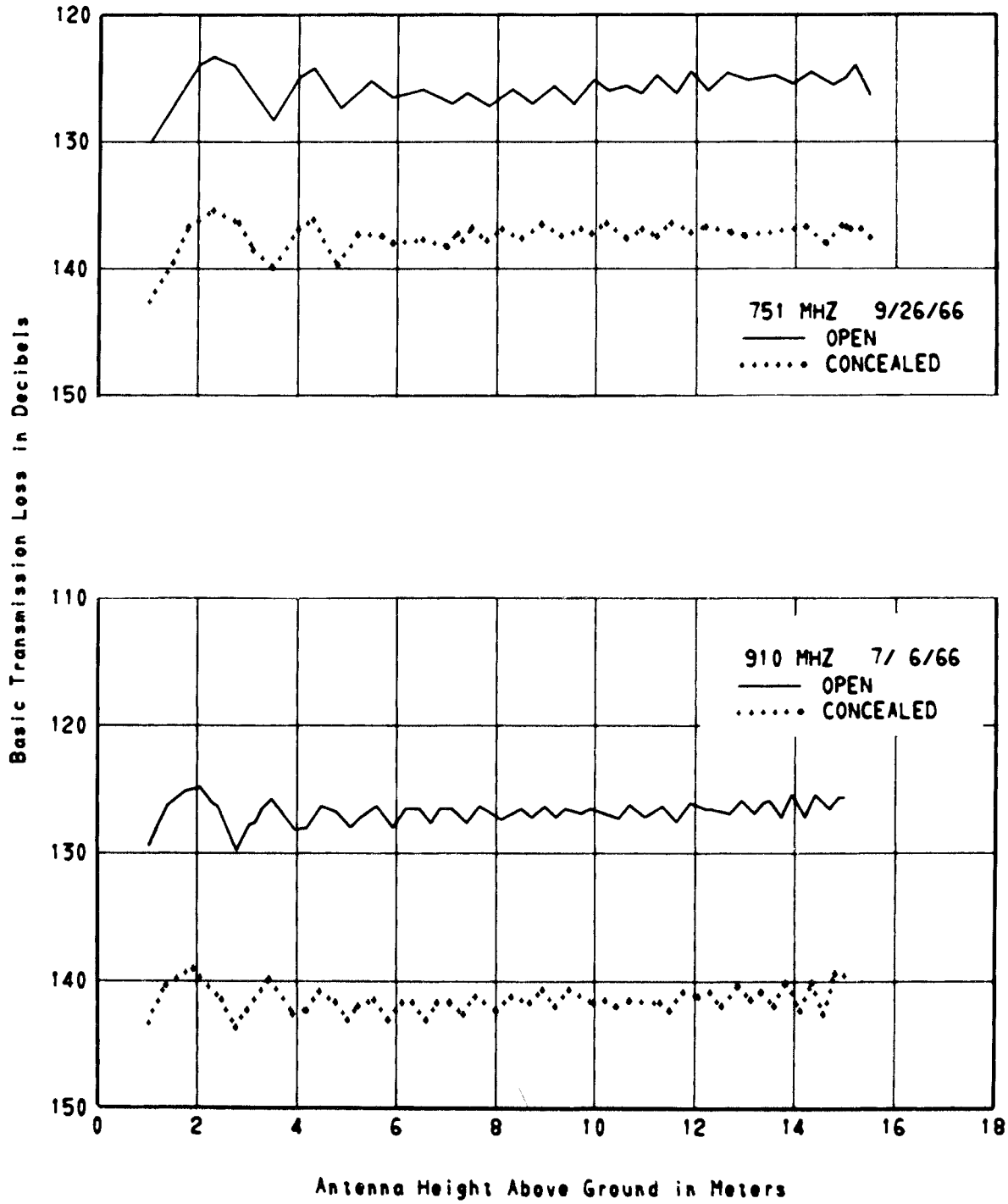
R3-50-T4 O&C

MEAD NE1



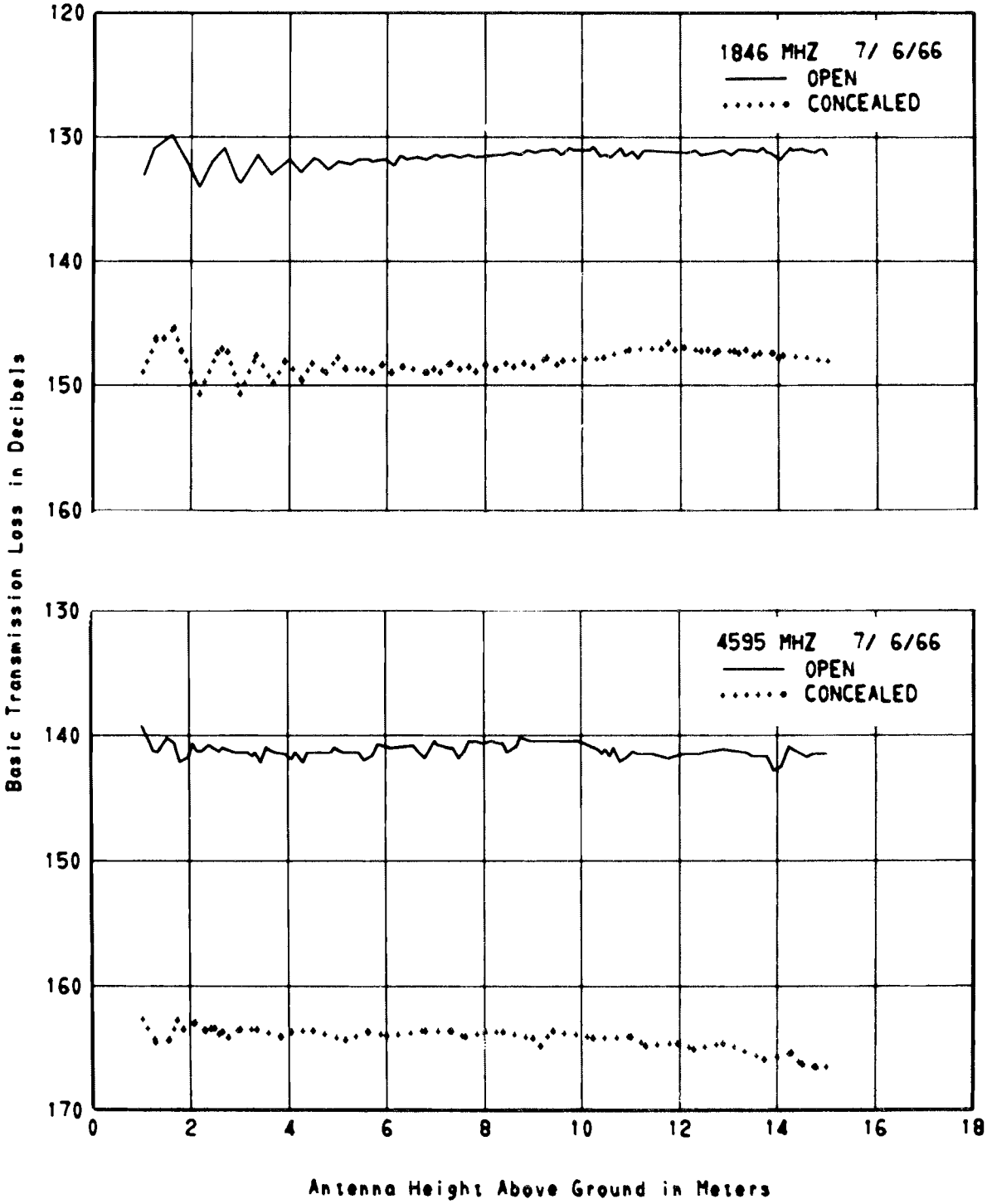
R3-50-T4 O&C

MEAD NE1



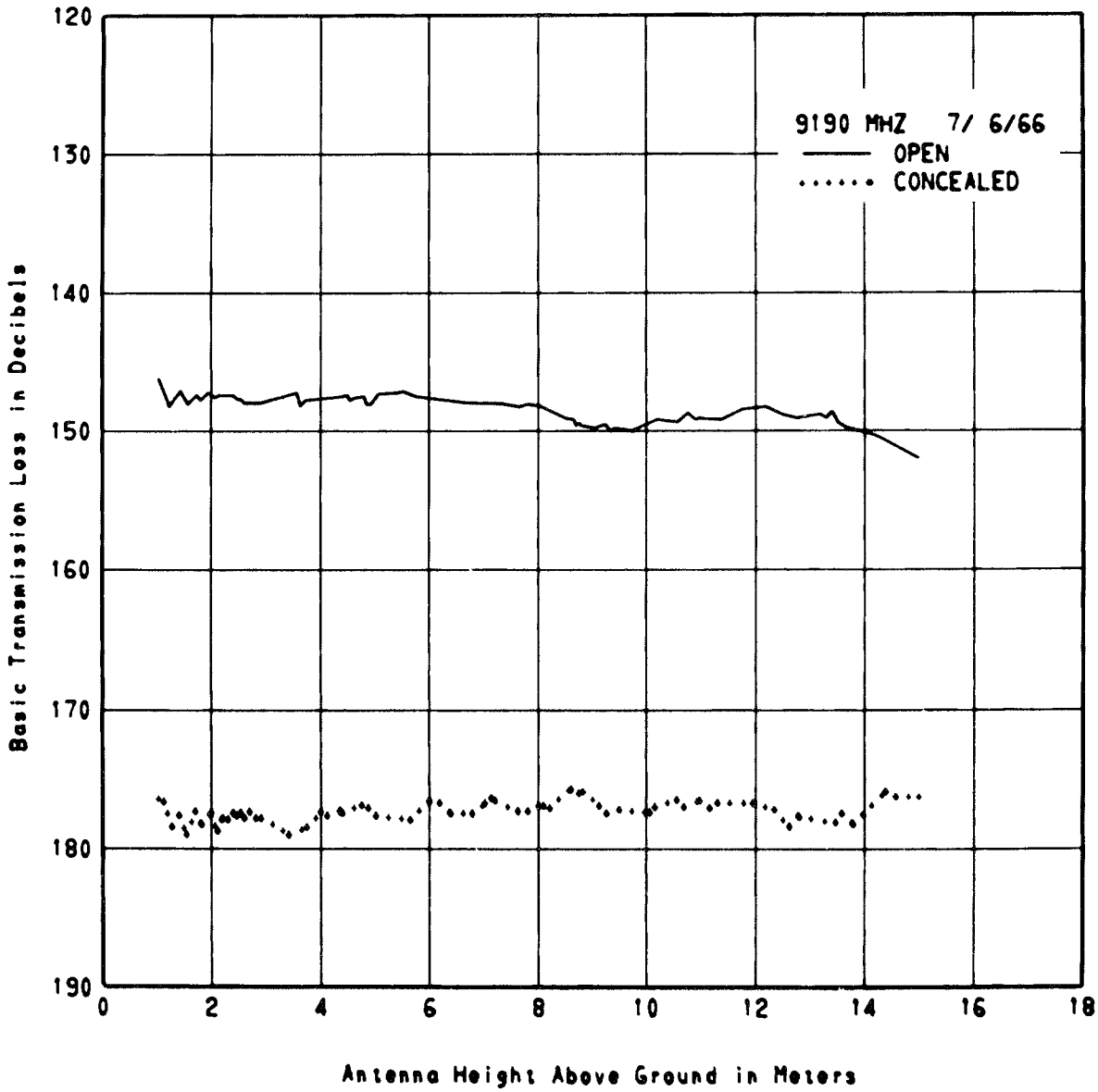
R3-50-T4 O&C

MEAD NE1

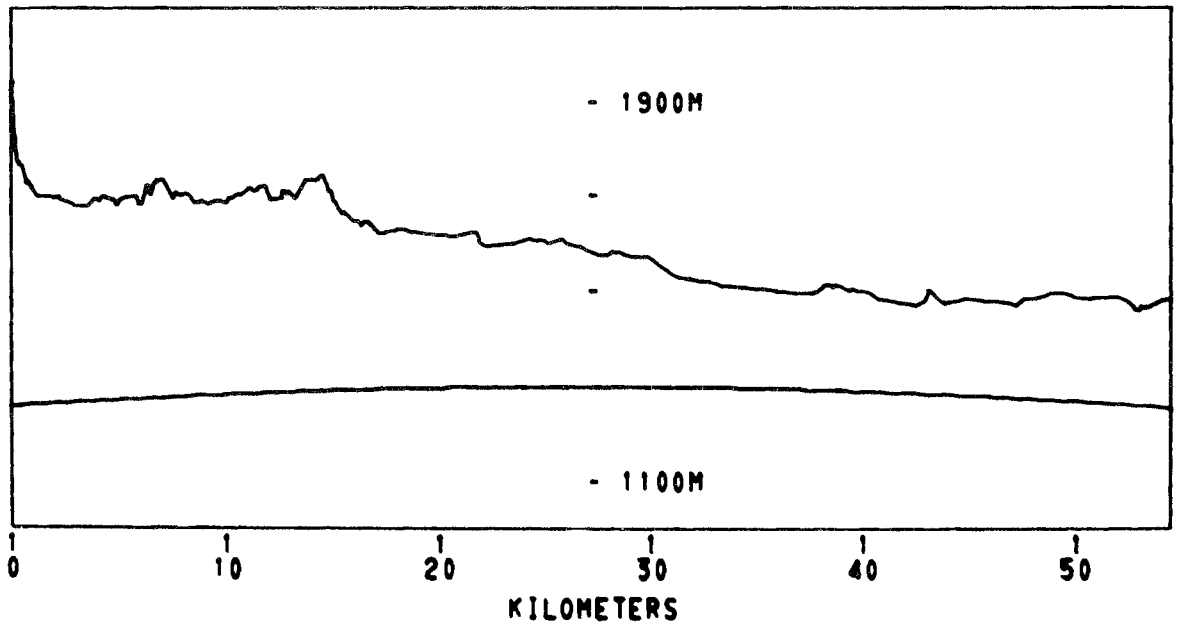


R3-50-T4 O&C

MEAD NE1



RCVR. ELEV.	R3-50-T4 CONCEALED	XMTR. ELEV.
1995 M	PATH LENGTH 54.40 km	1528 M

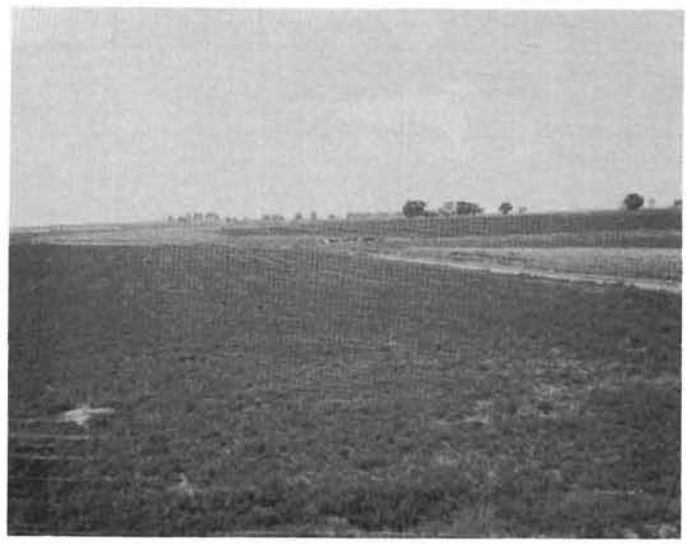


L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq (MHz)	230	410	751	910	1846	4595	9190
	9-26-66 at 15 M				7-6-66 at 15 M		
50%	122.9	129.8	136.8	138.9		166.5	178.3
Δ10%-90%	< 3	< 3	< 3	< 3		8.5	4.9
					7-6-66 at 7.3 M		
50%				140.6	145.2	164.3	176.9
Δ10%-90%				< 3	3.2	< 3	3.8
					7-6-66 at 1 M		
50%				143.6	144.8	162.1	177.4
Δ10%-90%				< 3	6.0	< 3	4.2

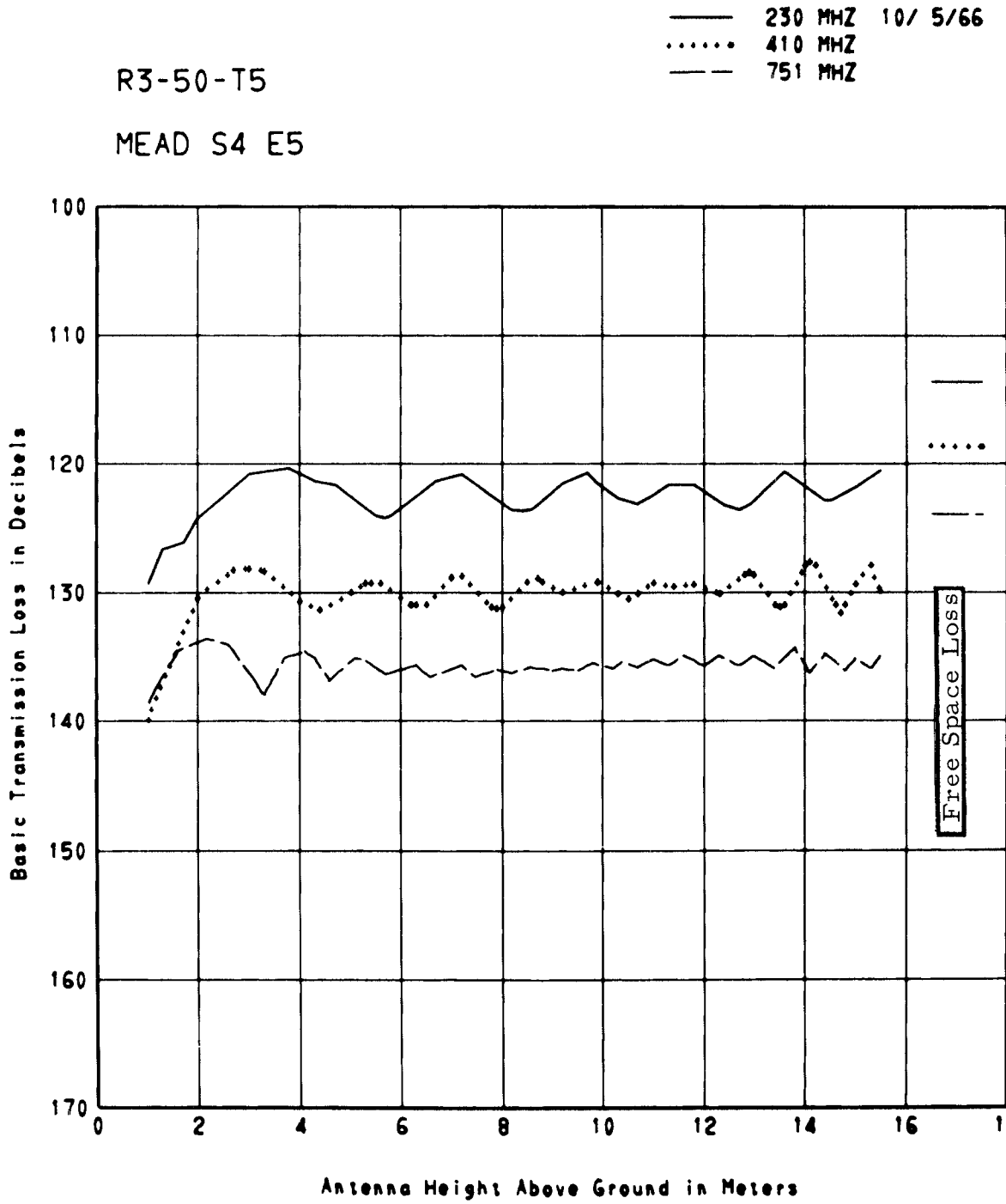
Trees, 16-m high and 3- to 440-m deep, are on the path. The path also crosses marsh land and the edge of the lake.

R3-50-T5
MEAD S4E5

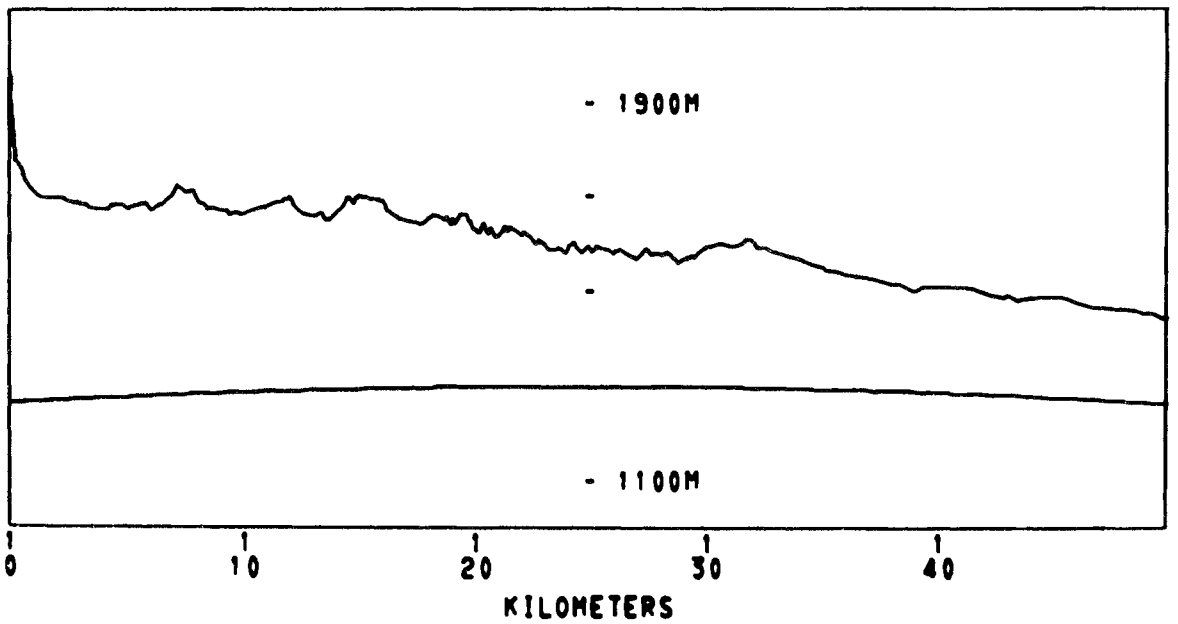


PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is
30° 50' 08" T.


