

UNITED STATES OF AMERICA  
 FEDERAL COMMUNICATIONS COMMISSION  
**RADIO STATION AUTHORIZATION**

( page 1 )

CALL SIGN: E970095  
 FILE NO.: 327-DSE-P/L-97

NAME: BLR COMMUNICATIONS, INC.

CONSTRUCTION PERMIT AND LICENSE

DATE OF GRANT: MARCH 28, 1997

COMMON CARRIER

EXPIRATION DATE: MARCH 28, 2007

NATURE OF SERVICE: DOMESTIC FIXED SATELLITE SERVICE

NATURE OF SERVICE: INTERNATIONAL FIXED SATELLITE SERVICE

CLASS OF STATION: FIXED EARTH STATION

	LATITUDE	LONGITUDE
LOCATION OF STATION:	39 16 43.0 N	79 44 32.0 W
STATION ADDRESS: ROUTE 72		
ETAM (PRESTON COUNTY County), WEST VIRGINIA		

SUBJECT TO THE PROVISIONS OF THE COMMUNICATIONS ACT OF 1934, THE COMMUNICATIONS SATELLITE ACT OF 1962, SUBSEQUENT ACTS AND TREATIES, AND ALL PRESENT AND FUTURE REGULATIONS MADE BY THIS COMMISSION, AND FURTHER SUBJECT TO THE CONDITIONS AND REQUIREMENTS SET FORTH IN THIS PERMIT AND LICENSE, THE GRANTEE IS AUTHORIZED TO CONSTRUCT, USE AND OPERATE THE RADIO FACILITIES DESCRIBED BELOW FOR RADIO COMMUNICATIONS FOR THE TERM BEGINNING MARCH 28, 1997 (3 A.M. EASTERN STANDARD TIME) AND ENDING MARCH 28, 2007 (3 A.M. EASTERN STANDARD TIME). THE REQUIRED DATE OF COMPLETION OF CONSTRUCTION IS MARCH 28, 1998. GRANTEE MUST FILE WITH THE COMMISSION A CERTIFICATION UPON COMPLETION OF CONSTRUCTION.

1. PARTICULARS OF OPERATIONS

FREQUENCIES (MHz) AND POLARIZATION	EMISSION	EIRP (dBW)	EIRP DENSITY (dBW/4kHz)	ASSOCIATED ANTENNA(S)	SPECIAL PROVISIONS (REFER TO FCC FORM 488-A)
1. 5925.000- 6425.000 H,V	36M0F8W	80.90	53.90		1900 5630 5202
2. 5925.000- 6425.000 H,V	1M60G7D	61.20	35.40		1900 5630 5202
3. 3700.000- 4200.000 H,V		- - -	- - -		1010 5630 2335

2. FREQUENCY COORDINATION LIMITS

Frequency Limits (MHz)	Satellite Arc (Deg. Long.)		Elevation (Degrees)		Azimuth (Degrees)		Max. EIRP Density to Horizon (dBW/4kHz)	Associated Antenna(s)
	East Limit	West Limit	East Lim.	West Lim.	East Limit	West Limit		
1. 5925.000- 6425.000	10.0W	-143.0W	6.9	-11.9	103.2	-252.3	3.0	
2. 3700.000- 4200.000	10.0W	-143.0W	6.9	-11.9	103.2	-252.3	- - -	

RECEIVING SYSTEM NOISE TEMPERATURE:

74 KELVIN AT 10.0 DEGREES ELEVATION AND 4,000 MHz

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( page 2 )

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3. POINTS OF COMMUNICATIONS -- THE FOLLOWING SPACE STATIONS LOCATED IN THE GEO-STATIONARY SATELLITE ORBIT CONSISTENT WITH SECTIONS 1 AND 2 OF THIS LICENSE:
- a. ALL AUTHORIZED U.S. DOMESTIC (ALSAT) satellite(s)
  - b. INTELSAT ATLANTIC OCEAN REGION (AOR) satellite(s) of the INTELSAT system
  - c. PANAMSAT 1 (PAS-1 @ 45.0 W.) satellite(s) of the PANAMSAT system
  - d. PANAMSAT 2 (PAS-2 @ 43.0 W.) satellite(s) of the PANAMSAT system
  - e. ORION F1 (ORION F1 @ 37.5 W.) satellite(s) of the ORION system
  - f. TDRS-41 satellite(s) of the COLUMBIA system

4. TRANSMITTING EQUIPMENT

UNITS	MANUFACTURER	MODEL NUMBER	OUTPUT POWER-WATTS
1.	3 VARIAN	VZJ-2700	3350.0

5. ANTENNA FACILITIES

SITE/ELEVATION: 548.6 METERS AMSL

UNITS (Meters)	DIAMETER	FEED MANUFACTURER	MODEL NUMBER	MAX. ANT. HT. (Meters)	
1.	1	9.30	GREG ANDREW	ESA93-46	559.2 AMSL
		MAX. GAIN(S): 50.7 dBi at 4.000 GHz		53.9 dBi at 6.000 GHz	10.6 AGL
		ANTENNA CENTERLINE HEIGHT: 4.6 Meters (AGL) / 553.2 Meters (AMSL)			
		Total input power at antenna flange = 500.0 Watts			
		Aggregate output EIRP for all carriers = 80.90 dBW maximum			

6. REMOTE CONTROL POINT: NONE

7. ANTENNA STRUCTURE MARKING AND LIGHTING REQUIREMENTS: NONE

ATTACHED FCC FORMS 488-A AND 488-B (STANDARD PROVISIONS) ARE INCORPORATED INTO THIS AUTHORIZATION. SPECIAL PROVISION REFERENCE NUMBERS ARE LISTED IN SECTION 1 ABOVE; GENERAL PROVISION REFERENCE NUMBERS ARE AS FOLLOWS:

(1): 2010	(2): 2454	(3): 2916	(4): 5011	(5): 5012
(6): 5013	(7): 5014	(8): 5015	(9): 5017	(10): 5018
(11): 5028	(12): 5202	(13): 5203	(14): 5209	(15): 5215
(16): 5219	(17): 5223	(18): 5225	(19): 5236	(20): 5302
(21): 5511	(22): 5516	(23): 5525	(24): 5625	(25): 5720
(26): 3820				

SPECIAL AND GENERAL PROVISIONS  
FOR RADIO STATION AUTHORIZATION

The radio station authorization granted on FCC Form 488 for File No. 327-DSE-P/L -97, CALL SIGN: E970095 is subject to additional terms and conditions specified by code numbers on that form. The text of these special and general provisions is given below:

- 1010 - Receive frequency band. Emission designator indicates the maximum bandwidth of transmission received at this station. Maximum E.I.R.P. and maximum E.I.R.P. density are not applicable to receive operations.
  
- 1900 - Authority is granted to transmit any number of r.f. carriers with the specified parameters on any discrete frequencies within this band in accordance with the other terms and conditions of this authorization, subject to any additional limitations that may be required to avoid unacceptable levels of inter-satellite interference.
  
- 2010 - This authorization is issued pursuant to the Commission's Second Report and Order adopted June 16, 1972 (35 FCC 2d 844) and Memorandum, Opinion and Order adopted December 21, 1972 (38 FCC 2d 665) in Docket No. 16495 and is subject to the policies adopted in that proceeding.
  
- 2335 - Authority is granted to receive any number of the specified emissions on any discrete frequencies within this band in accordance with the other terms and conditions of this authorization.
  
- 2454 - All satellite uplink transmissions carrying broadband video information shall comply with the Automatic Transmitter Identification System (ATIS) requirements of Section 25.308 of the Rules, as modified by FCC Report No. DS-1066, released on April 3, 1991.
  
- 2916 - The transmitter(s) must be turned off during antenna maintenance so that the FCC-specified safety guidelines for human exposure to radiofrequency radiation are complied with in the region between the feed and the reflector. Appropriate measures must also be taken to restrict access to other regions in which the earth station's power flux density levels exceed the specified guidelines.
  
- 3820 - All operations via the INTELSAT satellites are limited to the countries listed in Comsat's international tariff provisions for the space segment components of international Datanet Service.
  
- 5011 - The Licensee(s) shall maintain on file with the Commission a current list or plan of the precise frequencies in use at the station, specifying for each frequency the RF center frequency, polarization, emission designator, nominal EIRP

(in dBW) and maximum E.I.R.P. density (in dBW/4kHz). This list or plan may be submitted either on a station-by-station basis or on a system-wide basis and shall be updated within seven (7) days of any changes in frequency usage at this station. The Licensee(s) need not notify the Commission of temporary usage of frequencies for periods less than seven (7) days. However, the Licensee(s) shall maintain accurate station records of the times and particulars of such temporary frequency usage.

- 5012 - The authority granted here is limited to the operation of the facilities described above and does not include any authority to install and operate channelizing equipment or any other authority under Section 214 of the Communications Act of 1934, as amended, to establish channels of communication.
- 5013 - In the event of the failure of a satellite with which operations are authorized in Section 3 of this license, operations are authorized in conjunction with any INTELSAT satellite in the affected Ocean Region that provides the services authorized herein in order to maintain the continuity of commercial service; provided that the licensee(s) immediately notify the Commission of the nature of this emergency and its expected duration; and provided that the operational limits of elevation angle and azimuth range specified in Section 2 of this license are not exceeded. In the event that such emergency operations require emissions not specified in Section 1 of this license, such emissions may be utilized provided that the EIRPs of such emissions do not exceed the limits set forth in this license.
- 5014 - With respect to potential co-channel interference to or from terrestrial microwave radio stations, the transmit and receive frequency bands listed in this license have been cleared for transmissions to and from satellites located in the geostationary orbit for the emissions designated in Section 1 of this license.
- 5015 - Upon completion of the station, the Licensee(s) must file with the Commission a certification including the following information: The name of the Licensee, file number of the application, call sign of the earth station, date of the license, a certification that the facility as authorized has been completed, that each antenna facility has been tested and is within 2 dB of the pattern specified in Section 25.209, and that the station is operational including the date of commencement of service, and will remain operational during the license period unless the license is submitted for cancellation. A copy of the certification shall be sent to the Engineer-in-Charge of the Field Office responsible for the radio district in which the station is located. Call

Enforcement Division of the Compliance and Information Bureau at (202) 418-1150 if you cannot determine your district.