230 MHZ 10/ 5/66
410 MHZ
751 MHZ
R3-50-T5
MEAD S4 E5
100
110
120
130
140
150
160
170
0
2
4
6
8
10
12
14
16
18
Basic Transmission Loss in Decibels
Antenna Height Above Ground in Meters
Free Space Loss

RCVR. ELEV.	R3-50-T5	XMTR. ELEV.
1995 M	PATH LENGTH 49.70 km	1482 M

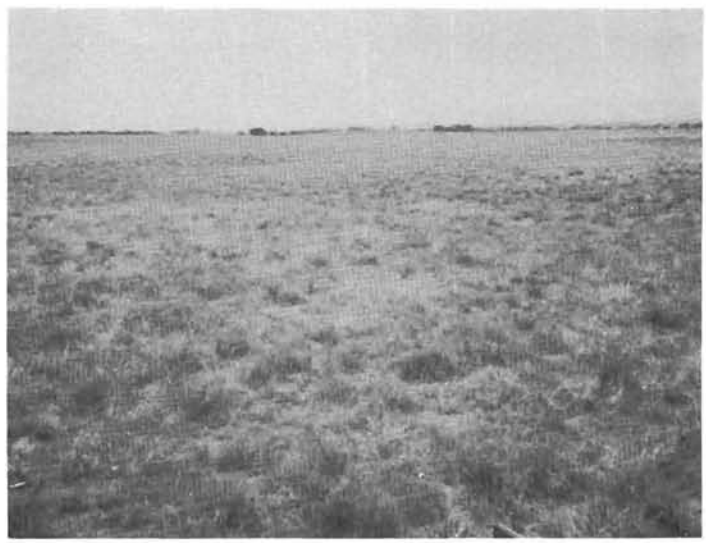


L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
	10-5-66 at 15 M						
50%	121.0	130.0	134.4				
Δ10%-90%	< 3	< 3	< 3				

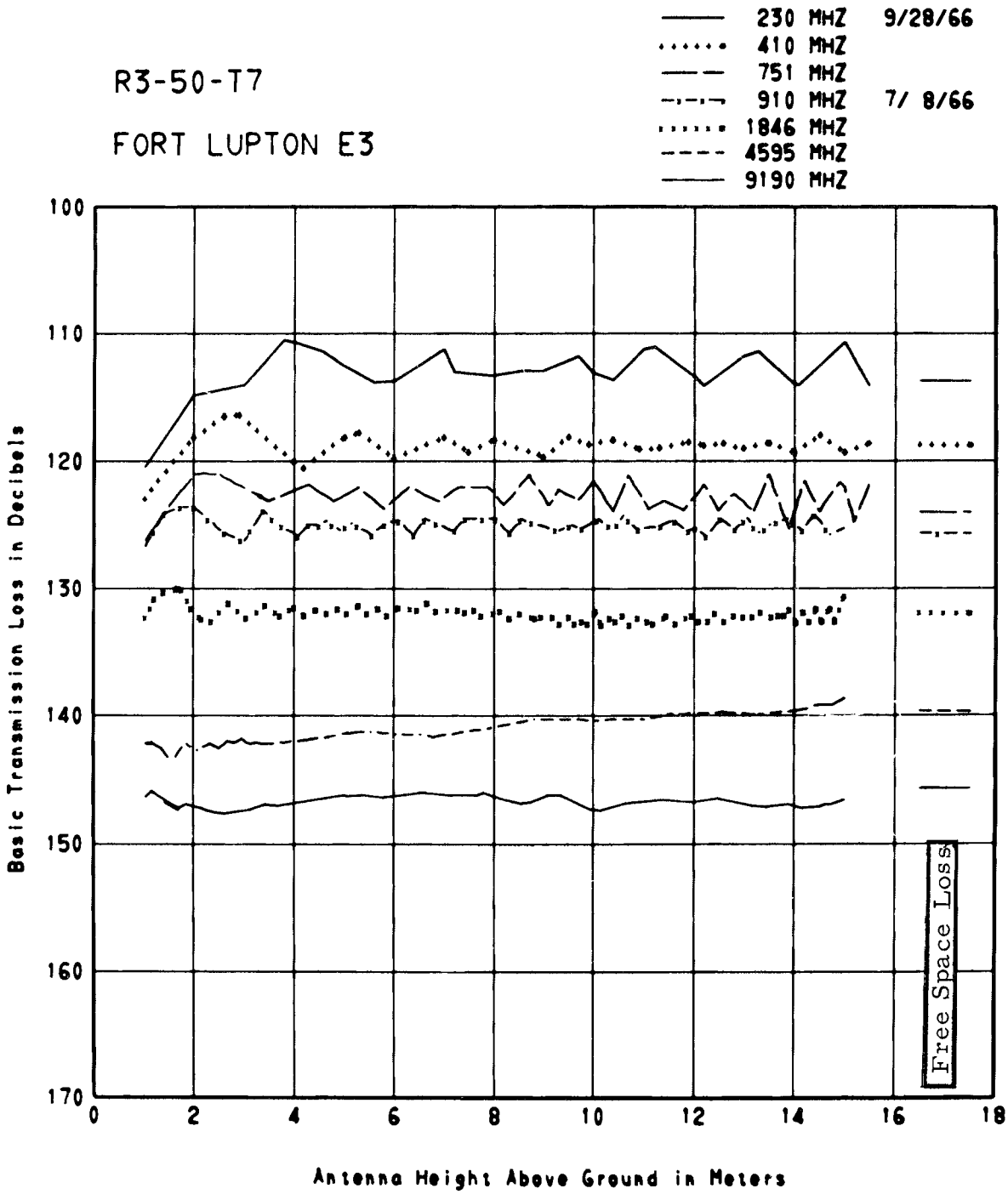
The path extends over open terrain and hay fields. There are 16-m high trees at 0.8 km.

R3-50-T7
FORT LUPTON E3

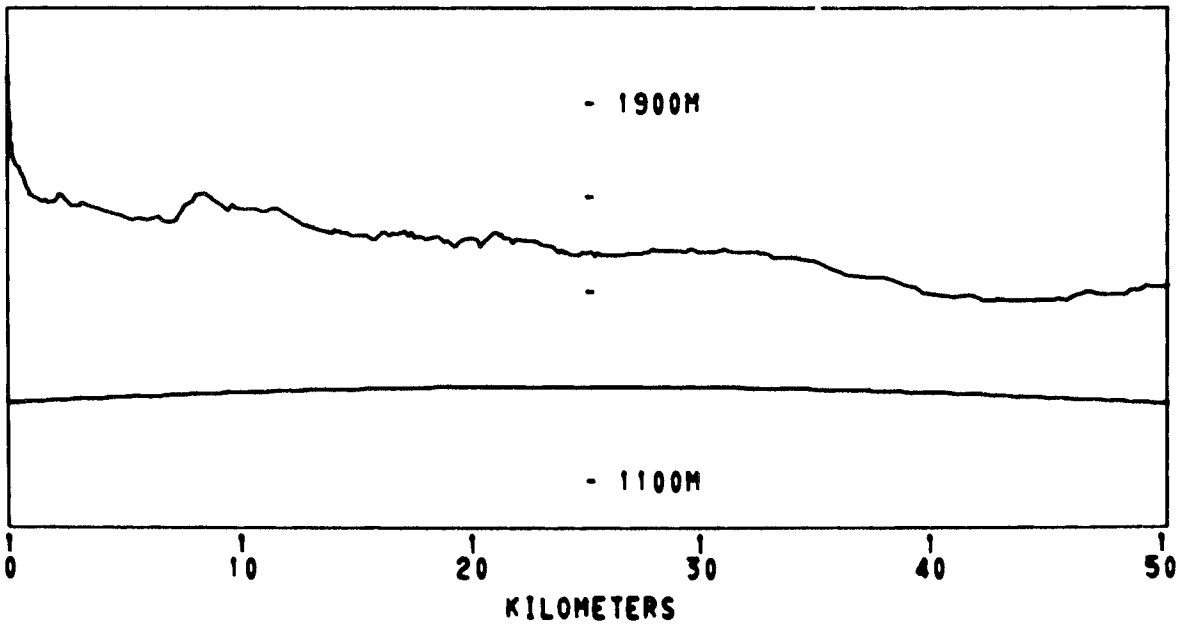


PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is 48° 59' 47" T.


230 MHZ 9/28/66
410 MHZ
751 MHZ
910 MHZ 7/ 8/66
1846 MHZ
4595 MHZ
9190 MHZ
R3-50-T7
FORT LUPTON E3
100
110
120
130
140
150
160
170
0
2
4
6
8
10
12
14
16
18
Basic Transmission Loss in Decibels
Antenna Height Above Ground in Meters
Free Space Loss

RCVR. ELEV.	R3-50-T7	XMTR. ELEV.
1995 M	PATH LENGTH 50.24 km	1548 M

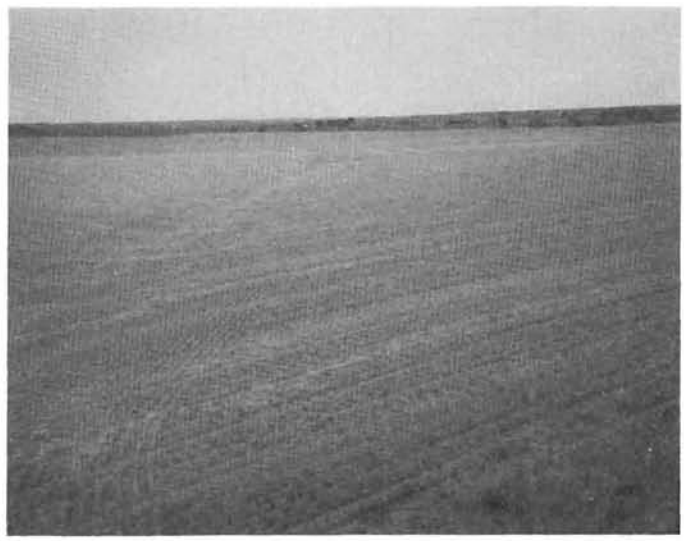


L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
	9-28-66 at 15 M				7-8-66 at 7.3 M		
50%	114.1	116.2	122.5	124.8	131.0	141.3	146.2
Δ10%-90%	< 3	< 3	< 3	< 3	< 3	< 3	< 3

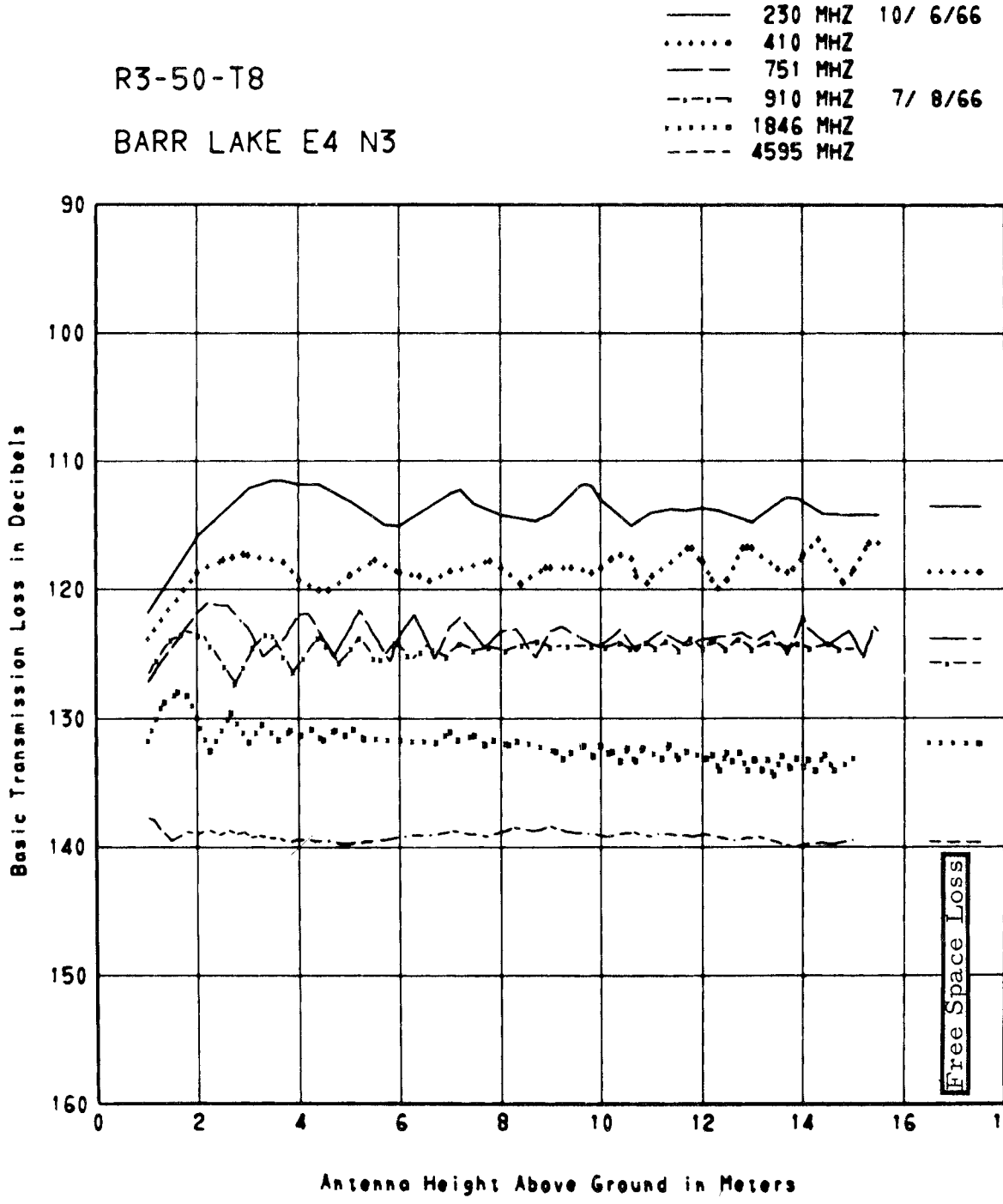
The path extends over dry-weed fields for 1.6 km. At this point, there are 16-m high trees.

R3-50-T8
BARR LAKE E4N3

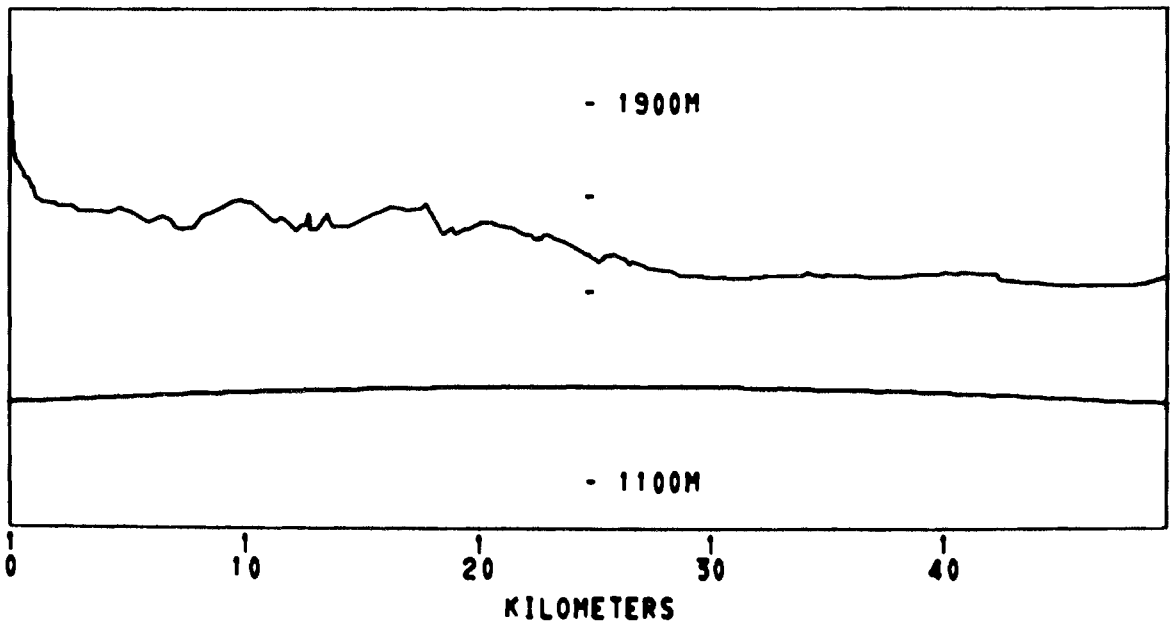


PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is
63° 50' 19" T.


230 MHZ 10/ 6/66
410 MHZ
751 MHZ
910 MHZ 7/ 8/66
1846 MHZ
4595 MHZ
R3-50-T8
BARR LAKE E4 N3
Basic Transmission Loss in Decibels
90
100
110
120
130
140
150
160
0
2
4
6
8
10
12
14
16
18
Antenna Height Above Ground in Meters
Free Space Loss

RCVR. ELEV.	R3-50-T8	XMTR. ELEV.
1995 M	PATH LENGTH 49.50 km	1567 M

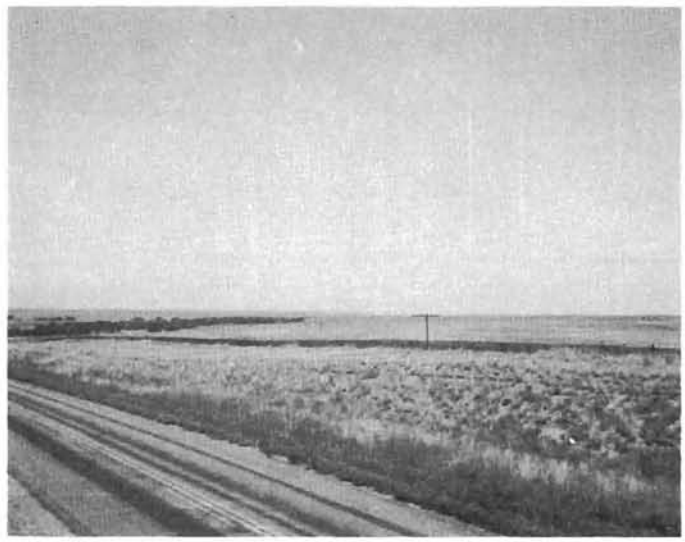


L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
	10-6-66 at 15 M				7-8-66 at 15 M		
50%	114.1	116.9	126.8	126.2	127.0	140.9	
Δ10%-90%	< 3	< 3	< 3	< 3	5.9	< 3	
					7-8-66 at 7.3 M		
50%				126.4	126.1	143.0	
Δ10%-90%				< 3	5.0	5.0	
					7-8-66 at 1 M		
50%				128.9	129.9	142.1	
Δ10%-90%				< 3	< 3	5.0	

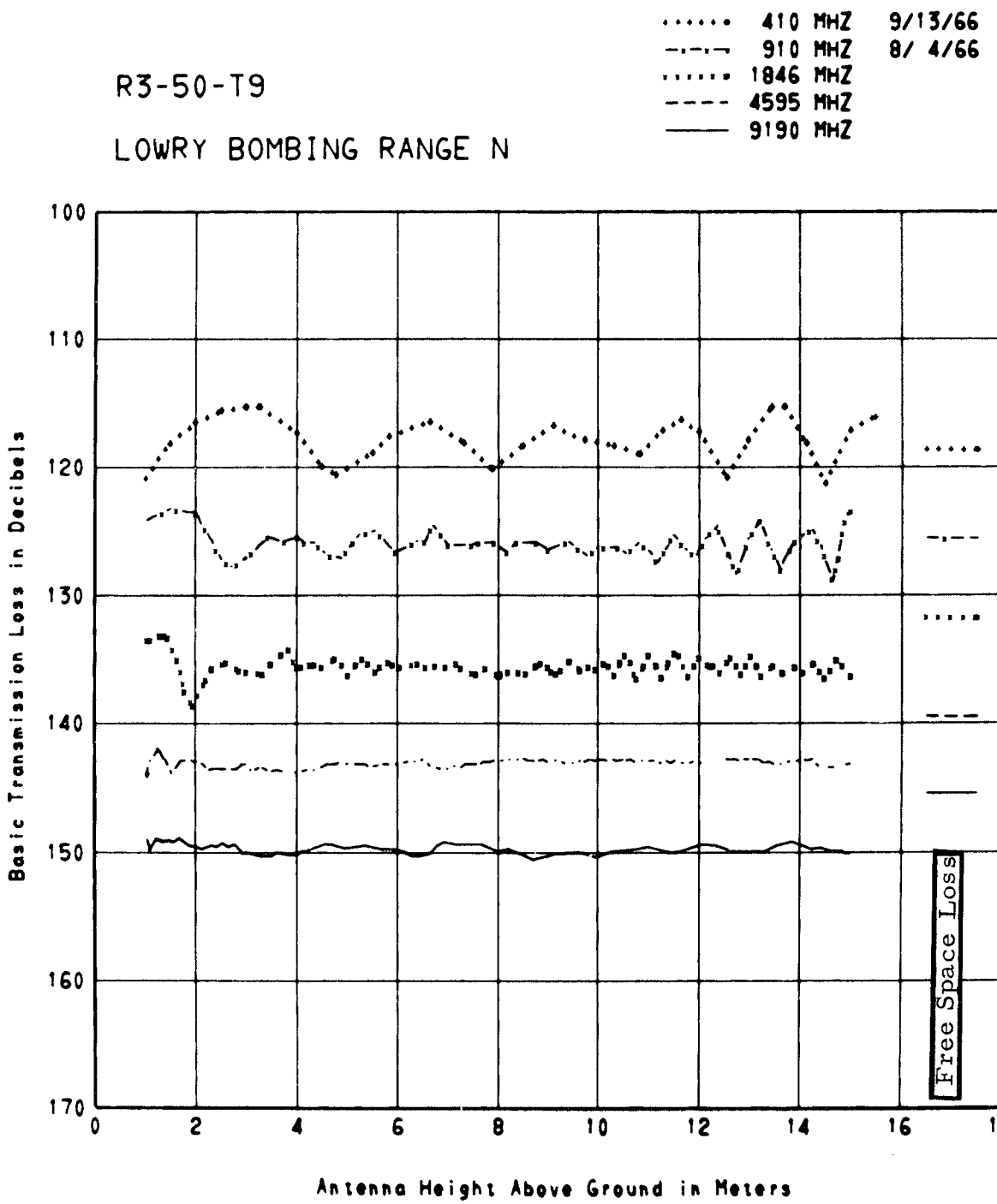
The ground is covered with stubble for 2.3 km. At this point, there are 16-m high trees.

R3-50-T9
LOWRY BOMBING RANGE N

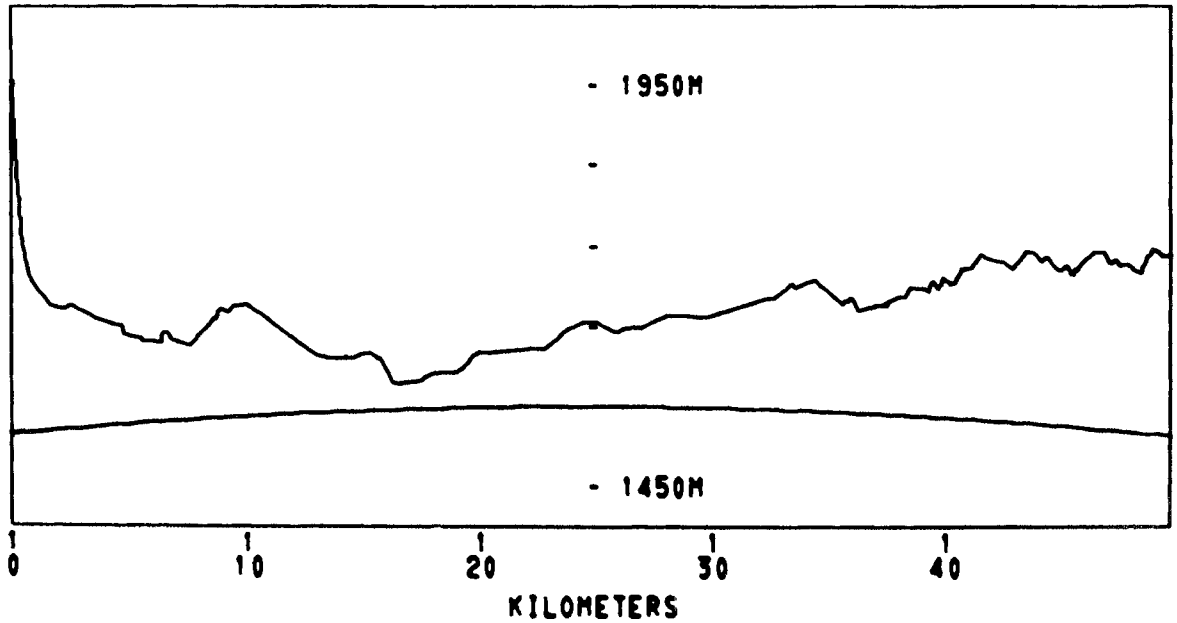


PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is
109° 55' 43" T.