- 5017 - Operation of this station is governed by the terms, conditions and limitations in Part 25 of the Commission's Rules and Regulations and the following additional conditions:  
1. This license shall not vest in the Licensee(s) any right to operate the station or any right in the use of the frequencies designated in the license beyond its term or in any other manner than authorized in the license; 2. Neither the license nor the right granted under it shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended, or the Commission's Rules and Regulations issued under it; and 3. This station is subject to the right of use or control conferred by Section 706 of the Communications Act of 1934, as amended.
- 5018 - This license shall be forfeited automatically if this station is not ready for operation within the time specified unless, prior to the expiration date of this license, the Commission receives an Application for Additional Time to Construct a Radio Station (FCC Form 701) filed by the Licensee(s) showing good cause why the Licensee(s) could not complete construction on time.
- 5028 - All operations via ORION satellite system are restricted to the provision of capacity through the sale or lease of transponder capacity for communications not interconnected with the public-switched message networks (except for emergency restoration service) and shall be in accordance with the technical parameters summarized and conditions described in Attachments No. 1 and 2 to BG-80-33 and Attachments No. 1 and 2 to Addendum No. 1 to BG-80-33, "Technical Consultation Concerning the ORION Satellite System" (May 1989). This authorization is subject to all terms and conditions imposed on the ORION satellite system by the Commission. This authorization is not to be construed as including any uplink or downlink authority in other countries, and all communications via ORION satellite system shall be between the U.S. and those countries authorized in the above-referenced application which ORION satellite system is authorized by the Commission to serve.
- 5202 - Use of this facility to provide service on a common carrier basis will require appropriate authorization under Section 214 of the Communication Act of 1934, as amended.
- 5203 - All communications shall be in accordance with the satellites and services which have completed consultations under Article XIV(d) of the INTELSAT Agreement and which the Commission has approved.

- 5209 - All operations via the INTELSAT satellites are limited to the countries listed in Comsat's international tariff provisions for the space segment components of international analog video with associated audio service.
- 5215 - All operations shall be on a common carrier basis.
- 5219 - All operations via TDRS-41 are restricted to the provision of capacity through the sale or lease of transponder capacity for communications not interconnected with the public-switched message networks (except for emergency restoration service) and shall be in accordance with the parameters summarized and conditions described in the INTEL-SAT Board of Governors document entitled " Article XIV(d) Consultation Concerning the Proposed Use of the Columbia Satellite System", BG-90-67E, 27 August 1991. This authorization is subject to all terms and conditions imposed on the Columbia satellite system by the Commission. This authorization is not to be construed as including any uplink or downlink authority in other countries, and all communications via TDRS-41 shall be between the U.S. and those countries authorized in the above-referenced application which TDRS-41 is authorized by the Commission to serve.
- 5223 - All operations via the PANAMSAT satellite system are restricted to the provision of capacity through the sale or lease of transponder capacity for communications not interconnected to the public switched network. This authorization is subject to all terms and conditions imposed on the PANAMSAT satellite system by the Commission. This authorization is not to be construed as including any uplink or downlink authority in other countries, and all communications via the PANAMSAT satellite system shall be between the United States and those countries authorized in the above-referenced application which the PANAMSAT satellite system is authorized by the Commission to serve.
- 5225 - This action constitutes the final step with respect to the provision of the services only insofar as the U.S. regulatory process is concerned. However, this authority shall not be construed as authorizing the distribution of programming where the appropriate copyright clearances have not been obtained or where the U.S. Government has determined that appropriate copyright protection does not otherwise exist.
- 5236 - All operations via the INTELSAT satellites are limited to the countries listed in Comsat's international tariff provisions for the space segment components of IDR services.

- 5302 - The provision of purely domestic service via non-U.S. licensed satellites is prohibited.
- 5511 - Services via INTELSAT satellites: Analog video with associated audio.
- 5516 - Services via INTELSAT satellites: INTELSAT Business Service (IBS) and related digital video.
- 5525 - This authorization is issued pursuant to the Commission's Report and Order released January 22, 1996. (FCC 96-14), Disco I.
- 5625 - Services via INTELSAT satellites: Datanet
- 5630 - International services shall be consistent with this emission designator, the underlying title III application(s) and the acquisition of any necessary Section 214 authority.
- 5720 - This authorization is subject to final Commission action in "Amendment of the Commission's Regulatory Policies to allow Non-U.S.-Licensed Space stations to provide Domestic and International Satellite Service in the United States," IB Docket No. 96-111, FCC 96-210 (Released May 14, 1996).

COMMUNICATIONS SATELLITE EARTH STATION STANDARD PROVISIONS

THIS AUTHORIZATION IS SUBJECT TO THE FOLLOWING CONDITIONS:

This authorization is issued on the grantee's representation that the statements contained in the application are true and that the undertakings described will be carried out in good faith.

This authorization shall not be construed in any manner as a finding by the Commission on the question of marking or lighting of the antenna system should future conditions require. The grantee expressly agrees to install such marking or lighting as the Commission may require under the provisions of Section 303(q) of the Communications Act. 47 U.S.C. § 303(q).

Neither this authorization nor the right granted by this authorization shall be assigned or otherwise transferred to any person, firm, company or corporation without the written consent of the Commission. This authorization is subject to the right of use or control by the government of the United States conferred by Section 706 of the Communications Act. 47 U.S.C. § 706. Operation of this station is governed by Part 25 of the Commission's Rules. 47 C.F.R. Part 25.

This authorization shall not vest in the licensee any right to operate this station nor any right in the use of the designated frequencies beyond the term of this license, nor in any other manner than authorized herein.

This authorization is issued on the grantee's representation that the station is in compliance with environmental requirements set forth in Section 1.1307 of the Commission's Rules. 47 C.F.R. § 1.1307.

This authorization is issued on the grantee's representation that the station is in compliance with the Federal Aviation Administration (FAA) requirements as set forth in Section 17.4 of the Commission's Rules. 47 C.F.R. § 17.4.

The following condition applies when this authorization permits construction of or modifies the construction permit of a radio station.

This authorization shall be automatically forfeited if the station is not ready for operation by the required date of completion of construction unless an application for modification of construction permit for additional time to complete construction is filed by that date, together with a showing that failure to complete construction by the required date was due to factors not under control of the grantee.