410 MHZ 9/13/66
910 MHZ 8/ 4/66
1846 MHZ
4595 MHZ
9190 MHZ
R3-50-T9
LOWRY BOMBING RANGE N
Basic Transmission Loss in Decibels
100
110
120
130
140
150
160
170
0
2
4
6
8
10
12
14
16
18
Antenna Height Above Ground in Meters
Free Space Loss

RCVR. ELEV.	R3-50-T9	XMTR. ELEV.
1995 M	PATH LENGTH 49.60 km	1776 M



L_b (dB) SHORT TERM SIGNAL VARIABILITY

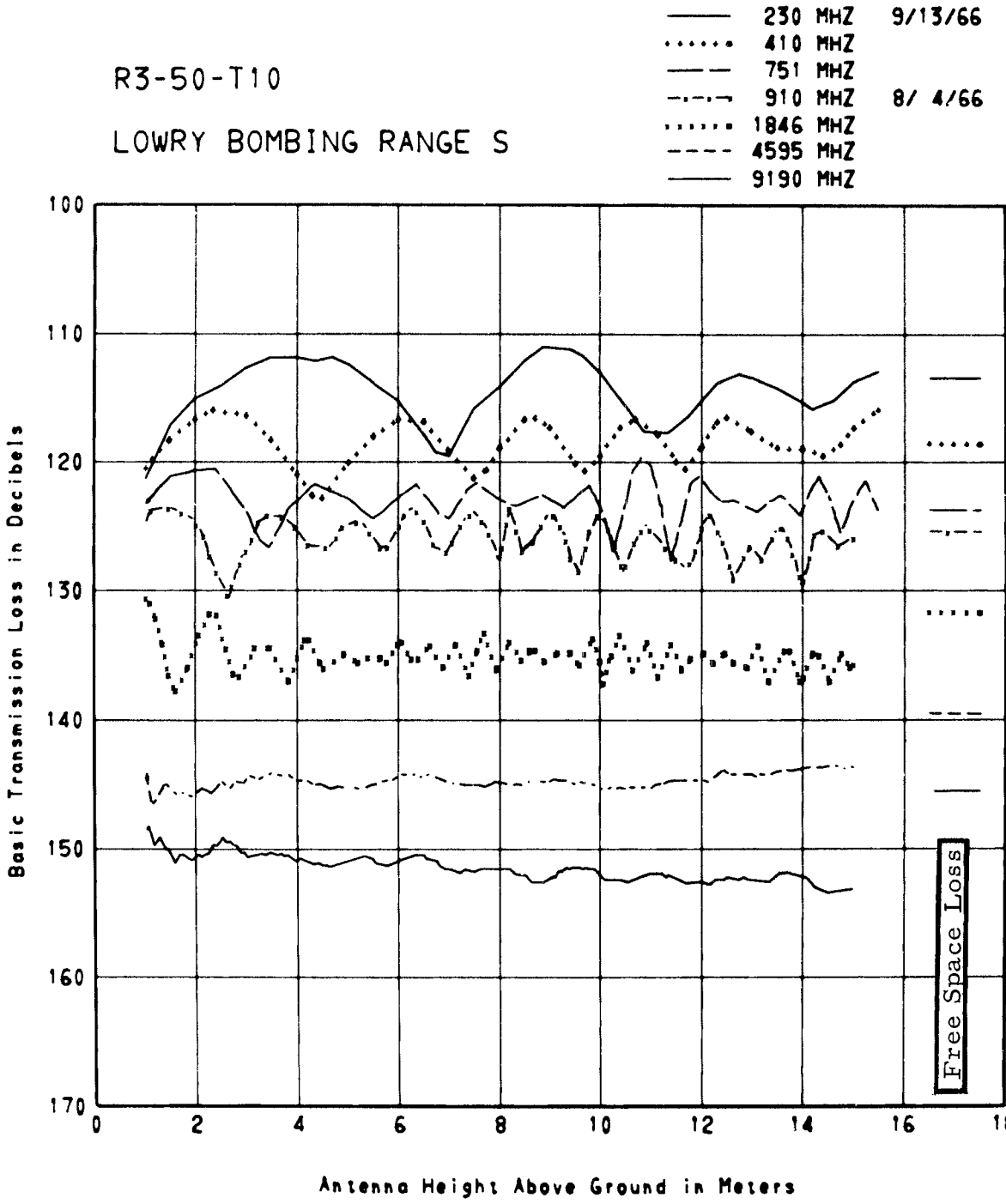
Freq(MHz)	230	410	751	910	1846	4595	9190
	9-13-66 at 15 M				8-4-66 at 15 M		
50%		114.8		125.8	135.2	142.8	149.2
Δ10%-90%		<3		<3	<3	<3	<3
					8-4-66 at 7.3 M		
50%				126.2	135.6	142.4	149.4
Δ10%-90%				<3	<3	<3	<3
					8-4-66 at 1 M		
50%				126.6	132.9	144.8	150.2
Δ10%-90%				<3	<3	<3	<3

A road and weeds occupy the immediate foreground. At 100 m, a snow fence and a telephone line cross the path. The path then crosses a valley that is covered with grass.

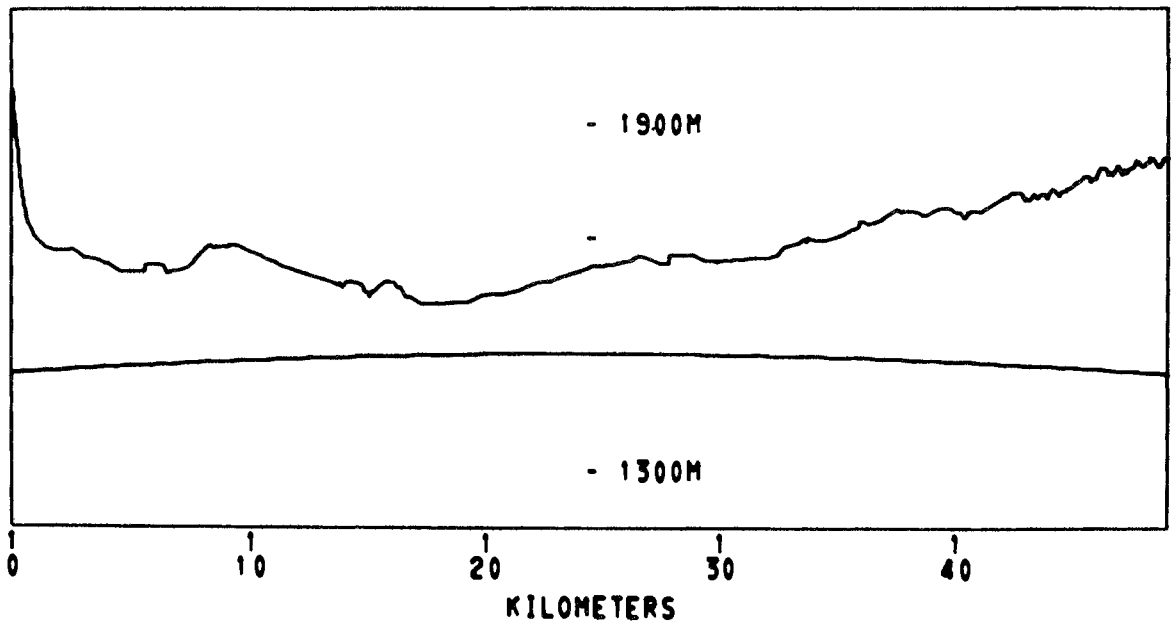
R3-50-T10
LOWRY BOMBING RANGE S

PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is
117° 04' 54" T.


230 MHZ 9/13/66
410 MHZ
751 MHZ
910 MHZ 8/ 4/66
1846 MHZ
4595 MHZ
9190 MHZ
R3-50-T10
LOWRY BOMBING RANGE S
Basic Transmission Loss in Decibels
100
110
120
130
140
150
160
170
0
2
4
6
8
10
12
14
16
18
Antenna Height Above Ground in Meters
Free Space Loss

RCVR. ELEV.	R3-50-T10	XMTR. ELEV.
1995 M	PATH LENGTH 48.92 km	1875 M



L_b (dB) SHORT TERM SIGNAL VARIABILITY

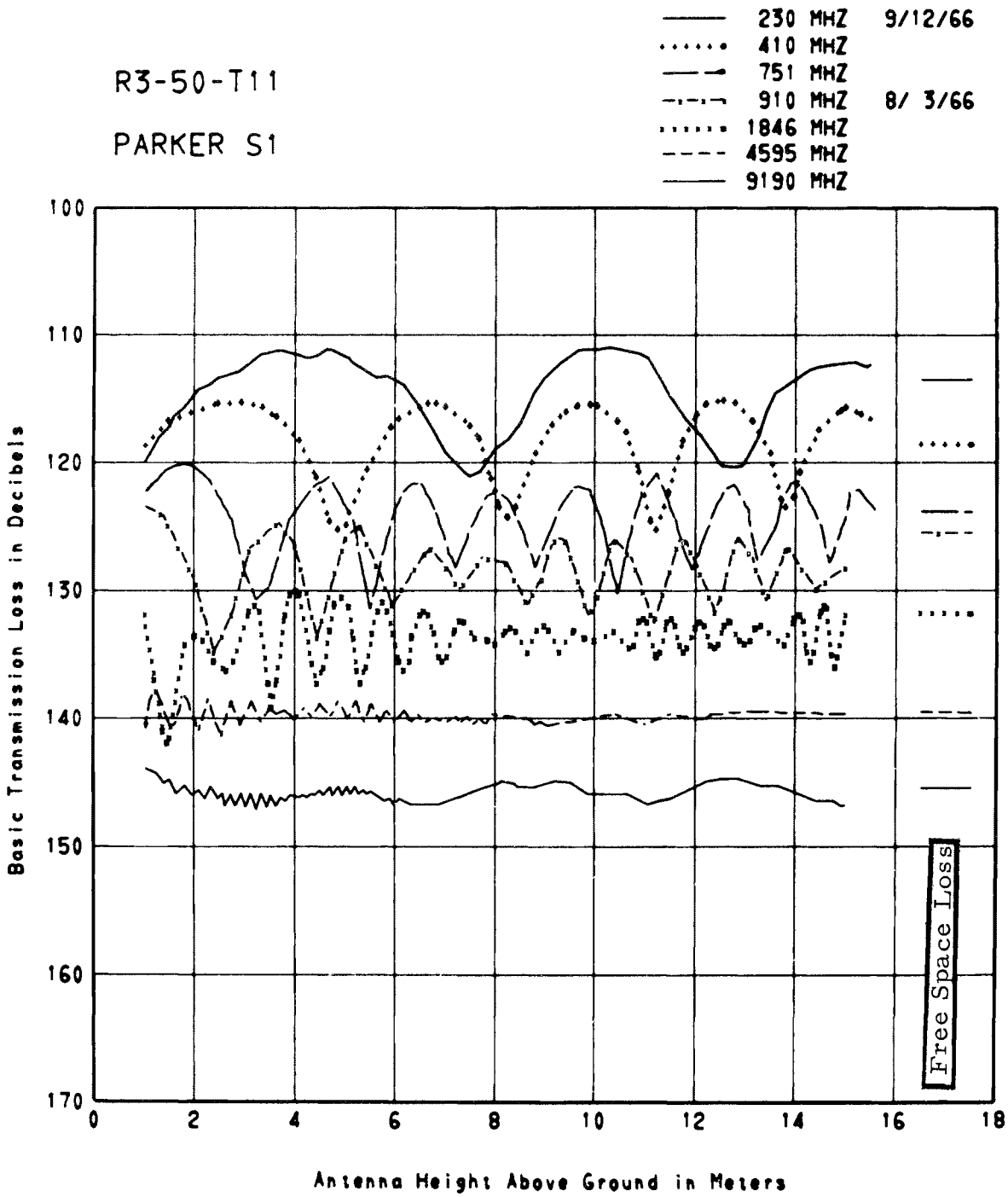
Freq(MHz)	230	410	751	910	1846	4595	9190
	9-13-66 at 15 M				8-4-66 at 15 M		
50%	112.6	114.3	124.5	125.6	134.7	144.9	152.0
Δ10%-90%	< 3	< 3	< 3	< 3	< 3	< 3	< 3
					8-4-66 at 7.3 M		
50%				124.9	136.3	144.1	151.2
Δ10%-90%				< 3	< 3	< 3	< 3
					8-4-66 at 1 M		
50%				124.9	131.2	141.9	148.8
Δ10%-90%				< 3	< 3	< 3	< 3

The immediate foreground is a road with a fence and a telephone line at 15 m. There is pasture land with farm buildings at 0.5 km. Just beyond the horizon (0.8 km) and to the right of the path is a microwave relay station, with power poles near the station.

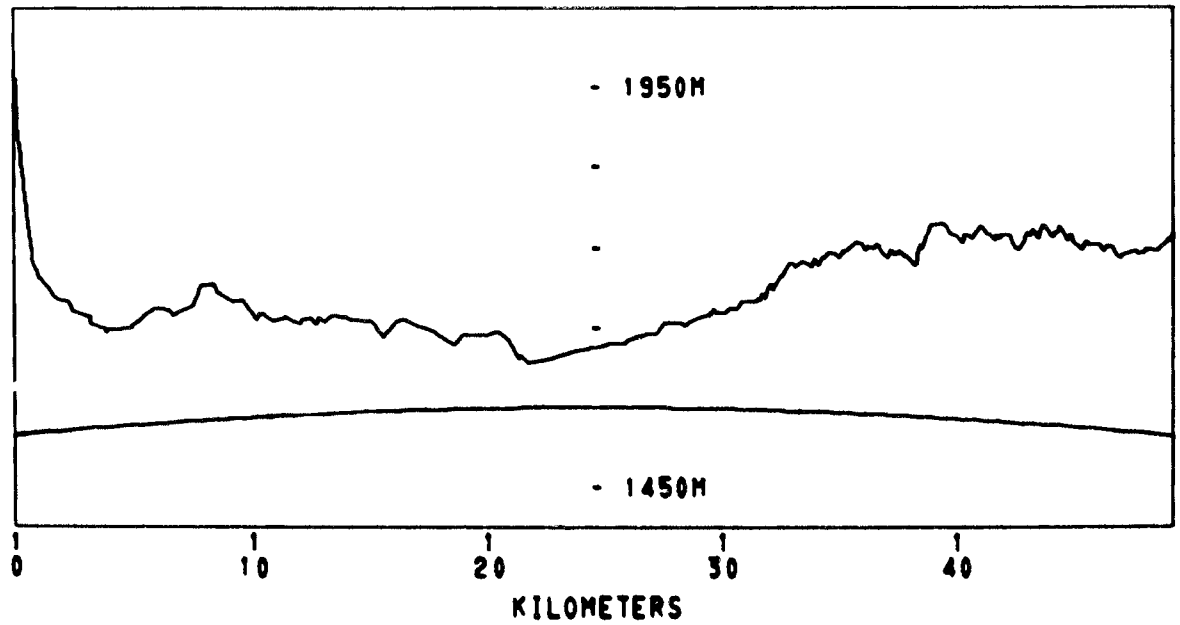
R3-50-T11
PARKER S1

PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is
127° 47' 29" T.


R3-50-T11
PARKER S1
230 MHZ 9/12/66
410 MHZ
751 MHZ
910 MHZ 8/ 3/66
1846 MHZ
4595 MHZ
9190 MHZ
Free Space Loss
Basic Transmission Loss in Decibels
Antenna Height Above Ground in Meters
100
110
120
130
140
150
160
170
0
2
4
6
8
10
12
14
16
18

RCVR. ELEV.	R3-50-T11	XMTR. ELEV.
1995 M	PATH LENGTH 49.15 km	1804 M

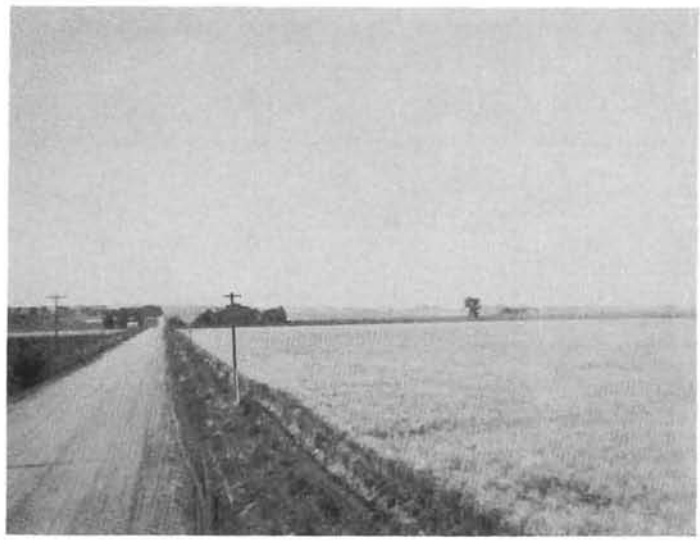


L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
	9-12-66 at 15 M				8-3-66 at 15 M		
50%	112.8	118.9	122.5	128.0	133.1	139.6	145.6
Δ10%-90%	< 3	< 3	< 3	< 3	< 3	< 3	< 3
					8-3-66 at 7.3 M		
50%				129.8	132.1	138.8	144.6
Δ10%-90%				< 3	< 3	< 3	< 3
					8-3-66 at 1 M		
50%				124.0	131.3	140.1	144.0
Δ10%-90%				< 3	< 3	< 3	< 3

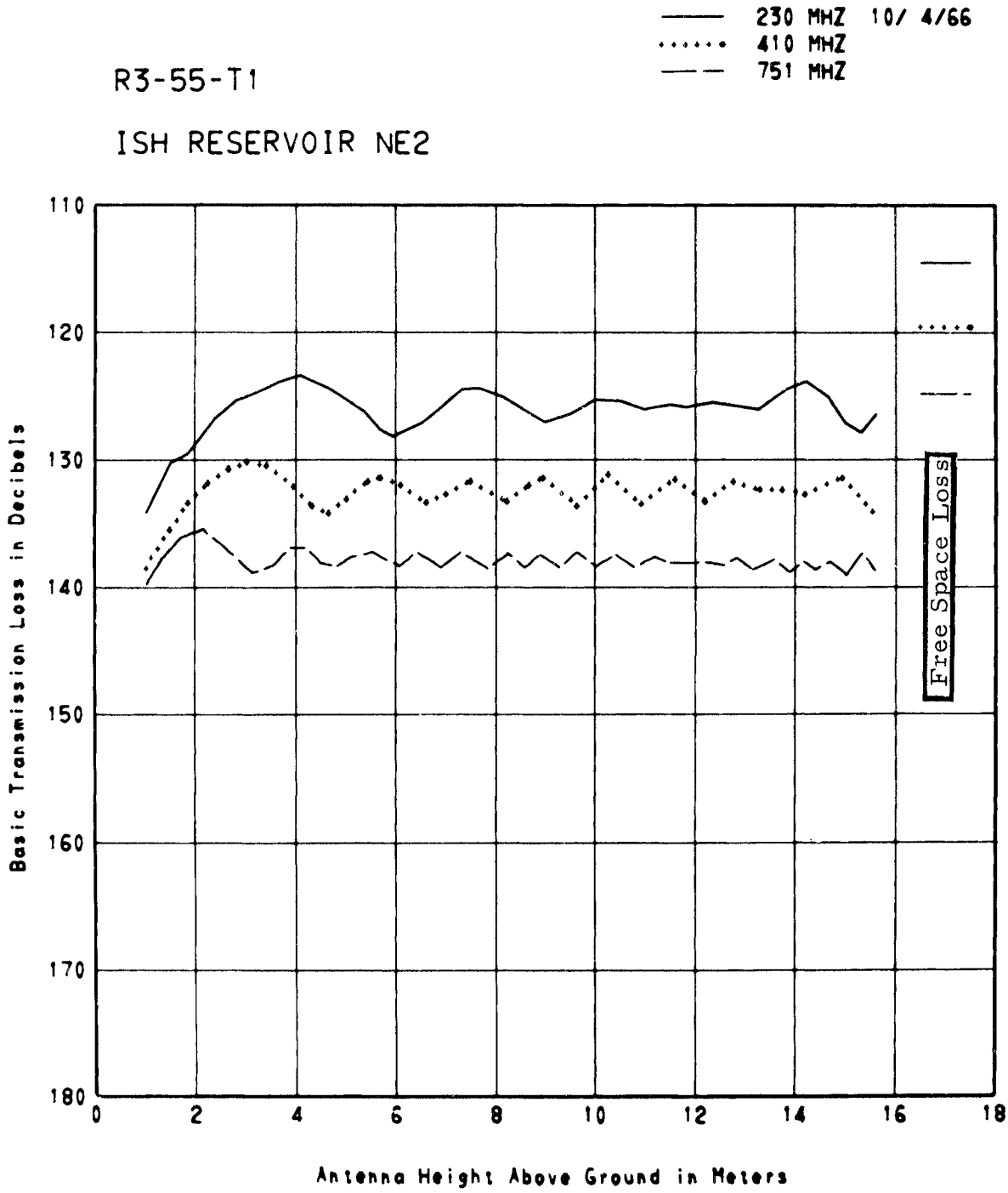
The site is located on a gravel road. Wild grass covers the path for 400 m. Then, the path is crossed by a highway, and power and telephone lines. There are metal buildings and nursery buildings at 500 m. There is low grass for the next 1.6 km, and then a stream and a row of 20-m high trees.

R3-55-T1
ISH RESERVOIR NE2

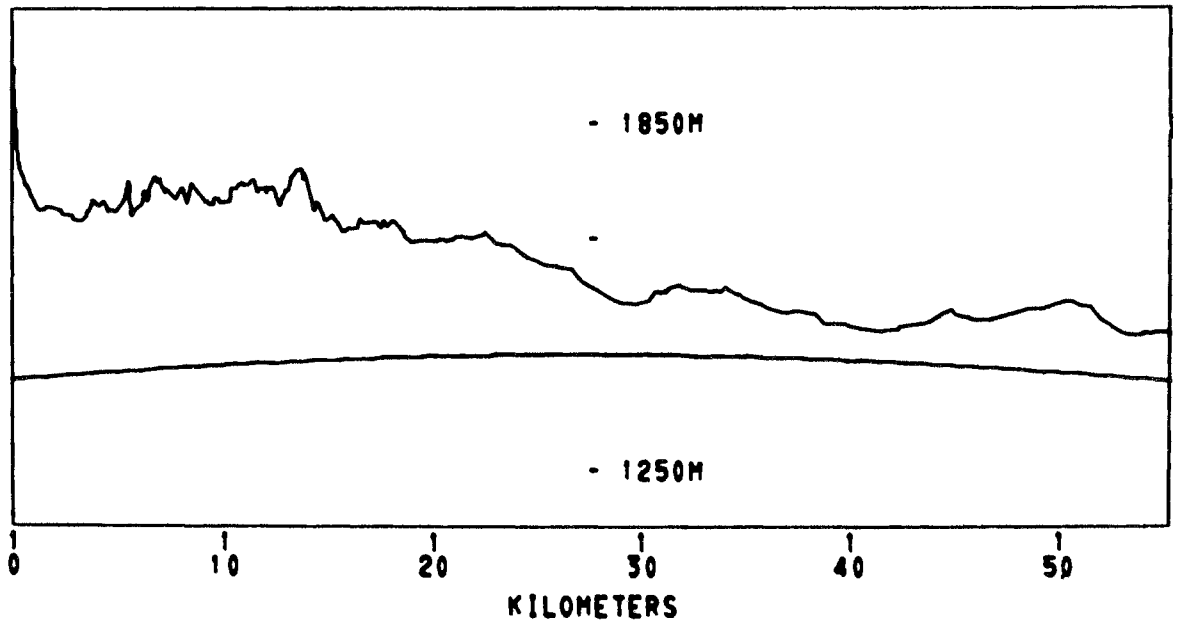


PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is
12° 52' 08" T.


230 MHZ 10/ 4/66
410 MHZ
751 MHZ
R3-55-T1
ISH RESERVOIR NE2
110
120
130
140
150
160
170
180
0
2
4
6
8
10
12
14
16
18
Basic Transmission Loss in Decibels
Antenna Height Above Ground in Meters
Free Space Loss

RCVR. ELEV.	R3-55-T1	XMTR. ELEV.
1995 M	PATH LENGTH 55.23 km	1533 M

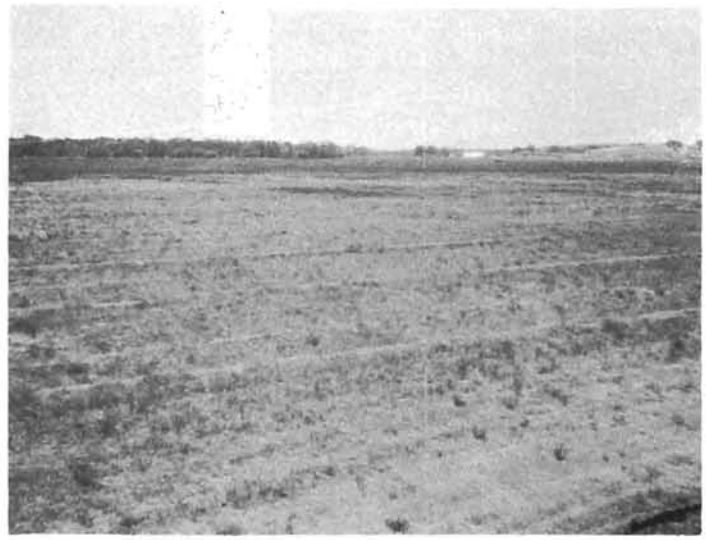


L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
	10-4-66 at 15 M						
50%	128.1	134.3	138.2				
Δ10%-90%	< 3	< 3	< 3				

The path extends over a wheat field for 2.4 km. A telephone line crosses the path at 65 m.

R3-60-T2 OPEN AND CONCEALED
MILLIKEN E2

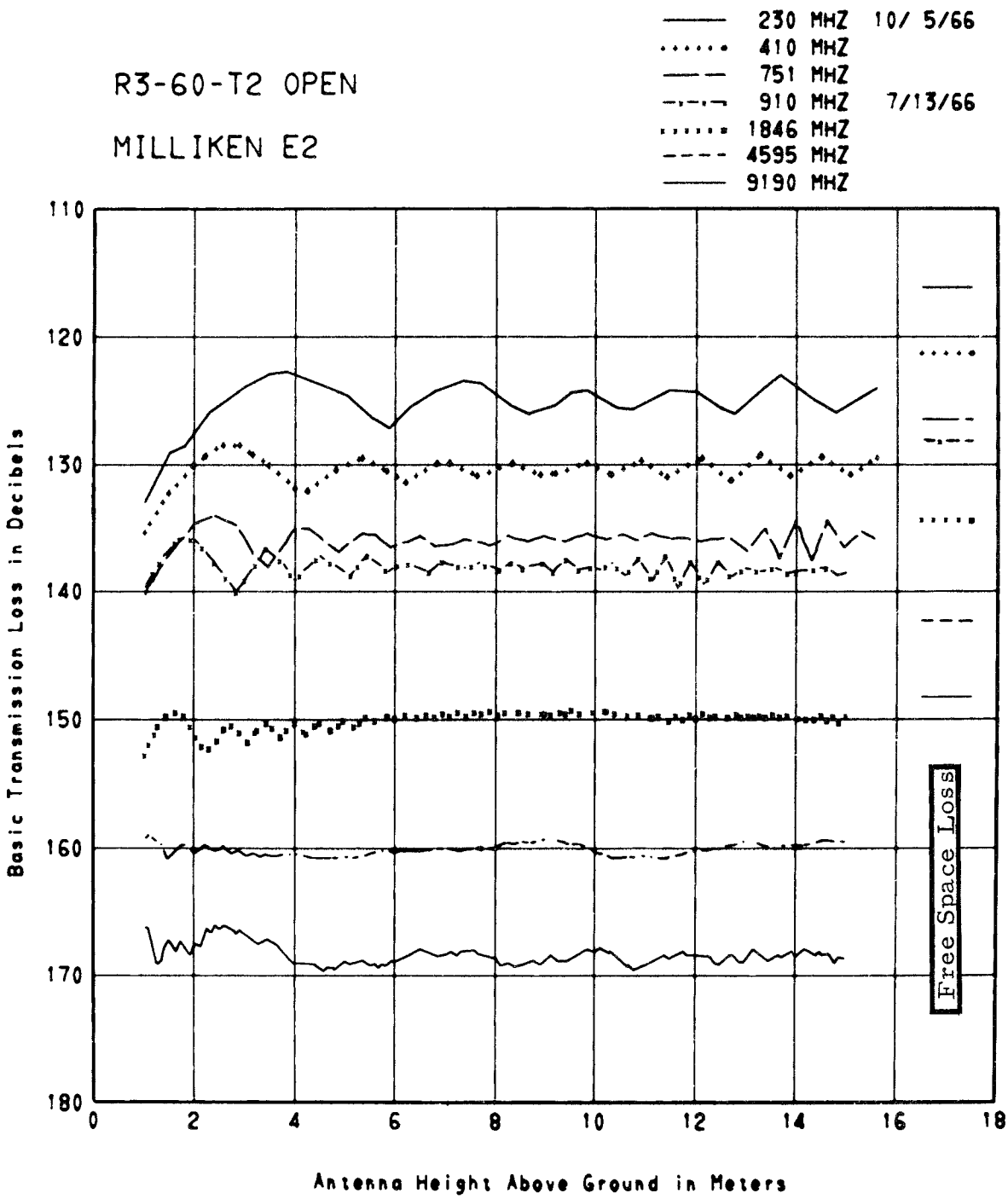


PATH VIEW FROM OPEN SITE

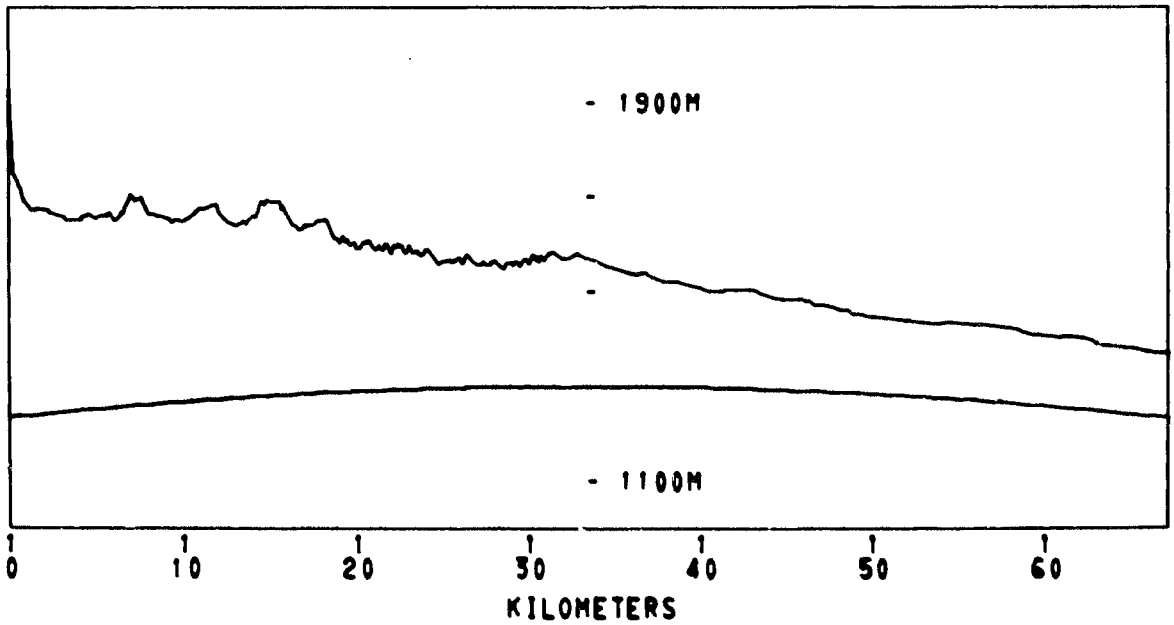
Bearing from common receiver site to transmitter site is 28^{o} 52' 39" T.

PATH VIEW FROM CONCEALED SITE

Bearing from common receiver site to transmitter site is 29^{o} 00' 24" T.


R3-60-T2 OPEN
MILLIKEN E2
230 MHZ 10/ 5/66
410 MHZ
751 MHZ
910 MHZ 7/13/66
1846 MHZ
4595 MHZ
9190 MHZ
Free Space Loss
Basic Transmission Loss in Decibels
Antenna Height Above Ground in Meters
110
120
130
140
150
160
170
180
0
2
4
6
8
10
12
14
16
18

RCVR. ELEV.	R3-60-T2 OPEN	XMTR. ELEV.
1995 M	PATH LENGTH 67.05 km	1436 M



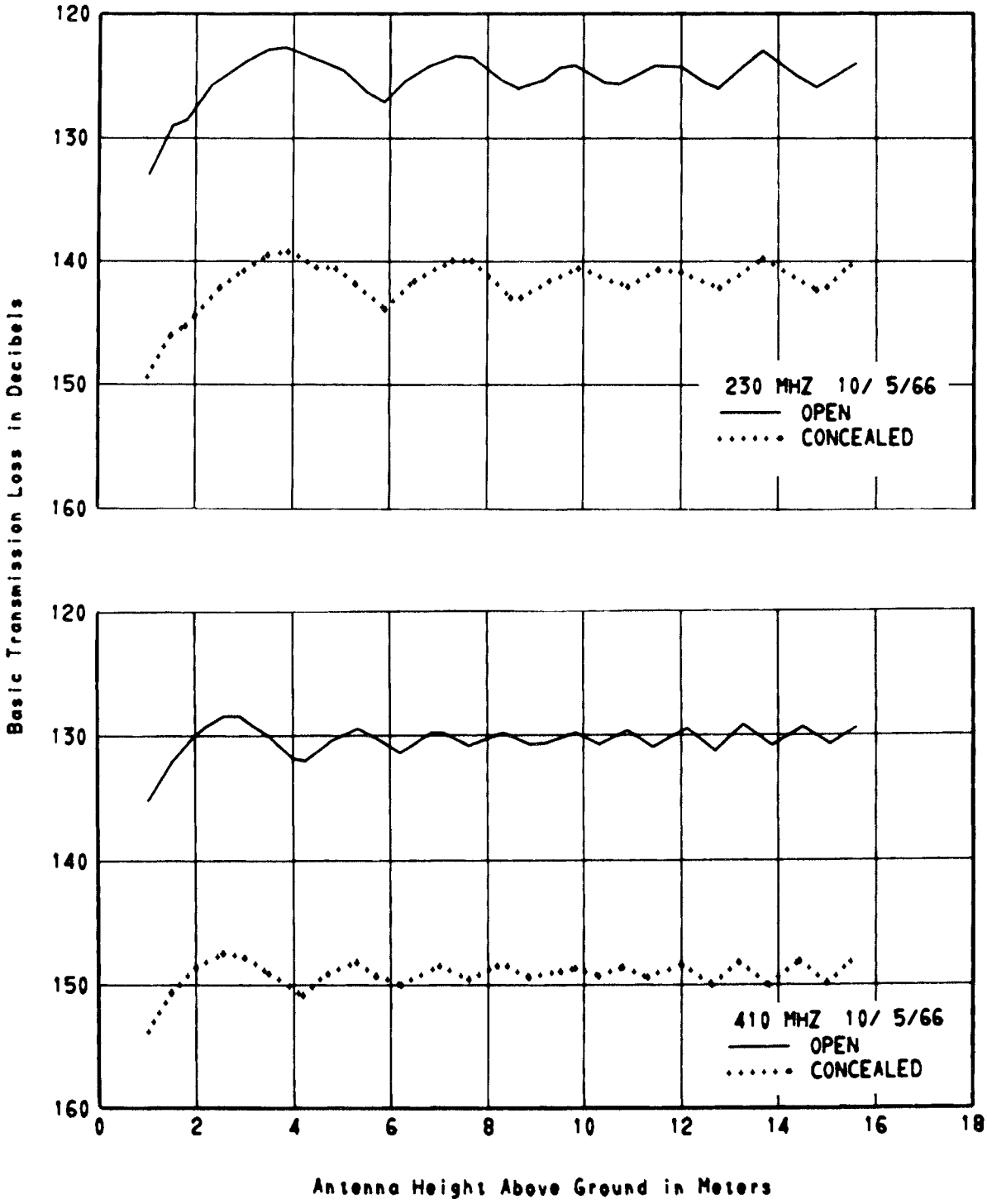
L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
	10-5-66 at 15 M				7-13-66 at 15 M		
50%	123.6	129.6	136.4	138.5	150.1	159.8	168.9
Δ10%-90%	< 3	< 3	< 3	< 3	< 3	< 3	< 3
					7-13-66 at 7.3 M		
50%				137.5	150.8	160.0	169.1
Δ10%-90%				< 3	< 3	< 3	< 3
					7-13-66 at 1 M		
50%				140.0	150.8	158.8	166.1
Δ10%-90%				<3	< 3	< 3	< 3

A semi-dry field occupies the first 0.8 km of the path. Then there is a large barn with a metal roof. The 17-m high trees behind the barn extend to the horizon.