ORIGINAL

ALLEN & HAROLD  
A PROFESSIONAL LIMITED LIABILITY COMPANY  
INCLUDING A PROFESSIONAL CORPORATION

ROBERT G. ALLEN, P.C.  
DOUGLAS W. HAROLD, JR.  
ELDRED D. INGRAHAM\*

W. BRUCE WEINROD\*\*  
J. GEOFFREY BENTLEY  
OF COUNSEL

10610-A CRESTWOOD DRIVE  
POST OFFICE BOX 2126  
MANASSAS, VIRGINIA 22110  
(703) 361-2278  
FAX (703) 361-0594

SUITE 200  
2000 L STREET, N.W.  
WASHINGTON, D.C. 20036

5413 MAIN STREET  
STEPHENS CITY, VIRGINIA 22655

\*ADMITTED IN PENNSYLVANIA ONLY  
PRACTICE RESTRICTED TO MATTERS  
BEFORE FCC AND PTO

\*\*ADMITTED IN D.C. ONLY

Received

DEC 24 1996

December 20, 1996

William F. Caton, Acting Secretary  
International Bureau, Earth Stations  
Federal Communications Commission  
P.O. Box 358160  
Pittsburgh, Pennsylvania 15251-5160

Sealed and  
marked for the  
Communications Division  
Washington, D.C.

Re: BLR Communications, Inc.  
Application for Earth Station (FCC Form 493)  
Etam, West Virginia  
A&H 13118

Dear Mr. Caton:

Transmitted herewith, in triplicate, on behalf of BLR Communications, Inc. ("BLR"), is an Application for Earth Station Authorization (FCC Form 493) for a new domestic and international fixed earth station to be located in Etam, West Virginia.

Enclosed is a check made payable to the Federal Communications Commission in the amount of \$1,855.00 to cover the requisite filing fee (Fee Code: BAX).

Should you have any questions, please contact the undersigned.

Very truly yours,



Robert G. Allen

RGA:vn

Attachment

cc: Jeanette Spriggs (By Hand)

1462

FCC 493 - APPLICATION FOR EARTH STATION AUTHORIZATION OR FOR MODIFICATION  
OF STATION LICENSE  
READ INSTRUCTIONS BEFORE COMPLETING

ORIGINAL

SECTION I (FEE PORTION)

PART I

APPLICANT NAME (Last, first, middle initial)  
BLR Communications, Inc.

Received

MAILING ADDRESS (Line 1) (Maximum 85 characters - refer to Instructions for Completing Section I, no. 2)  
8624 Frederick Road

DEC 24 1996

MAILING ADDRESS (Line 2) (if required) (Maximum 85 characters)

CITY

Ellicott City

STATE OR COUNTRY (if foreign address)

Maryland

ZIP CODE

21043

CALL SIGN

OTHER FCC IDENTIFIER

Enter in Column (A) the correct Fee Type Code for the service you are applying for. Fee Type Codes may be found in the Common Carrier Services Fee Filing Guide. Enter in Column (B) the Fee Multiple, if applicable. Enter in Column (C) the result obtained from multiplying the value of the Fee Type Code in Column (A) by the number entered in Column (B), if any.

(A)	(B)	(C)	FOR FCC USE ONLY							
FEE TYPE CODE	FEE MULTIPLE (if required)	FEE DUE FOR FEE TYPE CODE IN COLUMN (A)								
(1) <table border="1"> <tr> <td>B</td> <td>A</td> <td>X</td> </tr> </table>	B	A	X	<table border="1"> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>					\$ 1,855.00	
B	A	X								

PART II - To be used only when you are requesting concurrent actions which result in a requirement to list more than one Fee Type Code.

(A)	(B)	(C)	FOR FCC USE ONLY							
FEE TYPE CODE	FEE MULTIPLE (if required)	FEE DUE FOR FEE TYPE CODE IN COLUMN (A)								
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ADD ALL AMOUNTS SHOWN IN COLUMN C, LINES (1) THROUGH (5), AND ENTER THE TOTAL HERE. THIS AMOUNT SHOULD EQUAL YOUR ENCLOSED REMITTANCE.

TOTAL AMOUNT REMITTED WITH THIS APPLICATION OR FILING
\$ 1,855.00

FOR FCC USE ONLY
1855.00

**SECTION II (Application Portion)**

**Received**

**FCC USE ONLY**

**FCC 493 APPLICATION FOR EARTH STATION AUTHORIZATION OR FOR MODIFICATION OF STATION LICENSE**

DEC 24 1996

File Number

327-DOE - P/L-97

Call Sign

E970095

1. Name of Applicant (must be same as reported on FCC 430 Form, Licensee, Qual. Divis. Report)

BLR Communications, Inc.

Mailing Street Address or P.O. Box, City, State and ZIP Code  
8624 Frederick Road  
Ellicott City, MD 21043

(Area Code) Telephone Number  
(410) 750-1400

2. Contact Representative. Provide the following if the person to contact is other than applicant.

Name

Robert G. Allen, Esq., Allen & Harold, P.L.C.