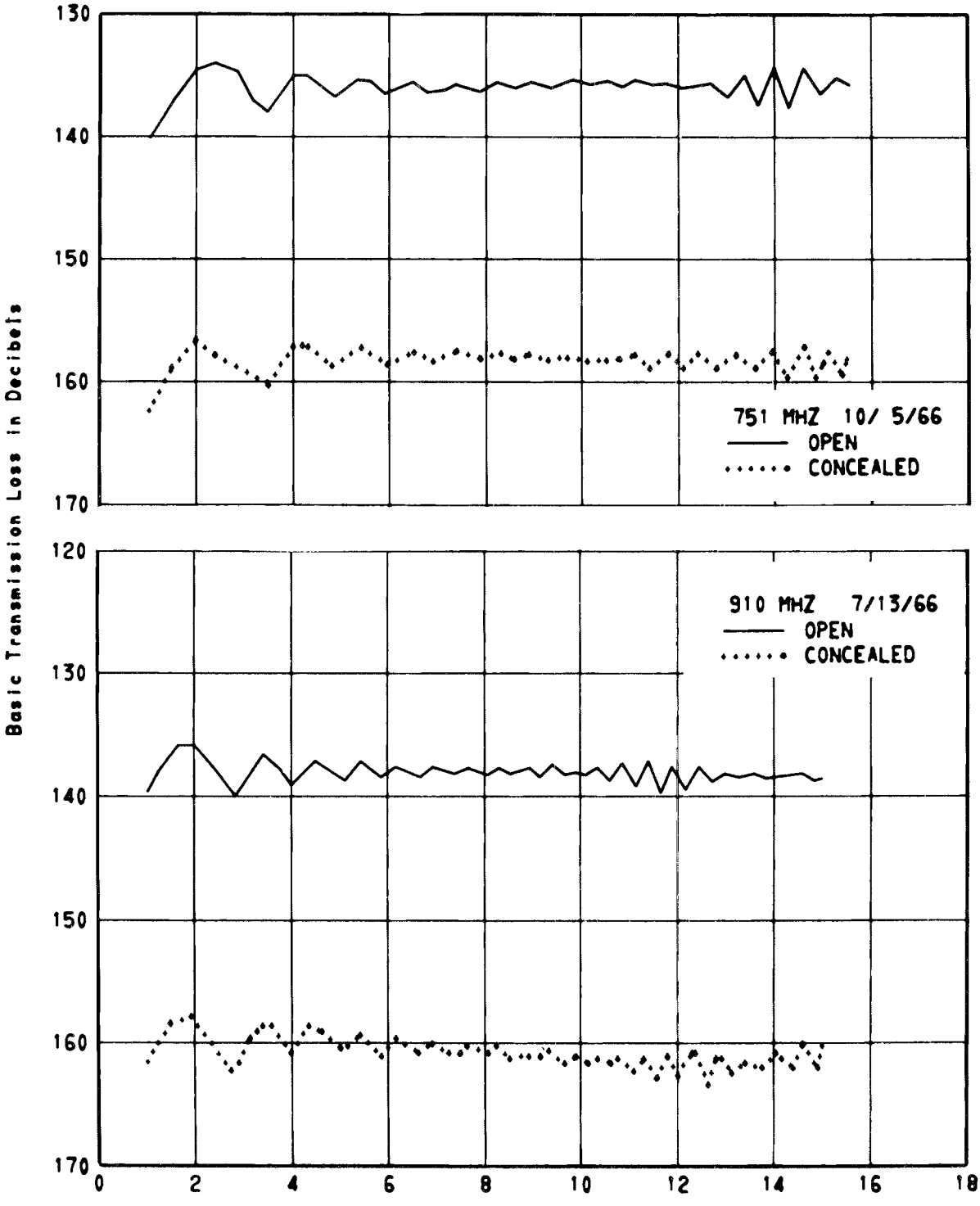
R3-60-T2 O&C

MILLIKEN E2



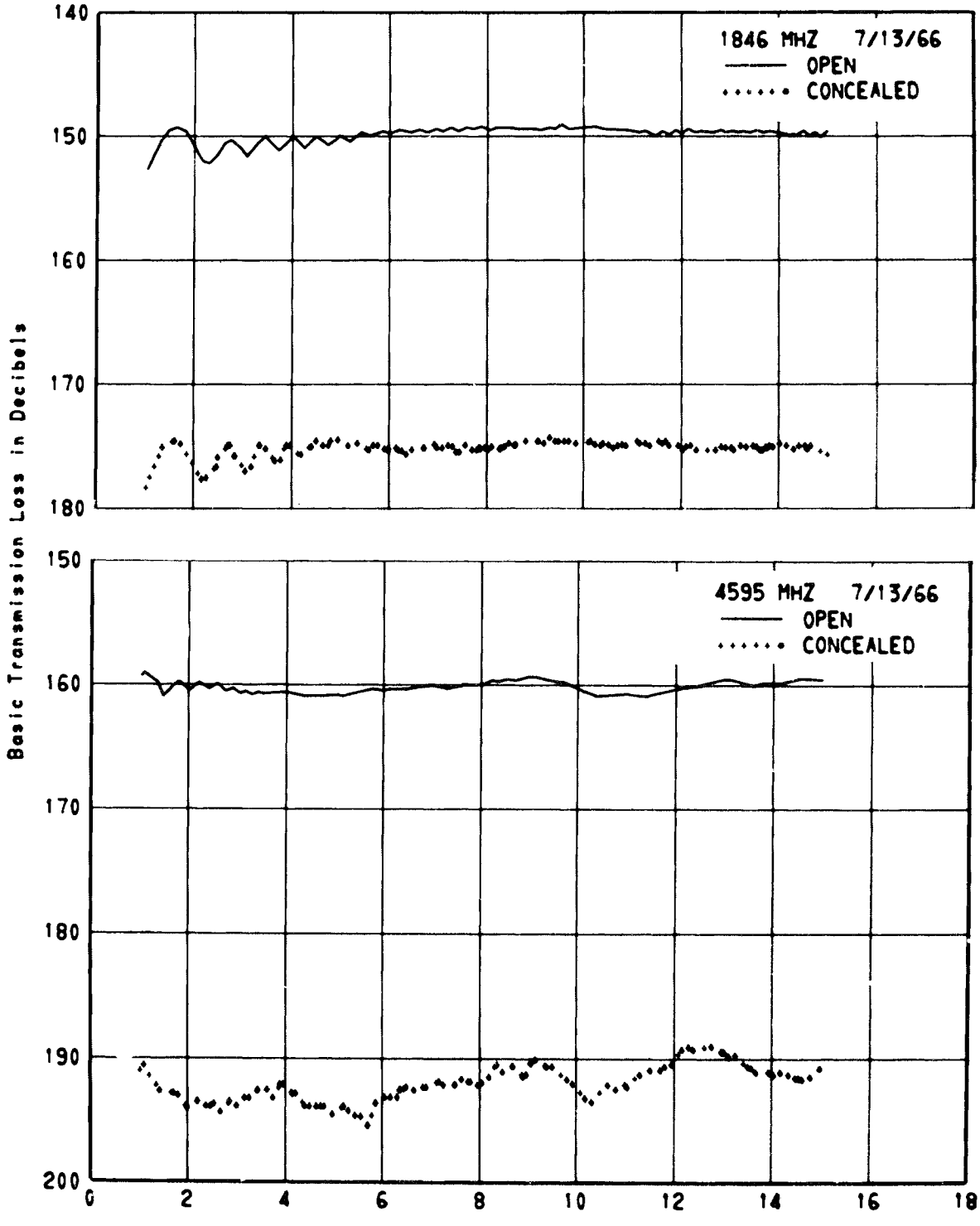
R3-60-T2 O&C

MILLIKEN E2

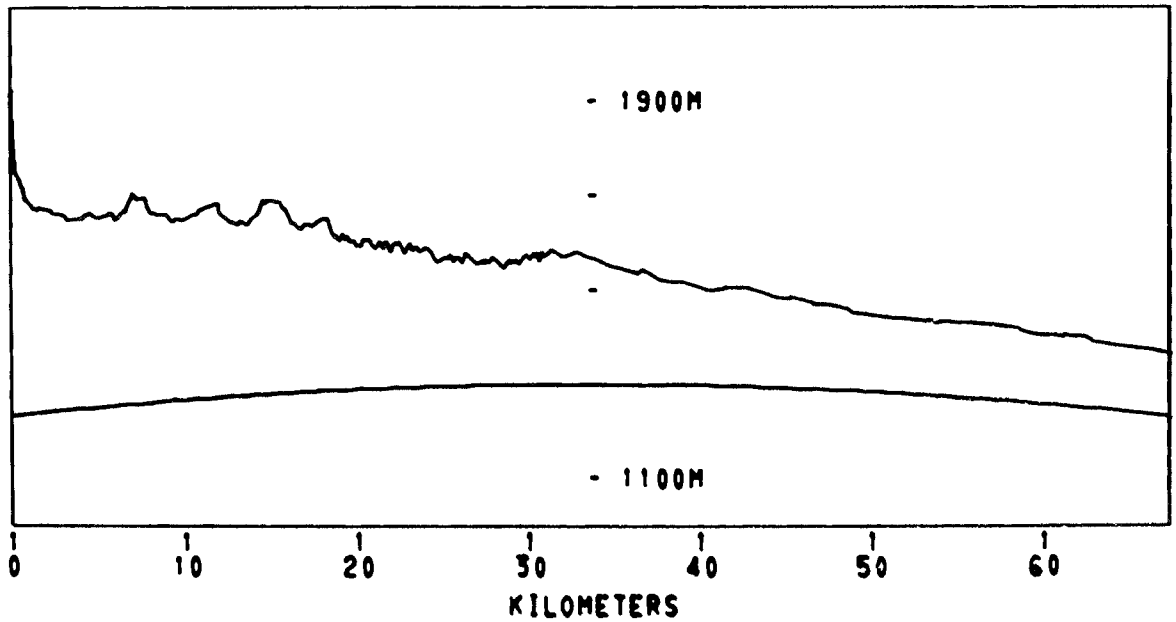


R3-60-T2 O&C

MILLIKEN E2



RCVR. ELEV.	R3-60-T2 CONCEALED	XMTR. ELEV.
1995 M	PATH LENGTH 67.27 km	1435 M



L_b (dB) SHORT TERM SIGNAL VARIABILITY

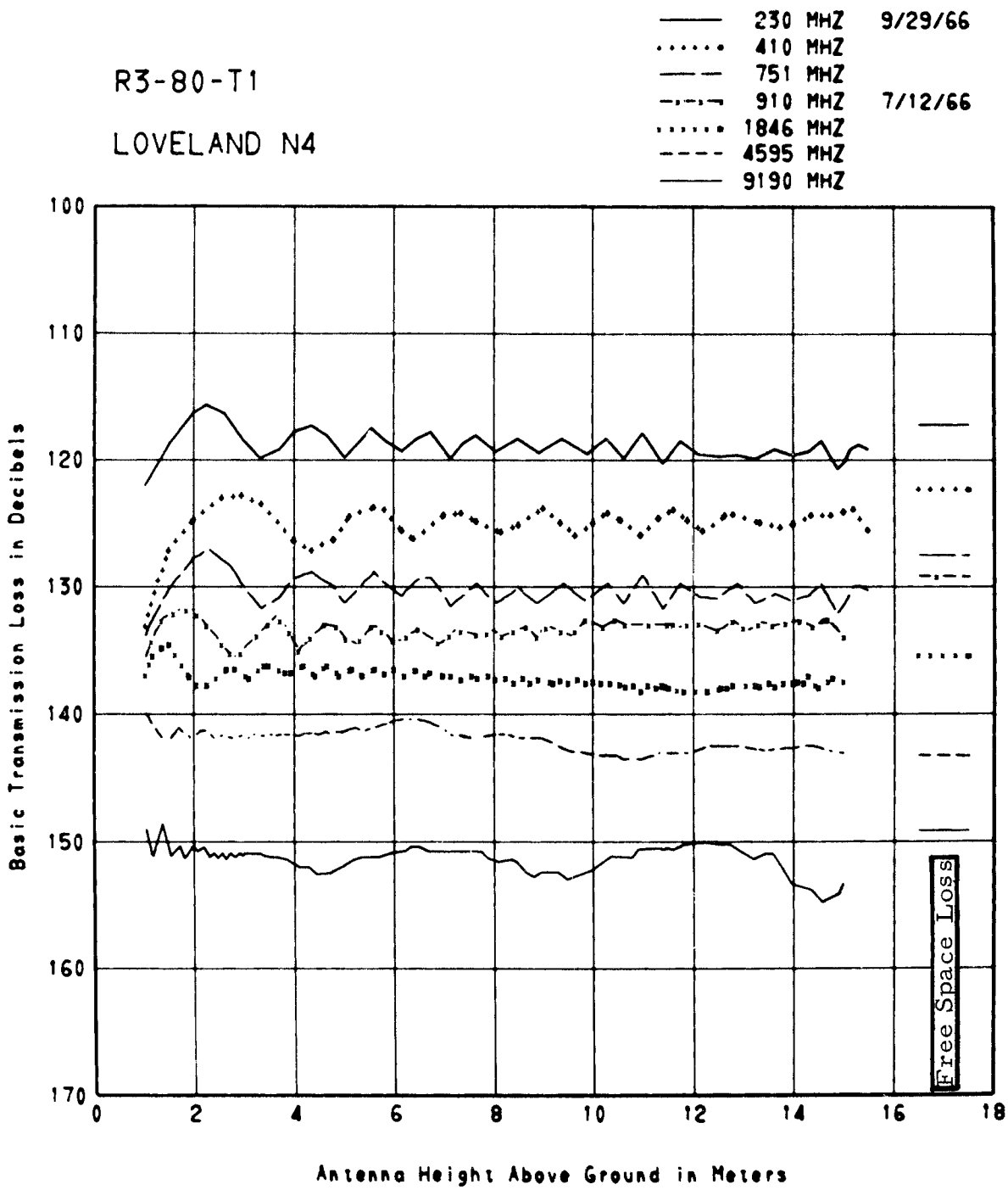
Freq(MHz)	230	410	751	910	1846	4595	9190
	10-5-66 at 15 M				7-13-66 at 15 M		
50%	139.9	148.1	159.9	162.5	174.7	193.0	
Δ10%-90%	<3	<3	<3	<3	<3	8.5	
					7-13-66 at 7.3 M		
50%				162.2	176.1	193.3	
Δ10%-90%				<3	<3	11.6	
					7-13-66 at 1 M		
50%				164.2	176.3	190.5	
Δ10%-90%				<3	<3	6.0	

The immediate foreground of the path is covered by dense, 17-m high trees.

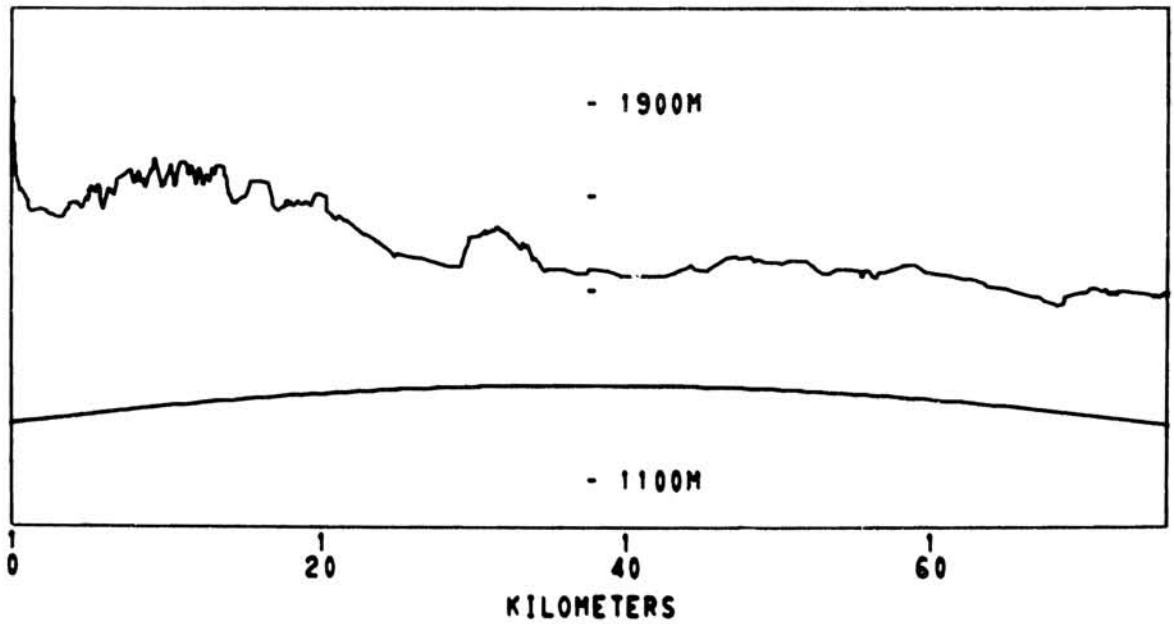
R3-80-T1
LOVELAND N4

PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is 05° 26' 40" T.


230 MHZ 9/29/66
410 MHZ
751 MHZ
910 MHZ 7/12/66
1846 MHZ
4595 MHZ
9190 MHZ
R3-80-T1
LOVELAND N4
Basic Transmission Loss in Decibels
100
110
120
130
140
150
160
170
0
2
4
6
8
10
12
14
16
18
Antenna Height Above Ground in Meters
Free Space Loss

RCVR. ELEV.	R3-80-T1	XMTR. ELEV.
1995 M	PATH LENGTH 75.82 km	1576 M



L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
	9-29-66 at 15 M				7-12-66 at 15 M		
50%	117.2	125.2	131.4	133.6	136.5	142.1	150.9
Δ10%-90%	< 3	< 3	< 3	< 3	< 3	< 3	< 3
					7-12-66 at 7.3 M		
50%				134.5	136.9	140.9	151.5
Δ10%-90%				< 3	< 3	< 3	< 3
					7-12-66 at 1 M		
50%				137.2	135.7	140.4	152.5
Δ10%-90%				< 3	< 3	< 3	3.6

The path extends over wheat and plowed fields for 3.2 km. There is a fence in the immediate foreground. There are a few trees at 3.2 km.

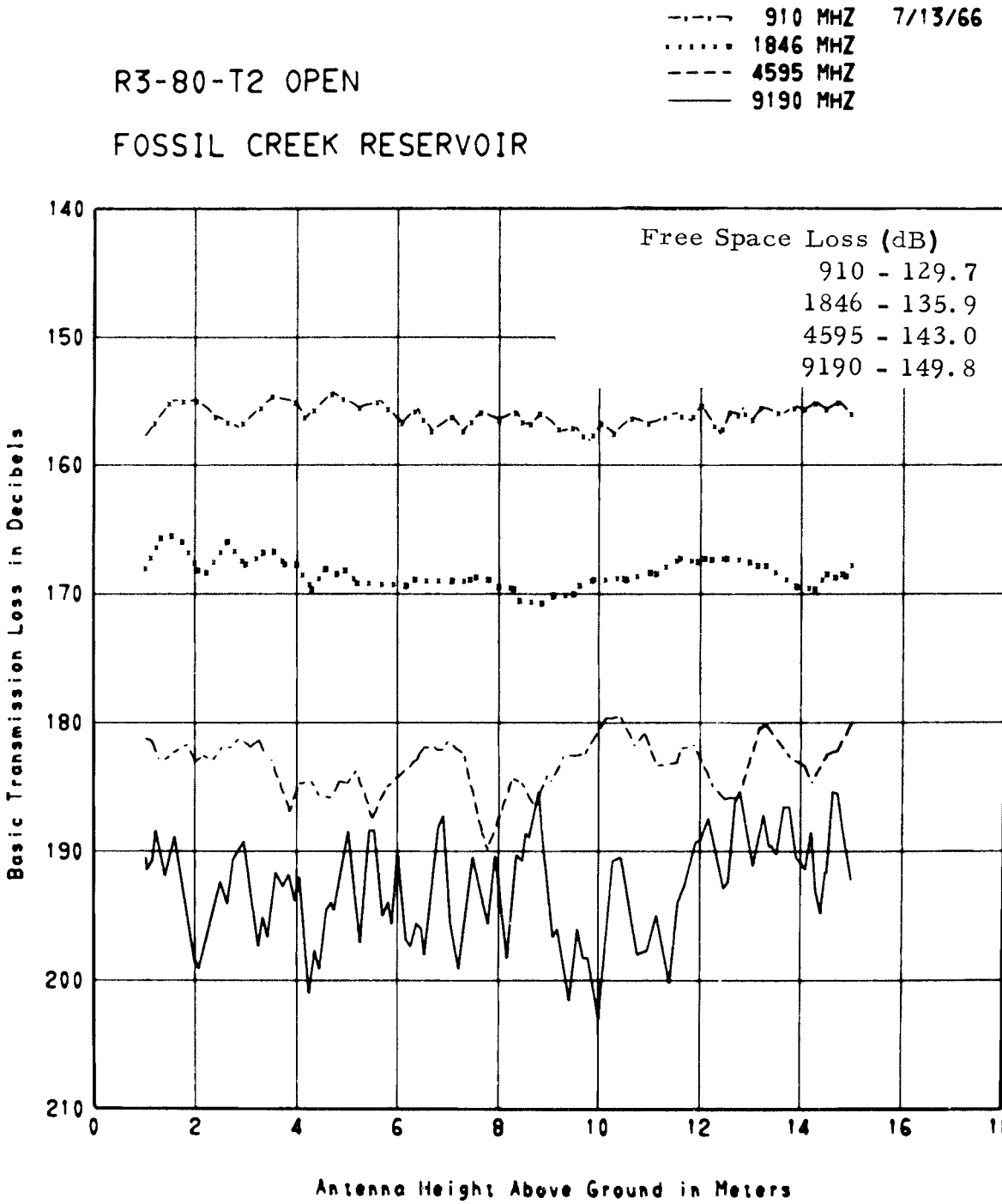
R3-80-T2 OPEN AND CONCEALED
FOSSIL CREEK RESERVOIR

PATH VIEW FROM OPEN SITE

Bearing from common receiver site to transmitter site is
12° 41' 11" T.

PATH VIEW FROM CONCEALED SITE

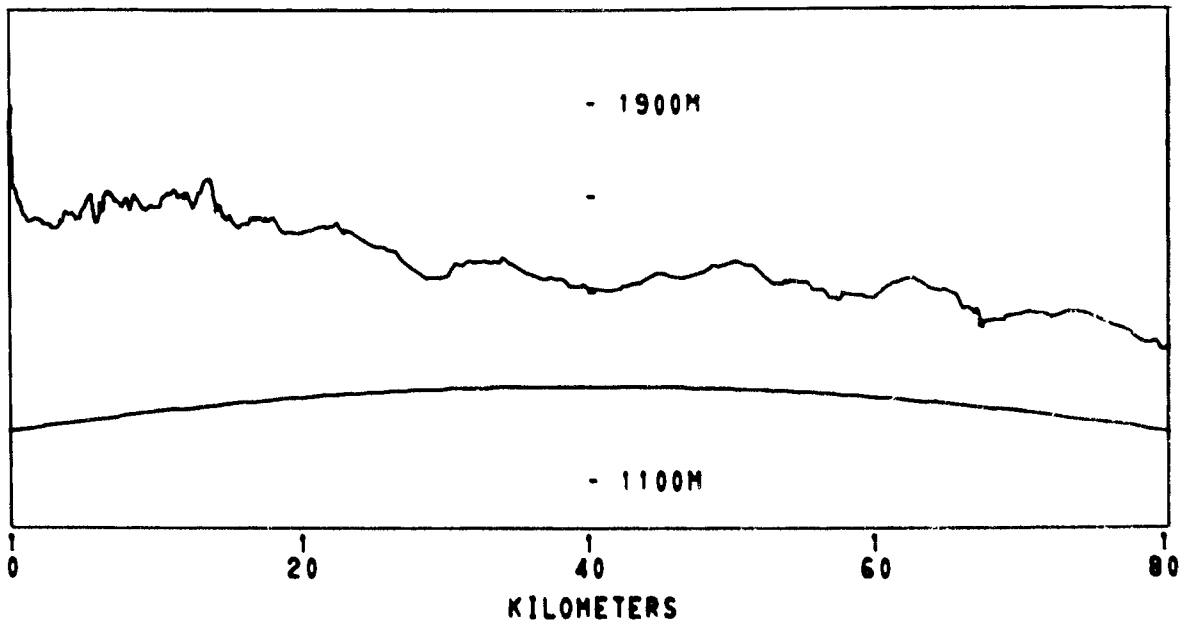
Bearing from common receiver site to transmitter site is
12° 39' 01" T.


910 MHZ 7/13/66
1846 MHZ
4595 MHZ
9190 MHZ
R3-80-T2 OPEN
FOSSIL CREEK RESERVOIR
Free Space Loss (dB)
910 - 129.7
1846 - 135.9
4595 - 143.0
9190 - 149.8
Basic Transmission Loss in Decibels
140
150
160
170
180
190
200
210
0
2
4
6
8
10
12
14
16
18
Antenna Height Above Ground in Meters

RCVR. ELEV.
1995 M

R3-80-T2 OPEN
PATH LENGTH 80.27 km

XMTR. ELEV.
1481 M



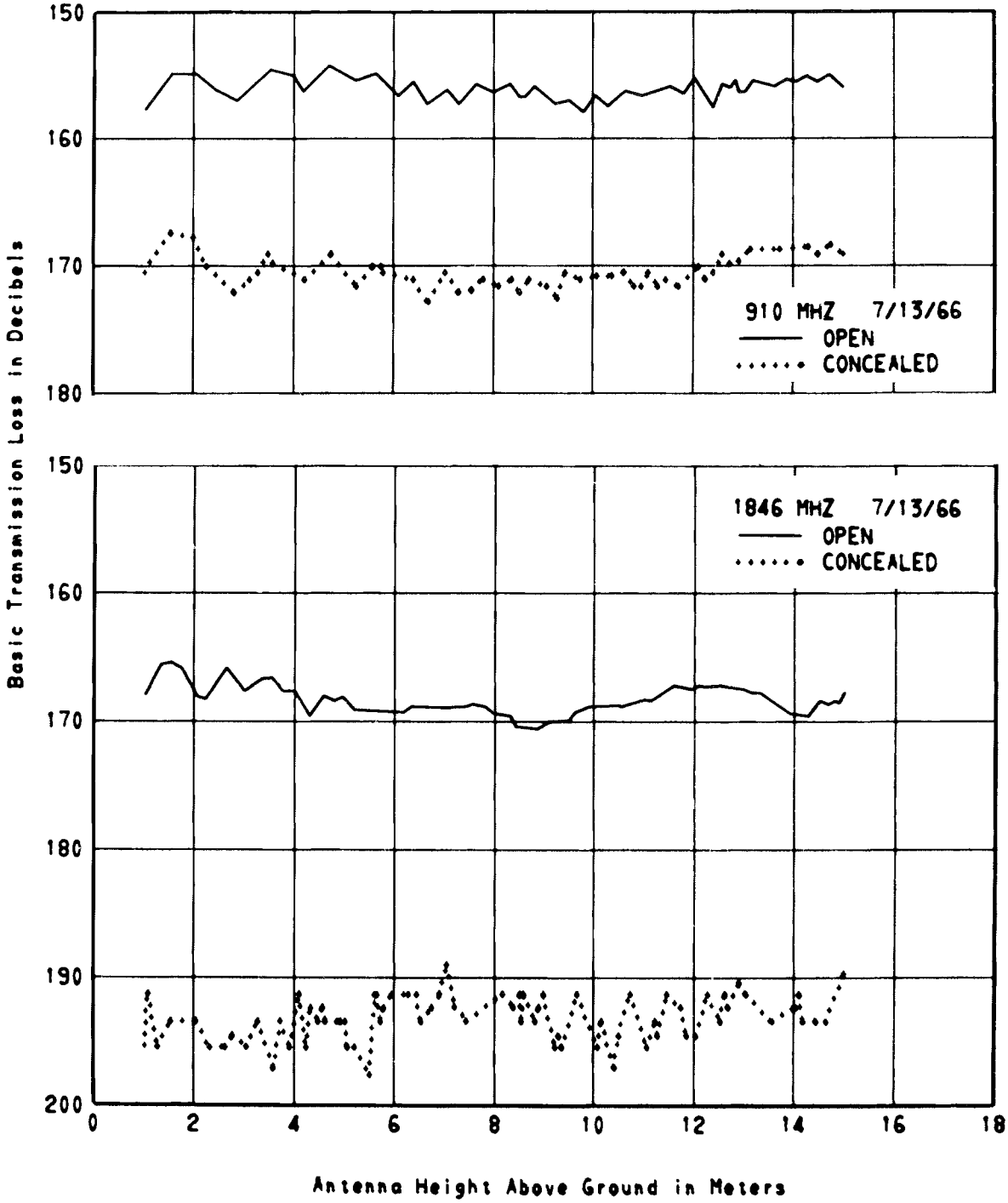
L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
					7-13-66 at 15 M		
50%				155.3	167.1	182.1	190.2
Δ10%-90%				< 3	< 3	4.6	7.8
					7-13-66 at 7.3 M		
50%				156.6	168.3	183.0	190.5
Δ10%-90%				< 3	< 3	4.6	8.0
					7-13-66 at 1 M		
50%				158.0	167.5	181.1	192.6
Δ10%-90%				< 3	< 3	5.0	8.6

At 100 m, there is a 10-m high tree to the left of the path. On the right of the path is a dam, which is 5 m high. Plowed fields and scattered trees extend beyond this to the horizon.

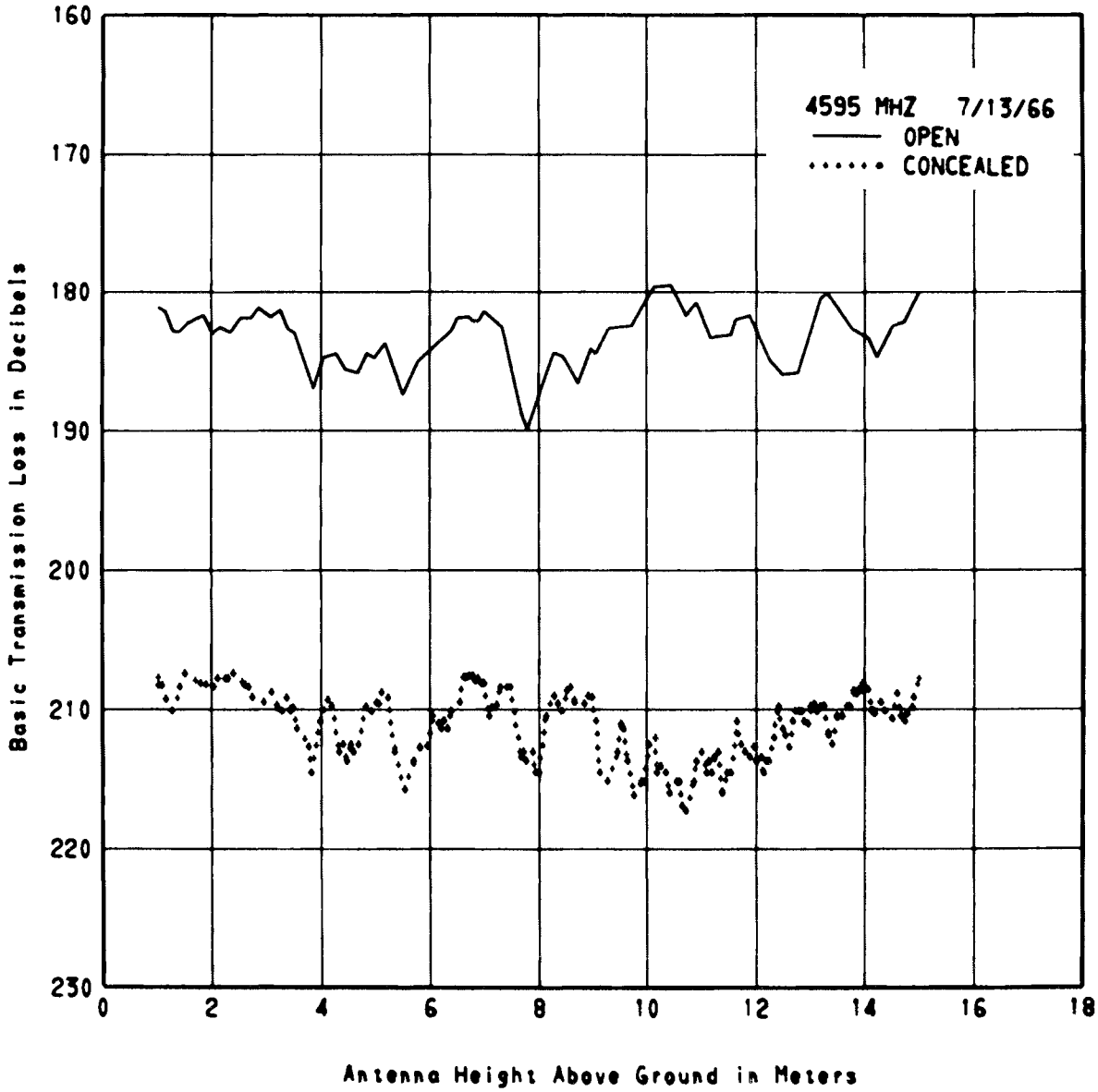
R3-80-T2 O&C

FOSSIL CREEK RESERVOIR

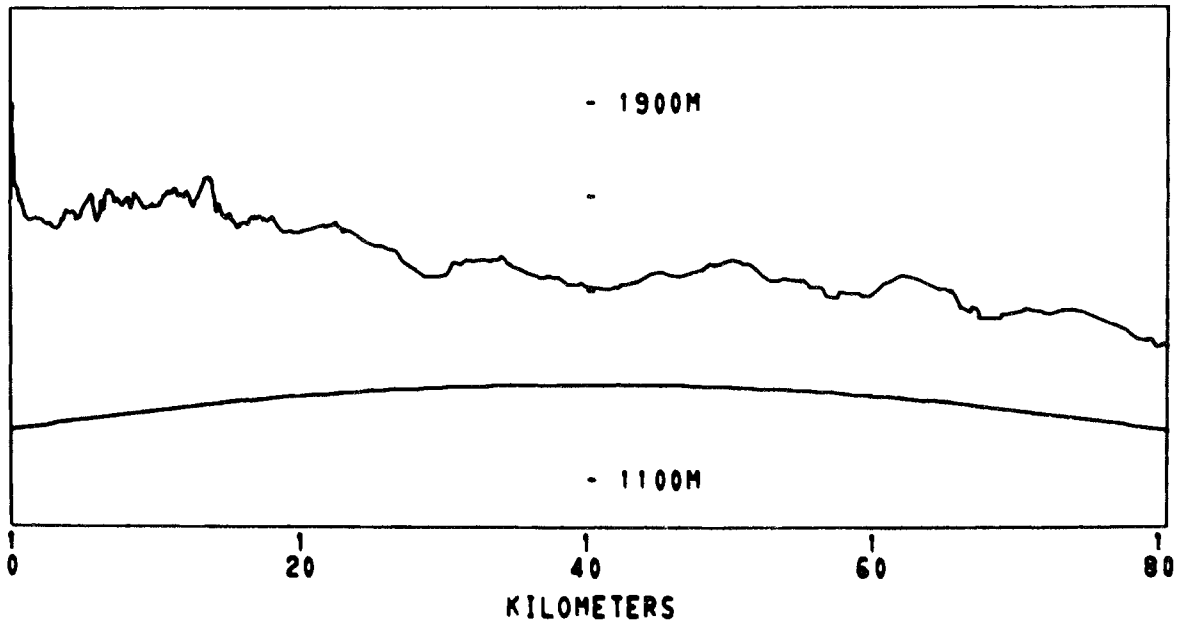


R3-80-T2 O&C

FOSSIL CREEK RESERVOIR



RCVR. ELEV.	R3-80-T2 CONCEALED	XMTR. ELEV.
1995 M	PATH LENGTH 80.50 km	1480 M

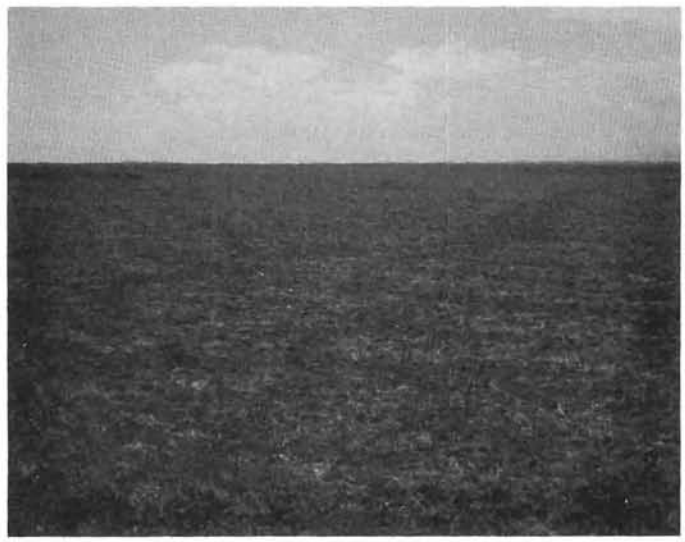


L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
					7-13-66 at 15 M		
50%				170.8	188.3	208.7	
Δ10%-90%				3.4	< 3	7.2	
					7-13-66 at 7.3 M		
50%				171.9	189.3	206.2	
Δ10%-90%				< 3	< 3	6.8	
					7-13-66 at 1 M		
50%				170.5	193.3	207.8	
Δ10%-90%				<3	< 3	9.4	

Marsh lands and 15-m high trees extend for 70 m to a 5-m high bank at the edge of a lake. The path crosses the lake for 0.80 km.

R3-80-T3
WINDSOR SE3

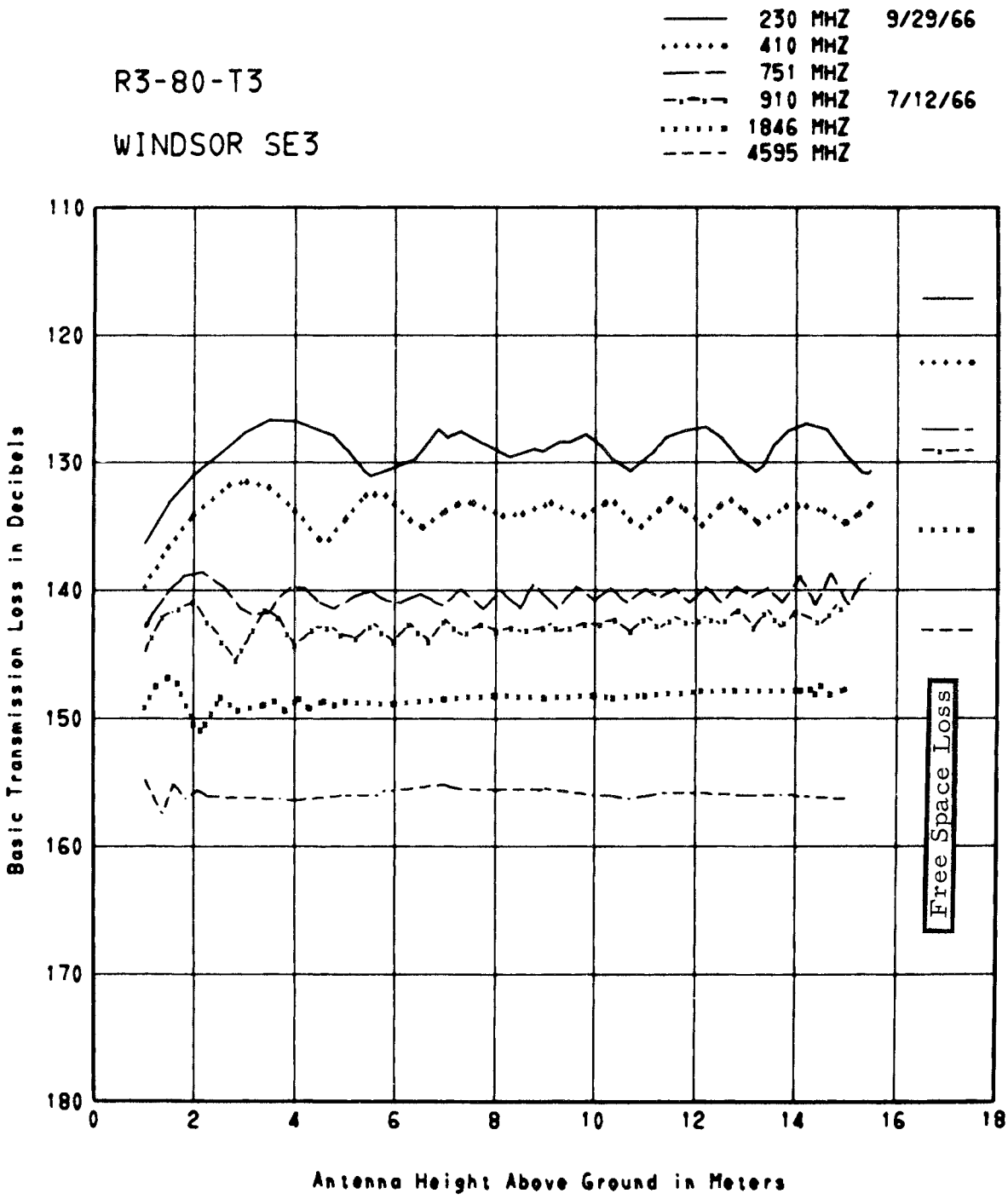


PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is
15° 14' 13" T.

R3-80-T3

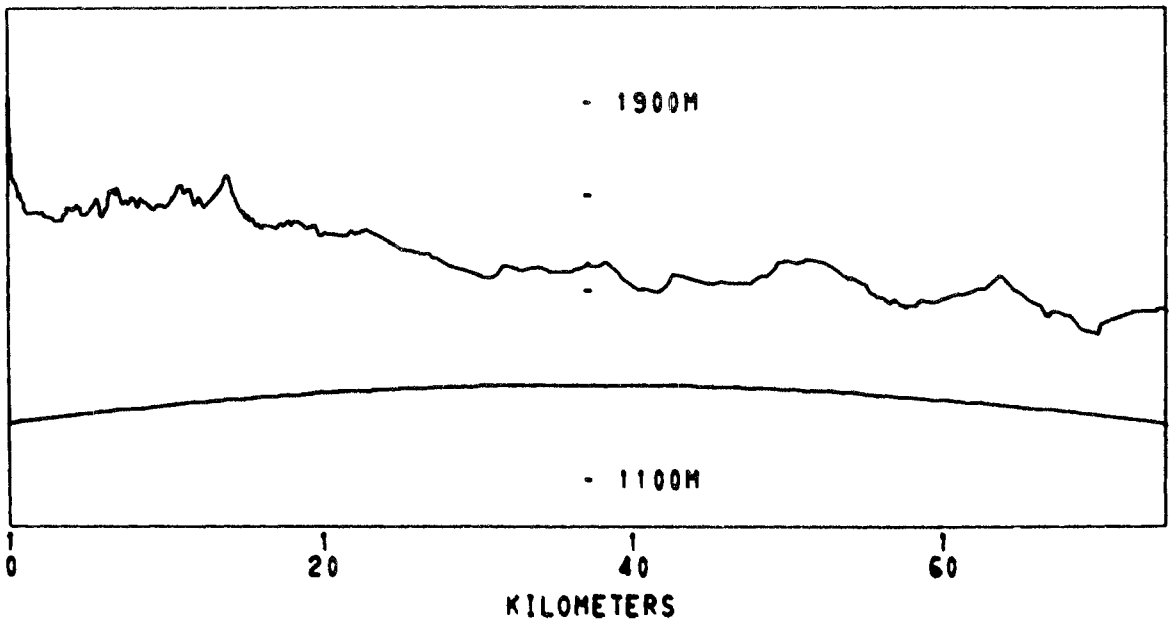
WINDSOR SE3



RCVR. ELEV.
1995 M

R3-80-T3
PATH LENGTH 74.26 km

XMTR. ELEV.
1540 M



L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
	9-29-66 at 15 M				7-12-66 at 15 M		
50%	130.5	132.5	138.2	141.5	147.2	157.1	
Δ10%-90%	< 3	< 3	< 3	< 3	< 3	< 3	
					7-12-66 at 7.3 M		
50%				142.8	147.4	154.2	
Δ10%-90%				< 3	< 3	< 3	
					7-12-66 at 1 M		
50%				145.3	148.7	153.6	
Δ10%-90%				< 3	< 3	< 3	

The first 19 km of the path is dry and bare land. Then there are a few trees. A highway crosses the path at 8 km.

R3-80-T5
LOWER LATHAM RESERVOIR E1

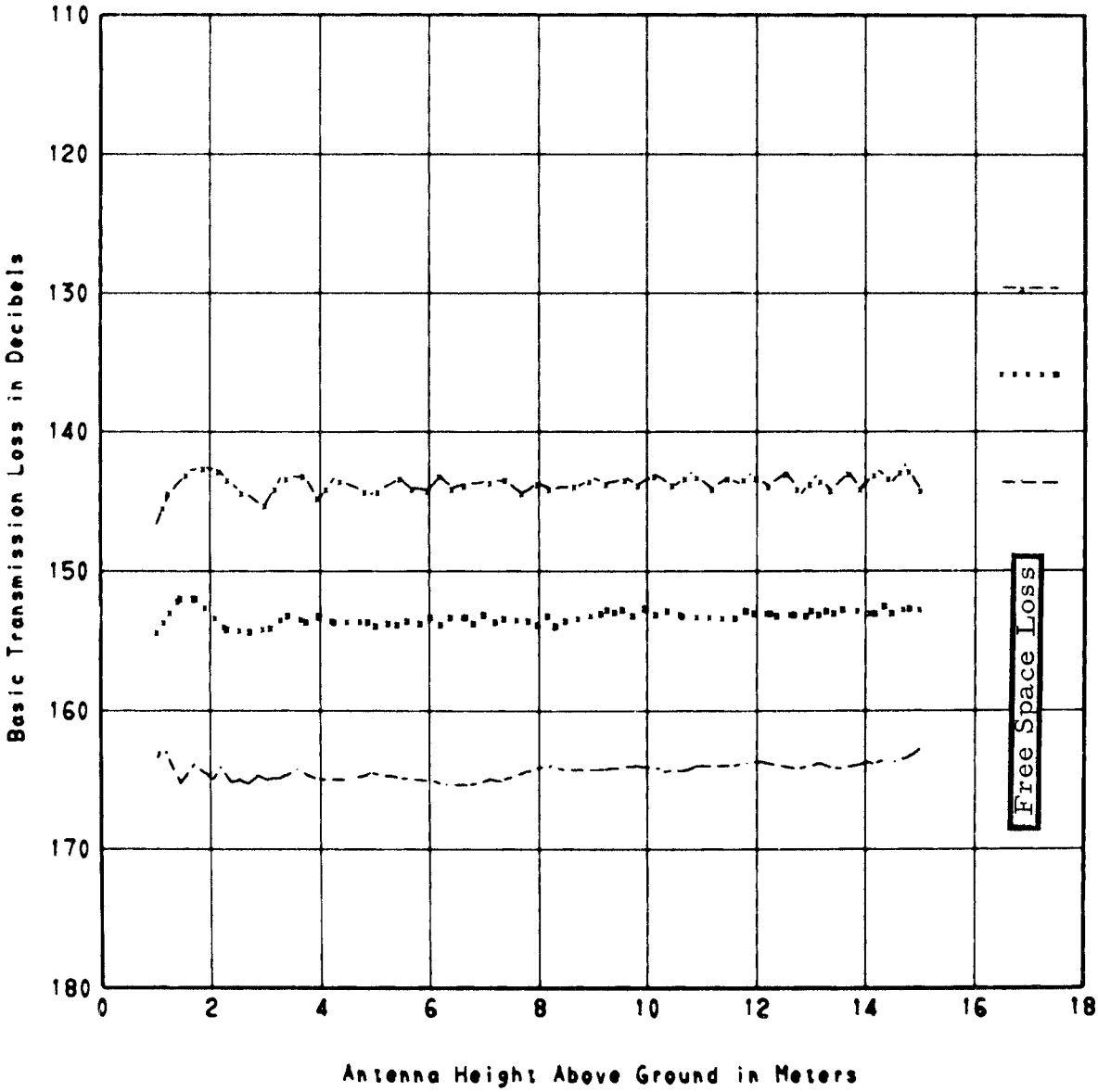
PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is
38° 29' 26" T.

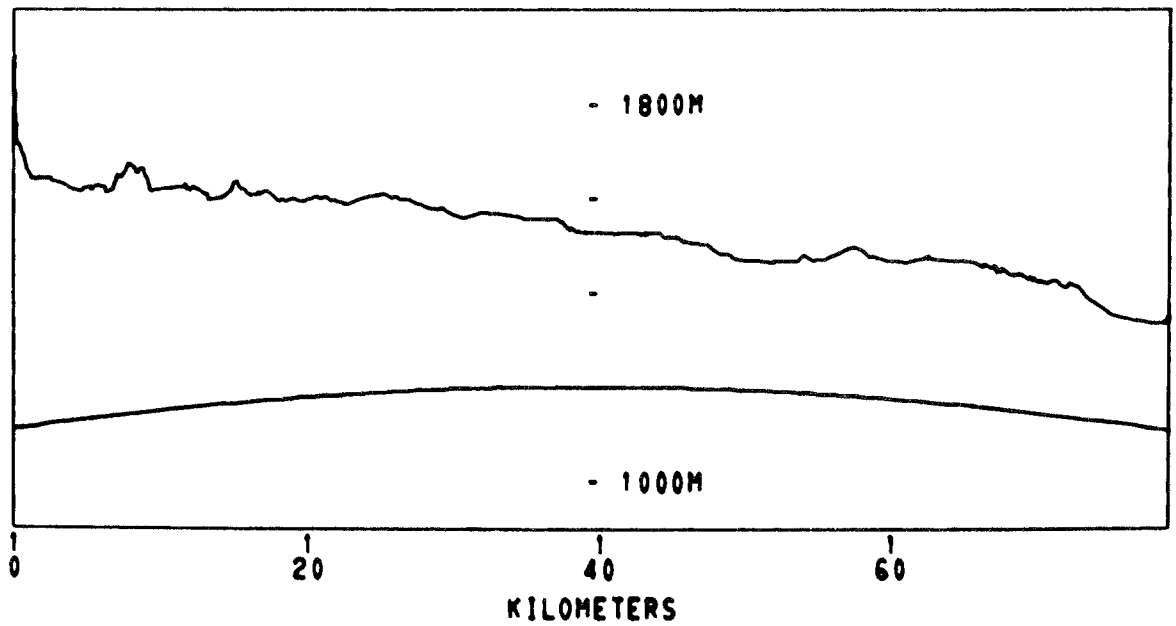
910 MHZ 7/11/66
1846 MHZ
4595 MHZ

R3-80-T5

LOWER LATHAM RESERVOIR E1



RCVR. ELEV.	R3-80-T5	XMTR. ELEV.
1995 M	PATH LENGTH 78.86 km	1442 M



L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
					7-11-66 at 15 M		
50%				144.4	151.3	164.6	
Δ10%-90%				< 3	< 3	< 3	
					7-11-66 at 7.3 M		
50%				143.6	152.2	165.5	
Δ10%-90%				< 3	< 3	< 3	
					7-11-66 at 1 M		
50%				147.5	152.5	163.8	
Δ10%-90%				< 3	< 3	4.0	

The path extends over dry, wheat stubble for 8 km. There are 15-m high trees at 0.8 km.