Mailing Street Address or P.O. Box, City, State and ZIP Code  
10610-A Crestwood Drive  
Manassas, VA 20109

(Area Code) Telephone Number  
(703) 361-2278

3. Class of Station

- a  Fixed Earth Station
- b  Temporary Fixed Earth Station
- c  12/14 GHz VSAT Network
- d  Mobile Earth Station
- e  Other (Specify):

4. Nature of Service

- a  Domestic Fixed-Satellite
- b  International Fixed-Satellite
- c  Radiodetermination-Satellite
- d  Mobile-Satellite
- e  Other (Specify):

5. Is developmental operation requested?

- YES
- NO

6(a) Type of Request

- 1  License for transmit/receive earth station
- 2  License for transmit-only earth station
- 3  Registration or License for receive-only earth station
- 4  Modification of License/Registration (Complete items 7(a)-(c))

6(b) Number of Stations: ▶

7(a) Purpose of Proposed Modification

N/A

- 1  Change in emissions
- 2  Change in antenna
- 3  Change in location
- 4  Change in assigned frequencies
- 5  Change in points of communications
- 6  Change in range of satellite arc
- 7  Other (Specify):

(b) Call Sign of Station

N/A

(c) File No. of Current Authorization

N/A

8. Location (Number, Street, City, County, State and ZIP Code) and Telephone Number of Earth Station Site. (If temporary fixed or VSAT Network license, specify area of operation and point of contact - name and telephone number)

Route 72  
Etam, West Virginia 26537  
(County of Preston) Phone # (304) 454-2677

9. Latitude and Longitude

Deg. - Min. - Sec.  
Lat. 39 16 43 North  
Long. 79 44 32 West

10. Site Elevation (AMSL)

1799.4 feet 548.5 meters

11. Points of Communications (For satellites operating within the frequency bands and geostationary arc coordinated for these facilities, in most cases, the entry "ALSAT" is sufficient for Domestic Fixed-Satellite Service; for all other services each satellite must be listed).

ALSAT, INTELSAT Satellites, PAS-1, 2 & 4, ORION F-1, TDRSS



Place an "X" in the appropriate column.

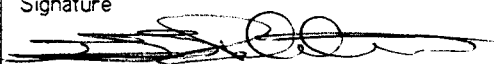
YES NO

<p>18. Does the proposed antenna(s) comply with the antenna gain patterns specified in Section 25.209(a) and (b) as demonstrated by the manufacturer's qualification measurements?          Attach manufacturer's verification that the antenna complies with these patterns if not on file.</p>	X	
<p>19. Is the facility to be operated by remote control?          If "YES," provide the location (street, city, county, state, zip code) and telephone number of the control point.</p>		X
<p>20. Small Antenna Impact          (a) Will an antenna less than 9 meters in diameter be used at this site to transmit to a fixed-satellite below 7075 MHz?</p>		X
<p>(b) Will an antenna less than 5 meters in diameter be used at this site to transmit to a fixed-satellite from 7075 MHz to 14.5 GHz?</p>		X
<p>(c) If the answer to (a) or (b) above is "YES", answer all of the following questions that apply to the proposed earth station facilities.          (i) Transmissions in the band 5925-7075 MHz will be limited to a maximum bandwidth of _____ MHz and maximum EIRP density of _____ dBW/4kHz. NOT APPLICABLE          (ii) Transmissions in the band 7075 MHz to 14.5 GHz will be limited to a maximum bandwidth of _____ MHz and maximum EIRP density of _____ dBW/4kHz.          (iii) Will operation of this facility be governed by a previous small antenna authorization?          If "YES", provide cite: _____          If "NO", attach small antenna analysis.</p>		
<p>21. Is the facility to be used to provide Radiodetermination-Satellite Service (RDSS) in the frequencies allocated for RDSS?          If "YES", attach exhibit demonstrating that operations are compatible with other operations.</p>		X
<p>22. Is the facility to be used to provide Mobile-Satellite Service (MSS) in the frequencies allocated for MSS?          If "YES", attach exhibit demonstrating that facility is consistent with operations in these frequencies.</p>		X
<p>23. Frequency Coordination          (a) Is frequency coordination required?          If "YES", attach a frequency coordination report.</p>	X	
<p>(b) Is coordination with another country required?          If "YES", attach name of country and plot of coordination contours.</p>		X
<p>24. FAA Notification - (See 47 CFR Part 17)          Is FAA notification required for any of the new or modified structures proposed in this application?          If "YES", attach a copy of FCC 854 form and/or the FAA's study regarding the potential hazard to aviation of the structure.</p>		X
<p>25. Environmental Impact          Would a commission grant of this application be an action which may have a significant environmental effect as defined by Section 1.1307 of the Commission's Rules?          If "YES", submit the statement as required by Sections 1.1308 and 1.1311.</p>		X
<p>26. Description. (Summarize the nature of the application and the services to be provided).          To provide lines of communications for low, medium and high speed data circuits, private line voice service, remote data processing, video teleconferencing and occasional use television transmission. To also provide INTELSAT Business Services, Datanet Services and International Television Service between the United States and various foreign countries as listed in Comsat's FCC Tariff No. 1. Please see Exhibit #2.</p>		

		Place an "X" in the appropriate column.	YES	NO
27. Rule Waivers and Exceptions				
Is this application inconsistent with any of the Commission's Rules?		▶		X
If "YES", attach a copy of requests for waivers or exceptions with supporting documents.				
28. Eligibility				
(a) Is the applicant a foreign government or a representative thereof?		▶		X
(b) Does the applicant meet the requirements of Section 310(b)(1), (2) and (3) of the Communications Act (47 USC 310(b)(1), (2) and (3))?		▶	X	
(c) Does the applicant meet the requirements of Section 310(b)(4) of the Communications Act (47 USC 310(b)(4))?		▶	X	
If "NO", attach an exhibit explaining why grant is in the public interest.				
29. Will the station be used to provide common carrier services?		▶	X	
30. Will the station be used for developmental purposes?		▶		X
If "YES", attach an exhibit detailing the developmental plan.				
31. If transmitting antenna, will individual applicant, partner (in case of partnership) or full-time manager (in case of corporation) actively participate in the day-to-day management and operation of proposed facility?		▶	X	
If "NO", submit an exhibit providing an explanation, and including a demonstration of how control over the facility will be retained.				
32. For transmitting antennas that provide domestic or international service, attach FCC 430 form, or if a complete and accurate FCC 430 form is already on file with the FCC give date filed: <u>April 11, 1996</u>		▶		X
Is FCC 430 form attached?				