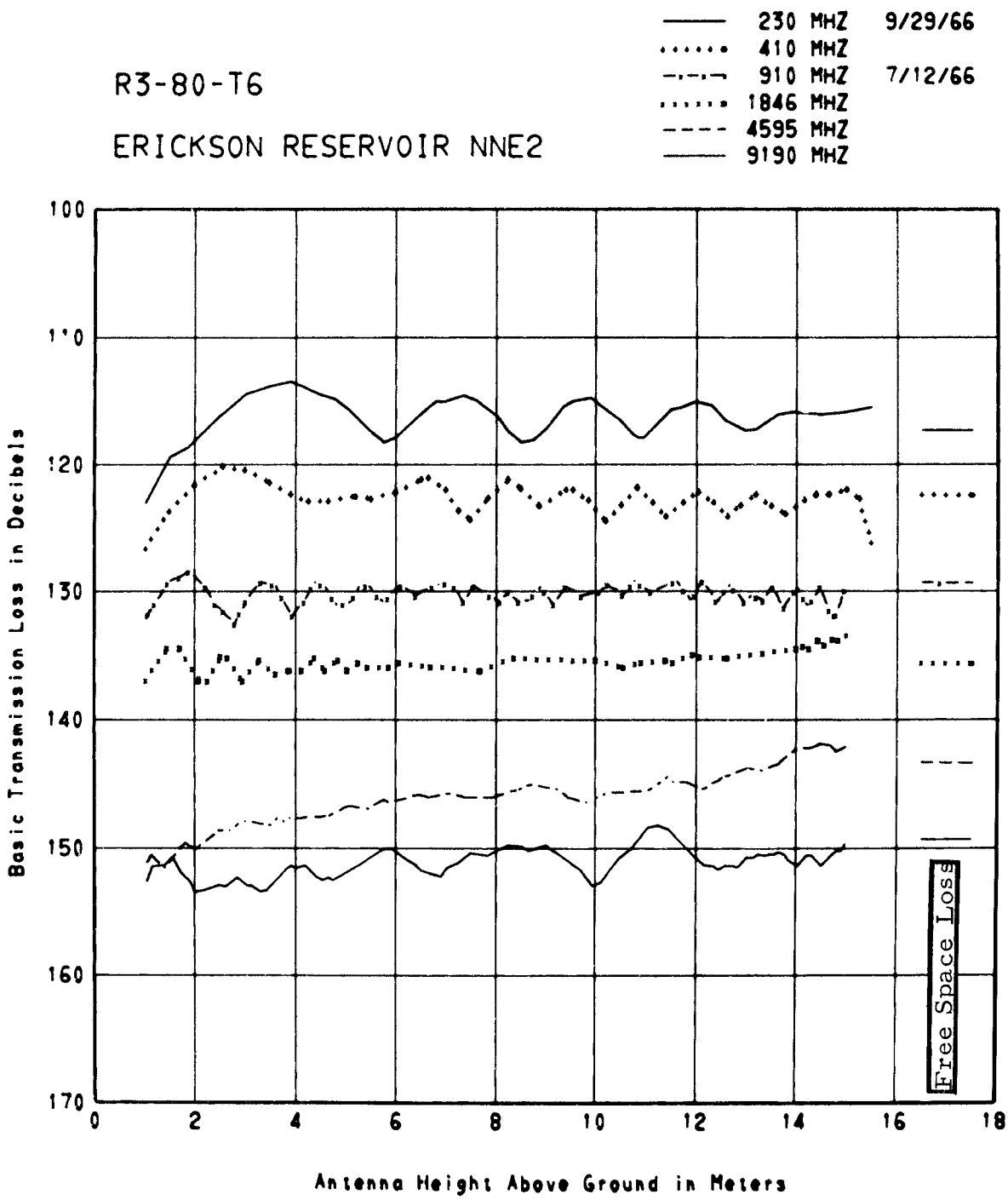
R3-80-T6
ERICKSON RESERVOIR NE2

PATH VIEW FROM TRANSMITTER

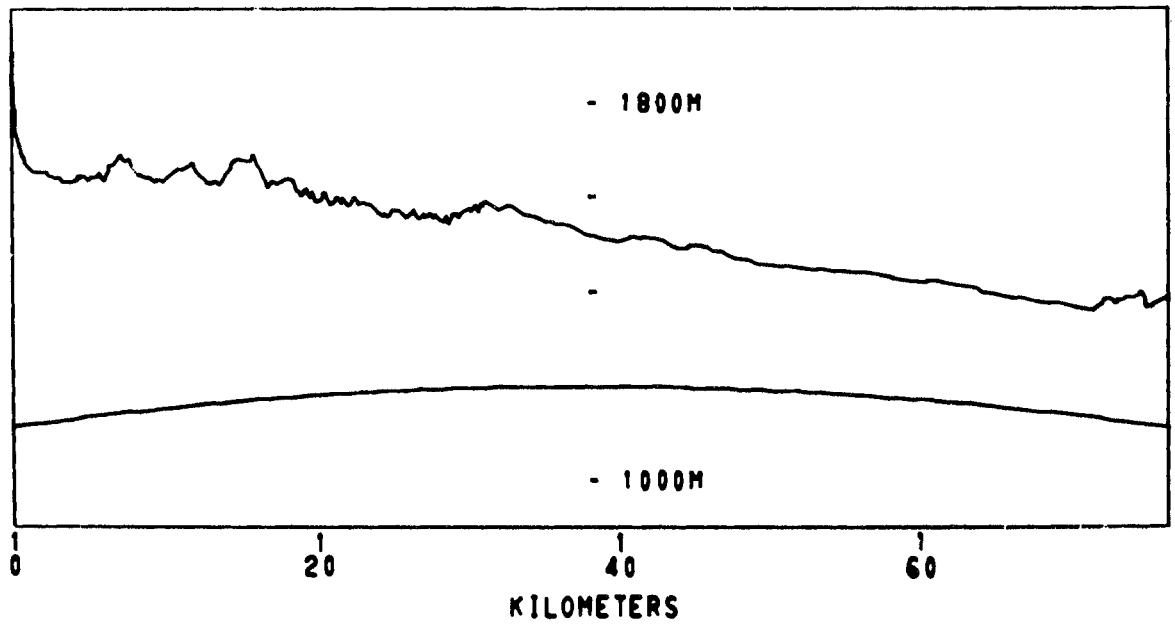
Bearing from common receiver site to transmitter site is
29° 30' 10" T.

R3-80-T6

ERICKSON RESERVOIR NNE2



RCVR. ELEV.	R3-80-T6	XMTR. ELEV.
1995 M	PATH LENGTH 76.35 km	1479 M

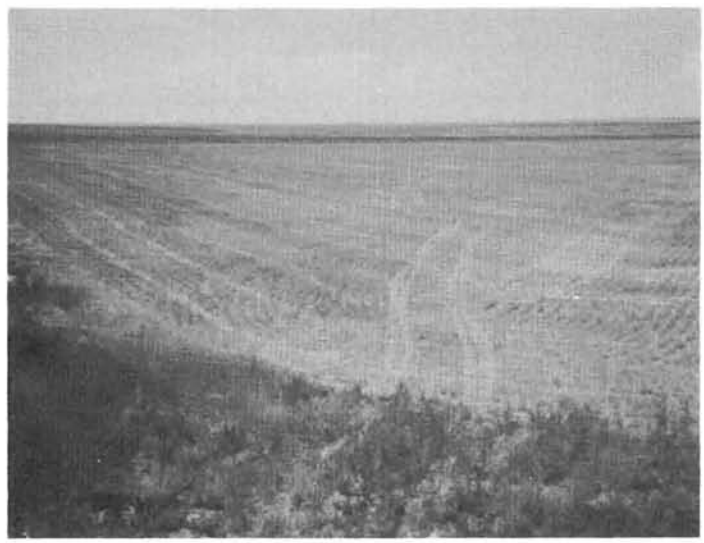


L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
	9-29-66 at 15 M				7-12-66 at 15 M		
50%	115.2	121.9		125.7	134.3	138.3	151.4
Δ10%-90%	< 3	< 3		5.0	< 3	4.0	6.4
					7-12-66 at 7.3 M		
50%				130.5	136.3	145.9	153.7
Δ10%-90%				< 3	< 3	5.9	7.0
					7-12-66 at 1 M		
50%				132.0	133.3	139.9	149.7
Δ10%-90%				< 3	4.0	6.8	4.5

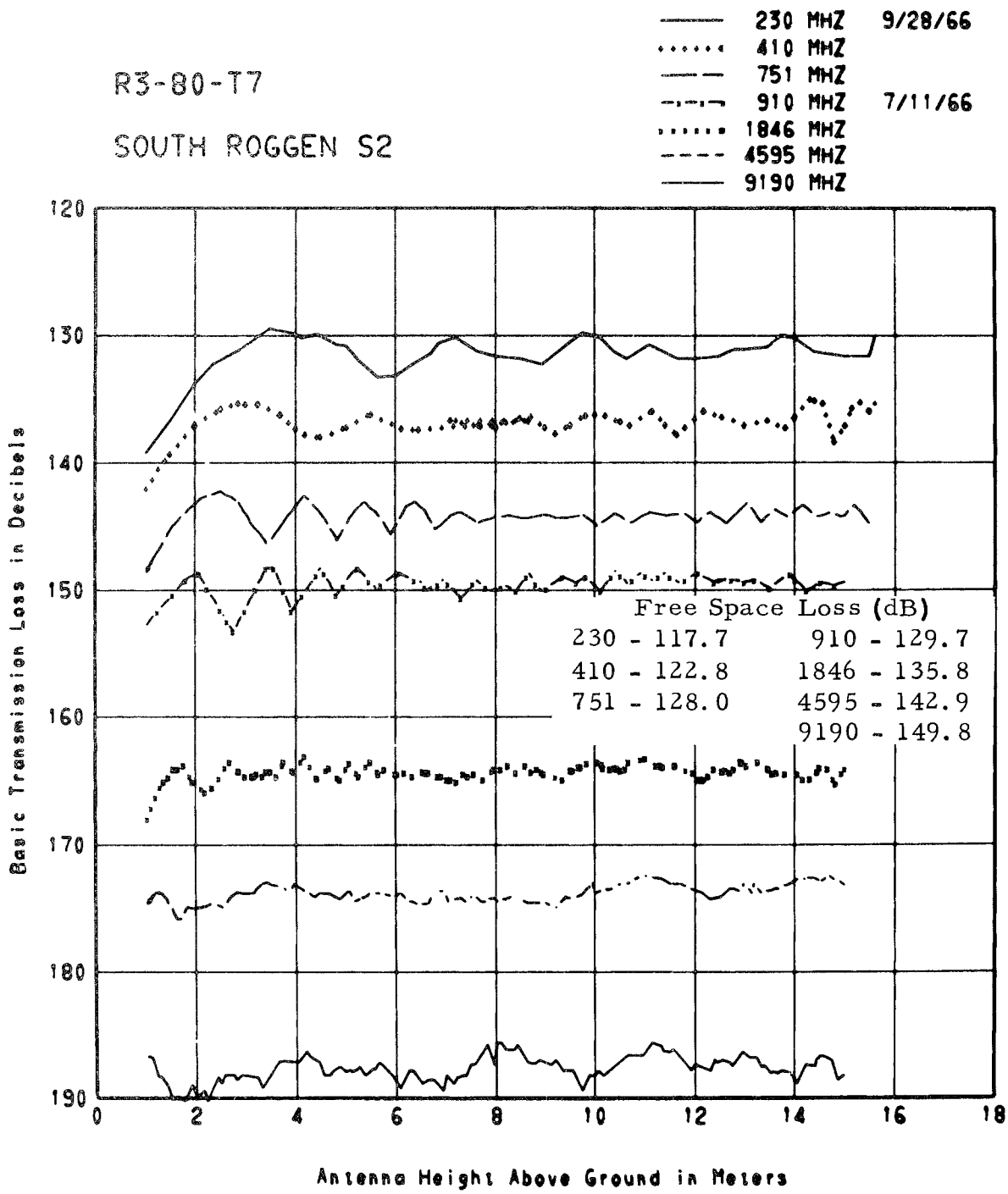
In the immediate foreground, there is a low fence and a 1-m high corn field which extends for 0.8 km. There are 15-m high trees on either side of the path at 0.4 km.

R3-80-T7
SOUTH ROGGEN S2

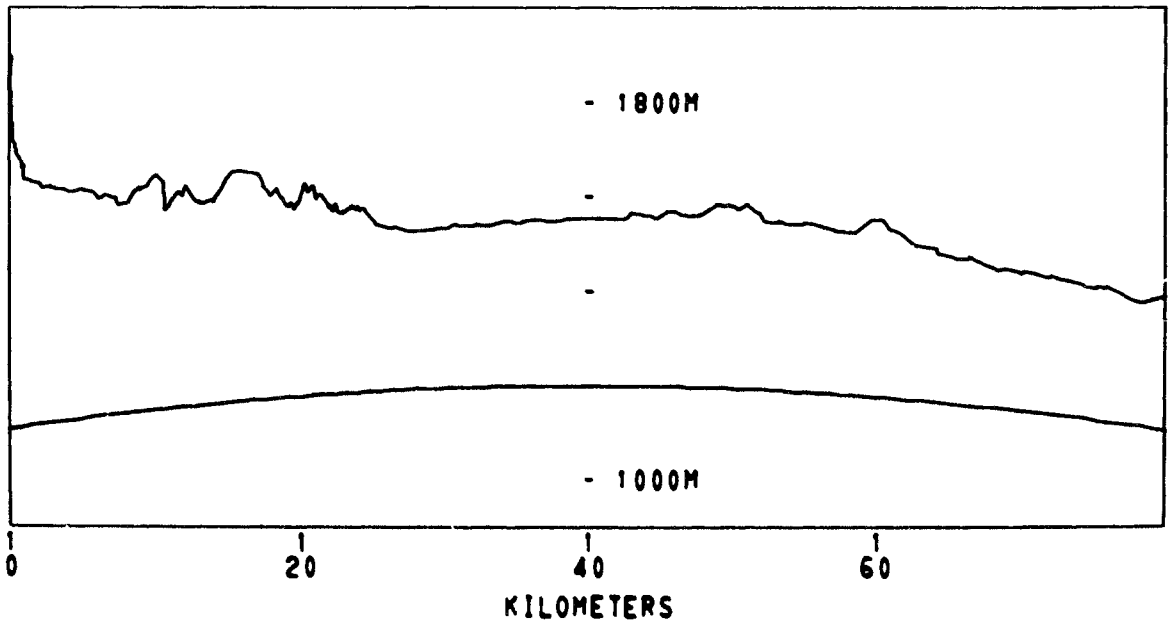


PATH VIEW FROM TRANSMITTER

Bearing from common receiver site to transmitter site is
66° 40' 12" T.


230 MHZ 9/28/66
410 MHZ
751 MHZ
910 MHZ 7/11/66
1846 MHZ
4595 MHZ
9190 MHZ
R3-80-T7
SOUTH ROGGEN S2
Free Space Loss (dB)
230 - 117.7
410 - 122.8
751 - 128.0
910 - 129.7
1846 - 135.8
4595 - 142.9
9190 - 149.8
Basic Transmission Loss in Decibels
120
130
140
150
160
170
180
190
0
2
4
6
8
10
12
14
16
18
Antenna Height Above Ground in Meters

RCVR. ELEV.	R3-80-T7	XMTR. ELEV.
1995 M	PATH LENGTH 78.86 km	1442 M



L_b (dB) SHORT TERM SIGNAL VARIABILITY

Freq(MHz)	230	410	751	910	1846	4595	9190
	9-28-66 at 15 M				7-11-66 at 15 M		
50%	129.9	134.4	143.5	148.3	165.3	174.1	188.6
Δ10%-90%	< 3	< 3	< 3	< 3	< 3	< 3	< 3
					7-11-66 at 7.3 M		
50%				150.3	160.3	174.6	188.4
Δ10%-90%				< 3	< 3	< 3	< 3
					7-11-66 at 1 M		
50%				152.8	166.6	173.9	186.4
Δ10%-90%				< 3	< 3	< 3	< 3

The path extends over dry, stubbled, wheat fields for approximately 8 km.

9. Meteorological Information

This section of the report presents a comprehensive listing of meteorological parameters for each path that was obtained simultaneously with the path loss measurements. Wet and dry bulb temperatures were obtained by reading electrically operated psychrometers; atmospheric pressures were indicated on high-grade aneroid barometers; percent relative humidity was calculated from meteorological data obtained at the site. Cloud types were based upon the U.S. Weather Bureau cloud code classification, and percent cloud cover, wind speed, and wind direction were estimated.

Type of Site	Dry Bulb Temp C	Wet Bulb Temp C	Atmos. Press. mb	% Rel. Humid.	Cloud Type	% Cloud Cover	Wind Speed & Dir.	Terminal
			R3-0.5-T1 Easley Road N					
UHF	October 10, 1966							
OPEN	20.0	7.1	816.5	13	- -	0	5	Rcvr
	No data available							Xmtr
SHF	July 25, 1966							
OPEN	28.9	17.2	803.2	33	L1	30	5 S	Rcvr
	32.2	20.3	823.7	36	L1, L2	30	5 SE	Xmtr
			R3-0.5-T2 Easley Road S					
UHF	September 16, 1966							
OPEN	14.4	8.3	803.0	47	L2, H2	40	0-30 W	Rcvr
	17.2	13.0	816.5	65	L1	10	Calm	Xmtr
SHF	July 26, 1966							
OPEN	28.9	15.0	803.9	24	L1	5	3 S	Rcvr
	31.7	16.7	826.4	23	L1	10	Calm	Xmtr

Type of Site	Dry Bulb Temp C	Wet Bulb Temp C	Atmos. Press. mb	% Rel. Humid.	Cloud Type	% Cloud Cover	Wind Speed & Dir.	Terminal
			R3-3-T1 Church Lake					
UHF	September 20, 1966							
OPEN	21.7	12.2	808.5	35	L1	5	Calm	Rcvr
	24.6	18.8	820.2	60	L1	5	0-5 N	Xmtr
SHF	June 21, 1966							
OPEN	25.0	13.6	801.2	30	M1	70	Calm	Rcvr
	26.9	15.0	824.9	29	L1, L5	40	5 NW	Xmtr
			R3-3-T2 64th and North Quaker					
UHF	September 20, 1966							
OPEN	21.7	12.2	808.0	35	L1	5	Calm	Rcvr
	- -	- -	825.9	- -	L1	5	3 E	Xmtr
SHF	June 21, 1966							
OPEN	25.3	13.9	800.2	30	M1	70	Calm	Rcvr
	27.8	15.7	830.5	29	L2, L3, H6	80	5 ESE	Xmtr
			R3-3-T3-O 64th and Quaker E					
UHF	September 20, 1966							
OPEN	22.2	12.8	808.0	36	L1	5	Calm	Rcvr
	- -	- -	825.9	- -	L1	10	5 E	Xmtr
SHF	June 22, 1966							
OPEN	28.1	14.2	795.1	23	L2	35	Calm	Rcvr
	26.7	16.1	825.5	35	L2	10	5 E	Xmtr

Type of Site	Dry Bulb Temp C	Wet Bulb Temp C	Atmos. Press. mb	% Rel. Humid.	Cloud Type	% Cloud Cover	Wind Speed & Dir.	Terminal
			R3-3-T3-C 64th and Quaker E					
UHF	September 20, 1966							
CONC	21.7	12.2	808.0	35	L1	5	Calm	Rcvr
	- -	- -	825.9	- -	L1	10	5 E	Xmtr
SHF	June 22, 1966							
CONC	24.7	13.3	795.8	29	L1, M3	30	3 SE	Rcvr
	23.9	15.6	826.0	44	L2	15	10 NNE	Xmtr
			R3-3-T4 64th and MacIntyre S					
UHF	September 20, 1966							
OPEN	23.9	12.8	807.5	29	L1	5	Calm	Rcvr
	- -	- -	823.9	- -	L1, L2	20	1 E	Xmtr
SHF	June 22, 1966							
OPEN	28.3	15.0	793.4	26	L9	85	Calm	Rcvr
	31.1	15.0	822.5	18	L2	70	15-20 SW	Xmtr
			R3-3-T5 Loveland Street					
UHF	September 16, 1966							
OPEN	12.8	8.9	803.5	63	L1	10	Calm	Rcvr
	16.3	14.3	831.0	82	L1	10	2 E	Xmtr
SHF	July 27, 1966							
OPEN	26.7	16.1	802.6	36	L1	10	2-3 S	Rcvr
	29.4	18.3	834.5	36	L1	10	Calm	Xmtr

Type of Site	Dry Bulb Temp C	Wet Bulb Temp C	Atmos. Press. mb	% Rel. Humid.	Cloud Type	% Cloud Cover	Wind Speed & Dir.	Terminal
			R3-5-T1 Pattridge East					
UHF	October 7, 1966							
OPEN	19.6	10.2	804.0	32	L2, M6	50	Calm	Rcvr
	22.8	10.0	811.0	19	L1, H6	40	15 W	Xmtr
SHF	June 23, 1966							
OPEN	18.9	11.7	797.8	45	L2	60	6 SE	Rcvr
	21.1	13.3	816.0	44	L2	20	10-15 S	Xmtr
			R3-5-T2 Pattridge E1					
UHF	October 7, 1966							
OPEN	18.2	11.6	804.6	48	L1	20	Calm	Rcvr
	21.1	9.4	813.4	21	H1, H6	10	10	Xmtr
SHF	June 23, 1966							
OPEN	22.5	12.2	792.4	32	L1, L9	60	Calm	Rcvr
	23.1	13.9	818.2	38	L2, L5	85	5-10 S	Xmtr
			R3-5-T3 Tucker Lake NE1					
UHF	September 20, 1966							
OPEN	23.9	12.8	807.5	29	L1	5	Calm	Rcvr
	- -	- -	825.3	- -	L1, L2	30	0-5 W	Xmtr
SHF	June 24, 1966							
OPEN	26.1	13.6	792.4	26	- -	- -	- -	Rcvr
	30.0	16.1	819.0	25	- -	- -	- -	Xmtr

Type of Site	Dry Bulb Temp C	Wet Bulb Temp C	Atmos. Press. mb	% Rel. Humid.	Cloud Type	% Cloud Cover	Wind Speed & Dir.	Terminal
			R3-5-T4 74th and McIntvre					
UHF	September 22, 1966							
OPEN	23.9	12.8	812.0	29	L1	2	Calm	Rcvr
	20.2	14.2	831.4	54	- -	- -	Calm	Xmtr
SHF	June 24, 1966							
OPEN	23.1	14.2	793.4	40	L1	0.5	Calm	Rcvr
	25.0	17.2	824.0	48	L1	1	Calm	Xmtr
			R3-5-T5 Ralston Church					
UHF	September 22, 1966							
OPEN	25.6	15.6	812.5	37	L1	2	Calm	Rcvr
	22.8	15.4	832.0	48	L1	1	Calm	Xmtr
SHF	June 24, 1966							
OPEN	20.3	13.9	793.8	52	L1	1	Calm	Rcvr
	22.2	15.7	825.8	53	- -	- -	Calm	Xmtr
			R3-5-T6 Mount Olivet					
UHF	September 9, 1966							
OPEN	24.4	11.1	810.0	19	L2, H2	70	0-5 W	Rcvr
	28.2	24.8	832.0	77	L1	20	Calm	Xmtr
SHF	July 28, 1966							
OPEN	26.7	17.2	803.2	41	L1, L5	15	6 S	Rcvr
	27.8	18.9	837.8	45	L1, L2	10	Calm	Xmtr

Type of Site	Dry Bulb Temp C	Wet Bulb Temp C	Atmos. Press. mb	% Rel. Humid.	Cloud Type	% Cloud Cover	Wind Speed & Dir.	Terminal
			R3-5-T7 Rolling Hills NE1					
UHF	September 12, 1966							
OPEN	21.7	12.2	804.0	35	L2	20	Calm	Rcvr
	22.0	16.0	822.9	56	L1	20	Calm	Xmtr
SHF	July 28, 1966							
OPEN	23.1	14.7	803.6	43	L1	5	Calm	Rcvr
	25.6	17.8	838.8	49	L1, L2	10	- -	Xmtr
			R3-10-T1 Rocky Flats Clay Pit					
UHF	September 22, 1966							
OPEN	25.0	13.9	811.7	31	L1	40	Calm	Rcvr
	28.2	16.8	812.1	34	L1, L2	25	0-7 NNW	Xmtr
SHF	June 24, 1966							
OPEN	29.4	12.8	791.7	14	L1	1	Calm	Rcvr
	30.0	15.0	805.0	21	L1	20	Calm	Xmtr
			R3-10-T2 Pole Corral					
UHF	September 22, 1966							
OPEN	25.0	13.9	811.7	31	L1	25	Calm	Rcvr
	28.0	15.2	824.9	27	L1, L2	20	0-7 NNE	Xmtr
SHF	June 27, 1966							
OPEN	26.1	10.0	802.9	10	L1	20	Calm	Rcvr
	27.2	15.7	828.2	31	L1, L2	10	5 SE	Xmtr

Type of Site	Dry Bulb Temp C	Wet Bulb Temp C	Atmos. Press. mb	% Rel. Humid.	Cloud Type	% Cloud Cover	Wind Speed & Dir.	Terminal
			R3-10-T3 Pole Corral E1					
UHF	September 22, 1966							
OPEN	25.0	13.9	811.7	31	L1	5	Calm	Rcvr
	31.0	16.8	829.3	25	L1	20	0-7 NNE	Xmtr
SHF	June 27, 1966							
OPEN	23.3	14.2	803.2	39	L1, M4	1	Calm	Rcvr
	23.3	14.2	831.8	40	L1, L2	2	Calm	Xmtr
			R3-10-T4 80th and Kipling N					
UHF	September 22, 1966							
OPEN	23.3	14.4	812.3	40	L1	2	Calm	Rcvr
	25.2	15.6	833.4	38	L1	10	6 NE	Xmtr
SHF	June 27, 1966							
OPEN	28.9	13.3	802.2	17	L1	10	0-7	Rcvr
	30.6	15.4	835.4	20	L1	20	10 NE	Xmtr
			R3-10-T5 73rd and Field					
UHF	September 15, 1966							
OPEN	8.9	8.9	803.0	100	L6	100	Calm	Rcvr
	11.6	10.2	823.6	85	L2	100	Calm	Xmtr
SHF	June 28, 1966							
OPEN	25.6	13.3	804.3	26	L1	15	Calm	Rcvr
	26.7	14.9	836.5	29	L1	10	Calm	Xmtr