33. Exhibits. Identify the exhibits that are attached to this application.	
Exhibit No.	
1	Radiation Hazard Analysis
2	Countries To Be Served
3	Frequency Coordination Report
4	
5	

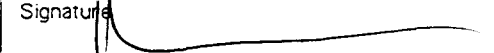
34. **Certification of Person Responsible for Preparing Engineering Information in this Application.**  
 I hereby certify that I am the technically qualified person responsible for preparation of the engineering information contained in this application, that I am familiar with Part 25 of the Commission's Rules, that I have either prepared or reviewed the engineering information submitted in this application, and that it is complete and accurate to the best of my knowledge.

Date	Typed Name of Person Signing	Signature
12/18/96	Gordon Robertson	

35. Certification of Applicant. By checking yes, the applicant certifies that, in the case of an individual applicant, he or she is not subject to a denial of federal benefits pursuant to section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. 853a, or, in the case of a nonindividual applicant (e.g., corporation, partnership or other unincorporated association), no party to the application is subject to a denial of federal benefits pursuant to that section. For the definition of a "party" for these purposes, see 47 CFR 1.2002.

YES       NO

The applicant waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise, and requests a construction permit, if necessary, in accordance with this application. All statements made in the attached exhibits are a material part hereof and are incorporated herein as if set out in full in this application. The undersigned, individually and for the applicant, hereby certifies that the statements made in this application are true, complete and correct to the best of the signer's knowledge and belief, and are made in good faith.

Date	Typed Name of Person Signing	Signature
12/19/96	Robert Lehson, Vice-President	

**WILLFUL FALSE STATEMENTS MADE ON THIS APPLICATION ARE PUNISHABLE BY FINE AND IMPRISONMENT (U.S. Code, Title 18, Section 1001), and/or REVOCATION OF ANY AUTHORIZATION (U.S. Code, Title 47, Section 312(a)(1)), and/or FORFEITURE (U.S. Code, Title 47, Section 503).**

**Notice to Individuals Required by the Privacy Act of 1974 and the Paperwork Reduction Act of 1980**  
 The solicitation of personal information requested in this form is authorized by the Communications Act of 1934, as amended. The Commission will use the information provided in this form to determine whether grant of this application is in the public interest. In reaching that determination, or for law enforcement purposes, it may become necessary to refer personal information contained in this form to another government agency. In addition, all information provided in this form will be available for public inspection. If information requested on the form is not provided, processing of the application may be delayed or the application may be returned without action pursuant to the Commission rules. Your response is required to obtain the requested authority. Public reporting burden for this collection of information is estimated to average 24 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Federal Communications Commission, Records Management Division, Room 234, Washington, D.C. 20554, and to Office of Management and Budget, Paperwork Reduction Project (3060-0480), Washington, D.C. 20503.

EXHIBIT 1

RADIATION HAZARD ANALYSIS

**\*\*\*\*\* RADIATION HAZARD ANALYSIS \*\*\*\*\***

**DATE:** 12/18/96

**CLIENT:** BLR Comm.

**SITE:** Etam, W.V.

This report analyzes the non-ionizing radiation levels for the above earth station. The purpose of this report is to determine the power flux densities in the Far Field, Near Field, Transition Region, between the Subreflector and the Main Reflector surface (if applicable), at the Main Reflector surface, and between the Antenna edge and the ground.

The supporting calculations that are submitted as a part of this exhibit show that the proposed earth station is environmentally safe, not only based on the criteria published by OSHA, but also in light of recent recommendations for stricter control of RF radiation as published in the ANSI Radio Frequency Guide (C95.1-1982) and within the meaning of Part 1.1307(b) of the Commission's Rules.

**Earth Station Parameters:**

Antenna Diameter(D):	9.3	Meters
Antenna Surface Area (Sa):	67.93	SqMeters
Subreflector Diameter(Ds):	30.0	cm
Subreflector Area(As):	706.86	Sqcm
Transmit Freq:	6175.0	MHz
WaveLenght(lambda):	0.049	Meters
Transmit Power @ Flange(P):	500.00	Watts
Antenna Gain(dBi):	53.9	dBi
Antenna Gain Isotropic(Ges):	245470.9	
Antenna Efficiency(n):	55.0	%



### 1. Far Field Calculations:

The distance to the Far Field region can be found by using the following equation:

$$\frac{0.6(D^{**2})}{\text{lambda}}$$

Dist. to Far Field Region(Rf): **1069.1 Meters**

The maximum On-Axis power density in the Far Field can be found by using the following equation:

$$\frac{\text{Ges} * P}{4 * \text{pi} * (Rf^{**2})}$$

On-Axis Power Density in the Far Field Region(Wf):

**8.55 W/SqMeter**  
**0.85 mW/Sqcm**

### 2. Near Field Calculations

Power Flux Density is considered to be at a maximum value throughout the entire length of the Near Field region. The region is contained within a cylindrical volumn having the same diameter as the antenna. Past the extent of the Near Field region, the the power density decreases with the distance from the transmitting antenna.

The distance to the end of the Near Field can be found by using the following equation:

$$\frac{D^{**2}}{4(\text{lambda})}$$

Extent of Near Field(Rn): **445.44 Meters**

The maximum On-Axis power density in the Near Field can be found by using the following equation:

$$\frac{16.0(n)P}{\text{pi}(D^{**2})}$$

On-Axis Power Density in the Near Field Region(Wn):

**16.19 W/SqMeter**  
**1.62 mW/Sqcm**

### 3. Transition Region

The Transition region is located between the Near and Far Field regions. As stated above, the power desity begins to decrease with distance in the Transition Region. While the power density decreases inversely with distance in the Transition Region, the power desity decreases inversely with the square of the distance in the Far Field Region. The maximum power density in the Transition Region will not exceed that calculated for the Near Field Region. As shown above, the power density in the Near Field will not exceed :

**1.62 mW/Sqcm**

#### 4. Region Between Main Reflector and Subreflector

Transmissions from the Feed Horn are directed toward the Subreflector surface. They are then reflected back toward the Main Reflector. The Energy between the Subreflector and Main Reflector surfaces can be calculated by determining the power density at the Subreflector surface. This can be accomplished by using the following equation:

$$\text{Power Density @ Subreflector(W/s):} \quad \frac{2(P)}{A_s}$$

**1414.71 mW/Sqcm**

#### 5. Main Reflector Region

The power density in the Main Reflector region is determined in the same manner as above, but the area is now the area of the Main Reflector aperture(W/m):

$$\text{Power Density @ Main Reflector(W/m):} \quad \frac{2(P)}{S_a}$$

**14.72 W/SqMeter**  
**1.47 mW/Sqcm**

#### 6. Region Between Main Reflector and Ground

Based on an assumption of uniform illumination of the reflector surface, the power density between the antenna and ground can be determined using the following equation:

$$\text{Power density between Reflector and Ground(Wg):} \quad \frac{P}{S_a}$$

**7.36 W/SqMeter**  
**0.74 mW/Sqcm**

**TABLE 1**

**Summary of Expected Radiation Levels**

<b><u>Region</u></b>	<b><u>Distance (Meters)</u></b>	<b><u>Calculated Maximum Radiation Level (mW/Sqcm)</u></b>	<b><u>Hazard Assessment</u></b>
1. Far Field:	1069.05	0.85	SATISFIES ANSI
2. Extent of Near Field:	445.44	1.62	SATISFIES ANSI
3. Transition Region:		1.62	SATISFIES ANSI
4. Between Main Reflector and Subreflector:		1414.71	POTENTIAL HAZARD
5. Main Reflector Surface:		1.47	SATISFIES ANSI
6. Between Antenna and Ground:		0.74	SATISFIES ANSI

**7. Conclusions**

Based on the above analysis, it is concluded that harmful radiation hazards are not in the region normally occupied by the Earth Station personnel or the general public. In every case that technical personnel are required to work on the antenna, the RF transmitters will be turned off.

**8. CERTIFICATION**

I hereby certify that I am the technically qualified person responsible for the preparation of the engineering information contained in this Exhibit; that I am familiar with Parts 21 and 25 of the Commission's Rules; that I have either prepared or reviewed the engineering information submitted in this Exhibit; and, that it is complete and accurate to the best of my knowledge.

By: 

Gordon L. Robertson

Dated this day: 12/18/96

EXHIBIT 2

COUNTRIES TO BE SERVED

ATTACHMENT A

Countries To Be Served Via Intelsat  
(Other Than IBS, DataNet and ITS)\*

Up to one hundred 64 Kbps voice-grade circuits both interconnected and non-interconnected between the United States and each of the countries listed:

Afghanistan	Gabon	New Zealand
Algeria	Ghana	Nicaragua
Angola	Greece	Niger
Argentina	Guatemala	Nigeria
Armenia	Guinea	Norway
Australia	Haiti	Oman
Austria	Honduras	Pakistan
Azerbaijan	Hungary	Panama
Bahamas	Iceland	Papua New Guinea
Bahrain	India	Paraguay
Bangladesh	Indonesia	Peru
Barbados	Iran, Islamic	Philippines
Belgium	Republic of	Poland
Benin	Iraq	Portugal
Bhutan	Ireland	Qatar
Bolivia	Israel	Romania
Bosnia-Herzegovina	Italy	Rwanda
Botswana	Jamaica	Saudi Arabia
Brazil	Japan	Senegal
Brunei Darussalam	Jordan	Serbia & Montenegro
Burkina Faso	Kazakhstan	Singapore
Cameroon	Kenya	Somalia
Cape Verde	Korea, Republic Of	Slovenia
Central African	Kuwait	South Africa
Republic	Kyrgyzstan	Spain
Chad	Lebanon	Sri Lanka
Chile	Libya	Sudan
China, People's	Liechtenstein	Swaziland
Republic of	Luxembourg	Sweden
Columbia	Macedonia, FYRO	Switzerland
Congo	Madagascar	Syria
Costa Rica	Malawi	Tanzania
Cote d'Ivoire	Malaysia	Thailand
Croatia	Mali	Togo
Cyprus	Malta	Trinidad
Czech Republic	Mauritania	Tunisia
Denmark	Mauritius	Turkey
Dominican Republic	Mexico	Uganda
Ecuador	Micronesia	United Arab
Egypt	Monaco	Emirates
El Salvador	Morocco	United Kingdom
Ethiopia	Mozambique	Uruguay
Fiji	Namibia	Vatican City State
Finland	Nepal	Venezuela
France	Netherlands	Vietnam

**ATTACHMENT A (Continued)**

**Countries To Be Serviced Via Intelsat**

Yemen  
Zaire  
Zambia  
Zimbabwe

\*Blanket authority is being requested for IBS, DataNet and ITS service to all Intelsat countries