Type of Site	Dry Bulb Temp C	Wet Bulb Temp C	Atmos. Press. mb	% Rel. Humid.	Cloud Type	% Cloud Cover	Wind Speed & Dir.	Terminal
			R3-10-T6 Russell School S					
UHF	September 15, 1966							
OPEN	8.9	8.9	802.0	100	L6	100	Calm	Rcvr
	11.8	10.4	829.7	86	L2	100	Calm	Xmtr
SHF	July 28, 1966							
OPEN	27.2	18.1	801.9	44	L2	30	5 S	Rcvr
	31.7	18.9	840.6	31	L1, L2	25	Calm	Xmtr
			R3-20-T1 Marshall Road					
UHF	September 22, 1966							
OPEN	28.3	13.9	810.0	21	L2, H2	70	Calm	Rcvr
	30.4	18.4	833.4	33	L1, L2	35	0-5 N	Xmtr
SHF	June 30, 1966							
OPEN	25.8	15.0	799.5	34	L1, L9, H2	90	Calm	Rcvr
	21.1	16.7	835.4	66	L9	96	Calm	Xmtr
			R3-20-T2 Cherryvale Road					
UHF	September 22, 1966							
OPEN	27.2	14.4	811.0	26	L1, H2	80	Calm	Rcvr
	28.1	19.0	833.1	44	L1, L2	30	0-5 N	Xmtr
SHF	June 30, 1966							
OPEN	25.0	14.4	798.9	34	L1, L5	80	Calm	Rcvr
	26.1	18.3	834.4	39	L2	50	Calm	Xmtr

Type of Site	Dry Bulb Temp C	Wet Bulb Temp C	Atmos. Press. mb	% Rel. Humid.	Cloud Type	% Cloud Cover	Wind Speed & Dir.	Terminal
			R3-20-T3	Great Western Reservoir SW1				
UHF	September 23, 1966							
OPEN	23.0	17.0	809.0	57	L1	15	Calm	Rcvr
	29.4	17.2	824.3	31	L1	20	0-5 E	Xmtr
SHF	June 30, 1966							
OPEN	25.6	15.0	798.5	34	L2	75	Calm	Rcvr
	28.3	16.9	826.8	33	L2	80	5 E	Xmtr
			R3-20-T4	Louisville SW1				
UHF	September 23, 1966							
OPEN	23.0	17.0	809.0	57	L1	0	10	Rcvr
	27.8	16.7	833.4	34	L1	20	0-5 NE	Xmtr
SHF	June 29, 1966							
OPEN	29.2	12.5	799.2	13	L1, H6, M1	70	Calm	Rcvr
	34.4	16.7	835.8	16	H6, L2	95	0-5 SSE	Xmtr
			R3-20-T5	Louisville S2				
UHF	September 23, 1966							
OPEN	22.8	17.3	810.3	60	L1	15	Calm	Rcvr
	29.4	17.2	824.3	31	L1	20	0-5 NE	Xmtr
SHF	June 29, 1966							
OPEN	28.9	12.5	800.2	14	L1, H6, M2	90	Calm	Rcvr
	30.6	15.0	837.3	18	H6, L2	75	5 E	Xmtr

Type of Site	Dry Bulb Temp C	Wet Bulb Temp C	Atmos. Press. mb	% Rel. Humid.	Cloud Type	% Cloud Cover	Wind Speed & Dir.	Terminal
			R3-20-T6 Stearns Lake N1					
UHF	September 23, 1966							
OPEN	22.8	17.3	810.3	60	L1	20	Calm	Rcvr
	27.2	15.6	837.5	31	L1	20	0-5 N	Xmtr
SHF	June 29, 1966							
OPEN	26.1	14.4	800.5	30	M1	100	Calm	Rcvr
	29.4	16.7	839.8	29	H6, L2	85	0-5 E	Xmtr
			R3-20-T8-O 124th and Carbon Road					
UHF	September 23, 1966							
OPEN	19.8	14.5	811.0	59	- -	- -	- -	Rcvr
	23.3	13.9	836.1	37	L1	20	0-5 N	Xmtr
SHF	June 29, 1966							
OPEN	23.3	12.2	801.9	29	L1, H7	90	Calm	Rcvr
	24.4	14.4	839.0	35	H6	70	Calm	Xmtr
			R3-20-T8-C 124th and Carbon Road					
UHF	September 23, 1966							
CONC	22.8	17.2	810.3	60	L1	20	Calm	Rcvr
	23.3	13.9	836.1	37	L1	20	0-5 N	Xmtr
SHF	June 29, 1966							
CONC	26.7	13.3	801.9	23	L1, H7	90	Calm	Rcvr
	28.1	15.8	838.8	29	H6	75	5 E	Xmtr

Type of Site	Dry Bulb Temp C	Wet Bulb Temp C	Atmos. Press. mb	% Rel. Humid.	Cloud Type	% Cloud Cover	Wind Speed & Dir.	Terminal
			R3-20-T9	120th and Lowell Boulevard N				
UHF	September 23, 1966							
OPEN	19.8	14.5	811.0	59	L1	15	Calm	Rcvr
	20.0	12.8	840.5	46	L1	5	0-5 N	Xmtr
SHF	June 28, 1966							
OPEN	29.7	13.1	803.2	14	M4, L1	40	0-5 E	Rcvr
	33.9	16.9	844.2	18	L1	25	5 WSW	Xmtr
			R3-20-T10	100th and Pecos				
UHF	September 23, 1966							
OPEN	18.2	13.4	811.1	61	L1	1	Calm	Rcvr
	18.3	12.2	832.4	51	- -	- -	5 N	Xmtr
SHF	June 28, 1966							
OPEN	30.8	13.1	803.9	12	L1	25	Calm	Rcvr
	32.8	15.6	836.8	16	L1	20	Calm	Xmtr
			R3-20-T11	Thornton S1				
UHF	September 15, 1966							
OPEN	8.9	8.9	803.0	100	L6	100	Calm	Rcvr
	12.5	11.5	834.7	90	L2	100	Calm	Xmtr
SHF	July 29, 1966							
OPEN	26.7	18.3	805.6	47	L1	15	7 S	Rcvr
	30.0	20.0	847.4	41	L1	15	Calm	Xmtr

Type of Site	Dry Bulb Temp C	Wet Bulb Temp C	Atmos. Press. mb	% Rel. Humid.	Cloud Type	% Cloud Cover	Wind Speed & Dir.	Terminal
			R3-20-T12 Western Hills SE1					
UHF	September 15, 1966							
OPEN	9.4	8.9	804.0	94	L6	100	Calm	Rcvr
	12.6	10.8	838.1	82	L2	100	Calm	Xmtr
SHF	July 29, 1966							
OPEN	19.4	16.1	803.2	73	L1	70	5 SE	Rcvr
	21.7	18.3	850.5	73	L1, L2	80	Calm	Xmtr
			R3-20-T13 Riverside Cemetery					
UHF	September 15, 1966							
OPEN	8.9	8.9	804.5	100	L6	100	Calm	Rcvr
	10.4	9.8	838.8	93	L2	100	Calm	Xmtr
SHF	July 29, 1966							
OPEN	22.8	17.2	805.9	60	L1	15	5 SE	Rcvr
	25.3	19.4	851.0	59	L1	35	Calm	Xmtr
			R3-20-T14 Marston Lake NW					
UHF	September 12, 1966							
OPEN	23.3	14.4	804.0	40	L1, H2	50	0-5 W	Rcvr
	24.4	16.0	822.2	44	L1, L2	50	2 E	Xmtr
SHF	August 5, 1966							
OPEN	20.6	14.4	803.9	54	L1	5	5 S	Rcvr
	24.4	15.8	834.9	43	L1	10	Calm	Xmtr

Type of Site	Dry Bulb Temp C	Wet Bulb Temp C	Atmos. Press. mb	% Rel. Humid.	Cloud Type	% Cloud Cover	Wind Speed & Dir.	Terminal
			R3-30-T1	Leggett Reservoir NE2				
UHF	September 26, 1966							
OPEN	19.4	16.0	802.5	73	L2, H2	30	Calm	Rcvr
	21.7	15.0	833.4	51	L1, L2, H2	40	5-10 N	Xmtr
SHF	July 22, 1966							
OPEN	24.2	17.7	806.3	55	L2, L9	85	Calm	Rcvr
	25.6	18.9	850.0	55	L1, L2	65	5 NE	Xmtr
			R3-30-T2	East Lake Reservoir N3				
UHF	October 6, 1966							
OPEN	18.0	12.0	807.1	52	L1	15	Calm	Rcvr
	22.8	11.1	835.1	24	L1	5	3 E	Xmtr
SHF	August 1, 1966							
OPEN	20.0	17.2	843.2	77	L5	100	5 SW	Rcvr
	26.7	18.2	850.3	46	L1, L2	96	5-10 NE	Xmtr
			R3-30-T3-O	Webster Lake				
UHF	October 6, 1966							
OPEN	20.2	12.0	805.8	40	L1	40	Calm	Rcvr
	26.1	12.8	830.3	21	L2	10	1 E	Xmtr
SHF	August 1, 1966							
OPEN	23.9	16.7	842.5	50	L1	90	3 S	Rcvr
	25.0	18.6	847.0	56	L1	60	5 NE	Xmtr

Type of Site	Dry Bulb Temp C	Wet Bulb Temp C	Atmos. Press. mb	% Rel. Humid.	Cloud Type	% Cloud Cover	Wind Speed & Dir.	Terminal
			R3-30-T3-C Webster Lake					
UHF	October 6, 1966							
CONC	20.2	12.0	805.8	40	L1	40	Calm	Rcvr
	23.3	12.2	830.3	28	L1	5	1 E	Xmtr
SHF	August 1, 1966							
CONC	22.2	16.1	843.2	55	L1	90	3 S	Rcvr
	26.1	18.9	847.5	52	L1	20	Calm	Xmtr
			R3-40-T1-O Longmont S1					
UHF	September 26, 1966							
OPEN	17.6	14.2	801.5	71	L2, H2	70	Calm	Rcvr
	22.8	15.6	840.5	49	L1, L2	40	0-5 SE	Xmtr
SHF	July 18, 1966							
OPEN	28.9	19.7	839.2	44	L1	20	Calm	Rcvr
	30.6	19.4	855.8	36	L2	30	Calm	Xmtr
			R3-40-T1-C Longmont S1					
UHF	September 26, 1966							
CONC	17.6	14.2	801.5	71	L2, H2	70	Calm	Rcvr
	20.6	15.0	839.8	57	L1, L2, H2	40	0-5 SE	Xmtr
SHF	July 18, 1966							
CONC	30.6	17.2	838.8	27	L1, L9	40	6 W	Rcvr
	31.7	20.0	855.4	35	L2	35	5 SE	Xmtr

Type of Site	Dry Bulb Temp C	Wet Bulb Temp C	Atmos. Press. mb	% Rel. Humid.	Cloud Type	% Cloud Cover	Wind Speed & Dir.	Terminal
			R3-40-T2 Longmont SE3					
UHF	October 5, 1955							
OPEN	16.5	12.4	808.0	65	L1	20	Calm	Rcvr
	18.9	10.0	846.9	33	L1	5	5 E	Xmtr
SHF	August 15, 1966							
OPEN	30.3	13.9	838.8	15	L1	30	Calm	Rcvr
	32.2	21.1	855.1	39	L2	10	Calm	Xmtr
			R3-40-T3-O Lowry Bombing Range W					
UHF	September 13, 1966							
OPEN	18.3	11.7	805.5	48	L2, M6	80	Calm	Rcvr
	23.4	16.2	818.8	50	L1, L2	40	Calm	Xmtr
SHF	August 3, 1966							
OPEN	20.3	16.1	837.8	67	L9	100	5 W	Rcvr
	27.8	17.8	828.2	39	L1, L2	85	- -	Xmtr
			R3-40-T3-C Lowry Bombing Range W					
UHF	September 13, 1966							
CONC	18.3	11.7	805.5	48	L2, M6	80	Calm	Rcvr
	21.2	17.4	818.8	71	L1	15	Calm	Xmtr
SHF	August 3, 1966							
CONC	26.7	16.7	837.8	38	L1, L9, M2	70	2 W	Rcvr
	28.1	18.3	828.5	41	L1	30	Calm	Xmtr

Type of Site	Dry Bulb Temp C	Wet Bulb Temp C	Atmos. Press. mb	% Rel. Humid.	Cloud Type	% Cloud Cover	Wind Speed & Dir.	Terminal
			R3-50-T1 Dowe Flats					
UHF	October 4, 1966							
OPEN	6.0	5.4	807.7	92	L1	1	0-5 NW	Rcvr
	9.4	5.6	832.4	59	- -	- -	3 SW	Xmtr
SHF	July 1, 1966							
OPEN	23.6	15.6	798.5	46	L1	20	Calm	Rcvr
	25.0	17.5	832.5	50	L2, H6	50	Calm	Xmtr
			R3-50-T2 Highland No. 2 Reservoir					
UHF	October 4, 1966							
OPEN	10.5	8.2	807.5	76	L1	5	Calm	Rcvr
	12.2	6.7	840.8	47	- -	- -	3 S	Xmtr
SHF	July 6, 1966							
OPEN	29.4	15.0	802.9	22	L1	15	5 S	Rcvr
	29.4	19.4	845.6	41	L1	10	0-5 E	Xmtr
			R3-50-T3 Mead SW1					
UHF	September 26, 1966							
OPEN	18.0	14.0	802.0	67	L2, M2	90	Calm	Rcvr
	23.9	15.6	837.1	44	L2, L1	75	0-10 NNE	Xmtr
SHF	July 1, 1966							
OPEN	23.9	15.8	798.5	46	L1, L9	90	Calm	Rcvr
	32.2	20.0	845.4	34	L2	50	0-5 E	Xmtr

Type of Site	Dry Bulb Temp C	Wet Bulb Temp C	Atmos. Press. mb	% Rel. Humid.	Cloud Type	% Cloud Cover	Wind Speed & Dir.	Terminal
			R3-50-T4-O Mead NE1					
UHF	September 26, 1966							
OPEN	16.0	13.2	802.0	75	L2, M9	80	Calm	Rcvr
	20.6	14.4	837.8	53	L1, L2	75	5 NE	Xmtr
SHF	July 6, 1966							
OPEN	29.4	14.2	801.2	19	L1	60	Calm	Rcvr
	32.2	18.9	848.8	29	L2	10	0-5 N	Xmtr
			R3-50-T4-C Mead NE1					
UHF	September 26, 1966							
CONC	16.0	13.2	802.0	75	L2, M9	80	Calm	Rcvr
	20.0	15.6	837.8	65	L1, L2	75	5 NE	Xmtr
SHF	July 6, 1966							
CONC	29.4	15.6	801.6	25	L1	15	Calm	Rcvr
	30.0	20.6	849.8	44	L2	1	0-5 N	Xmtr
			R3-50-T5 Mead S4E5					
UHF	October 5, 1966							
OPEN	16.4	12.2	808.4	64	L1	20	Calm	Rcvr
	14.4	7.2	851.3	37	- -	- -	2 NE	Xmtr
SHF	July 8, 1966							
OPEN	31.1	14.2	799.2	15	- -	60	5 N	Rcvr
	31.1	16.7	851.2	24	H6, L2	75	0-5 E	Xmtr

Type of Site	Dry Bulb Temp C	Wet Bulb Temp C	Atmos. Press. mb	% Rel. Humid.	Cloud Type	% Cloud Cover	Wind Speed & Dir.	Terminal
			R3-50-T7 Fort Lupton E3					
UHF	September 28, 1966							
OPEN	23.0	14.2	802.0	41	L1	60	Calm	Rcvr
	30.6	15.0	835.4	19	H1, H6	30	5 E	Xmtr
SHF	July 8, 1966							
OPEN	27.8	16.1	799.5	32	L9	99	Calm	Rcvr
	36.1	17.2	844.9	14	H6, L9	75	0-5 E	Xmtr
			R3-50-T8 Barr Lake E4N3					
UHF	October 6, 1966							
OPEN	16.4	11.8	807.4	61	L1	5	Calm	Rcvr
	17.2	9.4	840.5	38	- -	- -	3 E	Xmtr
SHF	July 8, 1966							
OPEN	27.8	15.0	761.9	28	L9	100	5 W	Rcvr
	33.3	16.7	843.1	18	L2, L5	80	0-5 SW	Xmtr
			R3-50-T9 Lowry Bombing Range N					
UHF	September 13, 1966							
OPEN	20.0	12.2	803.5	43	L1	20	Calm	Rcvr
	22.0	13.8	814.4	43	L2	60	2 NNW	Xmtr
SHF	August 4, 1966							
OPEN	21.9	15.6	802.2	54	L1, L9	70	Calm	Rcvr
	22.8	16.2	824.5	53	L1	20	25 NNW	Xmtr

Type of Site	Dry Bulb Temp C	Wet Bulb Temp C	Atmos. Press. mb	% Rel. Humid.	Cloud Type	% Cloud Cover	Wind Speed & Dir.	Terminal
			R3-50-T10 Lowry Bombing Range S					
UHF	September 13, 1966							
OPEN	18.3	11.7	803.5	48	L1	20	Calm	Rcvr
	20.6	12.6	808.0	42	L1, L2	65	Calm	Xmtr
SHF	August 4, 1966							
OPEN	22.2	14.4	802.6	45	L9	80	3 W	Rcvr
	24.4	15.8	817.2	43	L1, L2	60	25 NNW	Xmtr
			R3-50-T11 Parker S1					
UHF	September 12, 1966							
OPEN	21.1	12.8	803.5	41	L1, L9	60	Calm	Rcvr
	24.4	14.2	813.4	35	L1, L2	65	2 N	Xmtr
SHF	August 3, 1966							
OPEN	23.9	16.7	804.6	51	L1, M1	50	Calm	Rcvr
	24.4	18.3	826.4	58	L1	40	5 N	Xmtr
			R3-55-T1 Ish Reservoir NE2					
UHF	October 4, 1966							
OPEN	14.2	9.8	807.4	60	L1	15	Calm	Rcvr
	16.7	7.8	844.6	29	- -	- -	2 S	Xmtr
SHF	July 15, 1966							
OPEN	26.7	17.5	806.0	43	L1	20	Calm	Rcvr
	24.4	20.0	853.5	68	L2	5	Calm	Xmtr

Type of Site	Dry Bulb Temp C	Wet Bulb Temp C	Atmos. Press. mb	% Rel. Humid.	Cloud Type	% Cloud Cover	Wind Speed & Dir.	Terminal
			R3-60-T2-O Milliken E2					
UHF	October 5, 1966							
OPEN	11.8	8.1	808.1	64	L1	5	Calm	Rcvr
	6.7	3.9	822.2	67	- -	- -	1 N	Xmtr
SHF	July 13, 1966							
OPEN	27.2	15.0	801.6	29	L9, M1	80	5-10 W	Rcvr
	30.0	20.0	858.4	41	L2	10	- -	Xmtr
			R3-60-T2-C Milliken E2					
UHF	October 5, 1966							
CONC	11.8	8.6	808.1	68	L1	5	Calm	Rcvr
	11.7	6.7	822.2	51	- -	- -	3 NE	Xmtr
SHF	July 13, 1966							
CONC	28.9	14.2	801.2	20	L9	90	Calm	Rcvr
S	32.2	21.1	857.6	38	- -	- -	- -	Xmtr
			R3-80-T1 Loveland N4					
UHF	September 29, 1966							
OPEN	25.6	15.6	797.0	37	H2	20	0-20	Rcvr
	29.4	14.4	827.0	19	H6	1	5 SE	Xmtr
SHF	July 12, 1966							
OPEN	25.6	14.7	803.2	32	L1, L5, L9	90	Calm	Rcvr
	29.4	17.2	846.5	31	L1, L2	50	0-5 E	Xmtr

Type of Site	Dry Bulb Temp C	Wet Bulb Temp C	Atmos. Press. mb	% Rel. Humid.	Cloud Type	% Cloud Cover	Wind Speed & Dir.	Terminal
			R3-80-T2-O Fossil Creek Reservoir					
UHF	September 29, 1966							
OPEN	19.0	15.0	799.0	68	H2	20	0-5	Rcvr
	21.7	13.9	839.2	44	H6	15	2 SE	Xmtr
SHF	July 13, 1966							
OPEN	25.6	15.8	801.6	38	L1	15	Calm	Rcvr
	22.2	17.2	854.2	63	H2	10	- -	Xmtr
			R3-80-T2-C Fossil Creek Reservoir					
UHF	September 29, 1966							
CONC	22.5	16.5	799.0	57	H2	20	0-5	Rcvr
	21.7	13.9	839.2	44	H6	15	2 SE	Xmtr
SHF	July 13, 1966							
CONC	26.7	15.6	801.6	33	L1	25	Calm	Rcvr
	26.7	19.4	854.2	52	H2	10	- -	Xmtr
			R3-80-T3 Windsor SE3					
UHF	September 29, 1966							
OPEN	23.0	17.0	797.0	57	H2	20	0-10 W	Rcvr
	26.7	13.3	831.4	25	H6	15	5 SE	Xmtr
SHF	July 12, 1966							
OPEN	25.3	15.6	803.6	39	L9, M1	60	Calm	Rcvr
	29.4	18.3	850.5	36	L2	10	5-10 S	Xmtr

Type of Site	Dry Bulb Temp C	Wet Bulb Temp C	Atmos. Press. mb	% Rel. Humid.	Cloud Type	% Cloud Cover	Wind Speed & Dir.	Terminal
			R3-80-T5 Lower Latham Reservoir E1					
UHF	September 28, 1966							
OPEN	22.2	14.0	801.8	43	L1	70	Calm	Rcvr
	25.0	15.0	842.2	36	H1, H6	40	3 NW	Xmtr
SHF	July 12, 1966							
OPEN	29.4	15.8	802.6	26	L1, L9	60	5 S	Rcvr
	36.1	19.4	854.4	21	L2	50	0-5 NNE	Xmtr
			R3-80-T6 Erickson Reservoir NE2					
UHF	September 29, 1966							
OPEN	19.0	14.0	799.0	60	H2	20	Calm	Rcvr
	10.0	7.2	840.5	70	H6	5	1 N	Xmtr
SHF	July 11, 1966							
OPEN	23.1	15.3	800.2	56	H1, L1	20	Calm	Rcvr
	21.1	16.1	857.0	66	L1	50	0-5 E	Xmtr
			R3-80-T7 South Roggen S2					
UHF	September 28, 1966							
OPEN	20.0	12.0	801.6	41	M1	15	0-10 W	Rcvr
	25.6	13.3	842.9	25	H1, M6	30	5 NW	Xmtr
SHF	July 11, 1966							
OPEN	29.4	15.6	802.2	41	L1	30	Calm	Rcvr
	29.4	17.2	854.5	51	H1, L2	10	0-5 NE	Xmtr

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