**ATTACHMENT B**

**Countries To Be Served Via PAS-1**

Up to ten 64 Kbps non-interconnected voice-grade circuits between the United States and each of the countries listed below:

**Ku-band Countries**

Anguilla	Italy
Austria	Luxembourg
Azerbaijan	Monaco
Bahamas	Montserrat
Belgium	Netherlands
Bermuda	Portugal
Bosnia-Herzegovina	Romania
British Virgin Is.	Serbia & Montenegro
Cayman Islands	Slovenia
Croatia	Spain
Czech Republic	Sweden
Denmark	Switzerland
France	Turks & Caicos Is.
Germany	United Kingdom
Greece	Macedonia, FYRO
Ireland	

**C-band Countries**

Anguilla	Guatemala
Argentina	Haiti
Aruba	Honduras
Bahamas	Jamaica
Barbados	Mexico
Bermuda	Montserrat
Bolivia	Netherlands Antilles
Brazil	Panama
British Virgin Is.	Paraguay
Cayman Islands	Peru
Chile	Trinidad and Tobago
Colombia	Turks & Caicos Is.
Costa Rica	Uruguay
Dominican Rep.	Venezuela
Ecuador	

**ATTACHMENT B (Continued)**

**Countries To Be Served Via PAS-1**

Up to six 64 Kbps interconnected voice-grade circuits between the United States and each of the countries listed below:

**Ku-band Countries**

Azerbaijan  
Bahamas  
Bosnia-Herzegovina  
Czech Republic  
Portugal  
Romania  
Serbia & Montenegro  
United Kingdom  
Macedonia, FYRO

**C-band Countries**

Bahamas  
Costa Rica  
Dominican Republic  
Netherlands Antilles  
Panama  
Peru

**Countries To Be Served Via PAS-2**

Up to ten 64 Kbps non-interconnected voice-grade circuits between the United States and the following countries:

United Kingdom

Up to six 64 Kbps interconnected voice-grade circuits between the United States and the following countries:

United Kingdom

**Countries To Be Served Via PAS-4**

Up to ten 64 Kbps non-interconnected voice-grade circuits between the United States and each of the countries listed below:

Australia  
Hong Kong  
New Zealand

Up to six 64 Kbps interconnected voice-grade circuits between the United States and the following countries:

Australia  
Hong Kong  
New Zealand



**ATTACHMENT C**

**Countries To Be Served Via The Orion F1 Satellite**

Up to six 64 Kbps interconnected voice-grade circuits between the United States and each of the countries listed below:

Bosnia-Herzegovina  
Germany  
Ireland  
The Netherlands  
Poland  
Sweden

Up to ten 64 Kbps non-interconnected voice-grade circuits between the United States and each of the countries listed below:

Austria	Norway
Belgium	Poland
Bosnia-Herzegovina	Serbia & Montenegro
Denmark	Sweden
France	The Netherlands
Germany	United Kingdom
Ireland	Macedonia, FYRO
Italy	
Luxembourg	

EXHIBIT 3

FREQUENCY COORDINATION REPORT



SATELLITE • MICROWAVE • LIGHTWAVE • RADIO • CABLE

**MULTICOMM SCIENCES INTERNATIONAL, INC.**

MARKET INFORMATION • FIELD SURVEYS • SYSTEM DESIGN  
FEASIBILITY STUDIES • FREQUENCY COORDINATION • PROJECT MANAGEMENT

SINCE 1952

## **FREQUENCY COORDINATION REPORT**

### **4 and 6 GHz TRANSMIT-RECEIVE EARTH STATION**

**BLR COMMUNICATIONS, INC.**

**ETAM, WV**

**November 25, 1996**

#### 1. CONCLUSIONS

An Interference Study considering all existing, proposed and prior coordinated microwave facilities within the coordination contours of the proposed Earth Station demonstrates that this site will operate satisfactorily with the Common Carrier Microwave Environment as defined on the frequency coordination data sheet.

#### 2. SUMMARY OF RESULTS

The potential great circle interference cases at 6 GHz were found to be acceptable on the basis that harmful interference will not likely result from the proposed operation, considering the criteria, the potential interference receive levels, and the total propagation losses.

There were no reported cases of rain scatter beam intersections.

3. SUPPLEMENTAL SHOWING

The Satellite Earth Station proposed in this Application was coordinated by Multicomm Sciences International, Inc., Frequency Coordinators Group, using computer techniques and in accordance with Parts 25 of the FCC Rules and Regulations.

4. FREQUENCY COORDINATION DATA

Frequency Coordination Data which is attached, contains the following:

- Technical Characteristics of Proposed Earth Station
- Horizon Antenna Gain Plot
- Discrimination Angle Plot
- Local Horizon Plot
- Satellite Elevation Plot
- 4 and 6 GHz Coordination Contour
- 4 and 6 GHz Rain Scatter

5. FREQUENCY COORDINATION STATEMENT (FCC Section 21.100 (d))

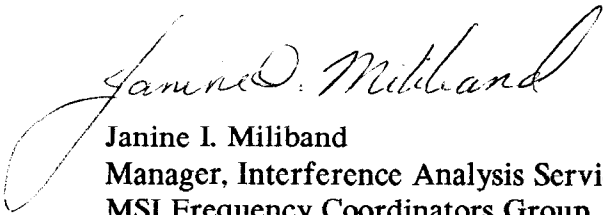
Holders of licenses, permittees, prior filed applicants or planners of 6 GHz transmitting stations were notified on November 6, 1996 of the proposed Earth Station technical details in accordance with Section 25.203 (c-2) of the FCC Rules and Regulations. Satisfactory coordination was achieved on the basis that harmful interference would not occur, or that sufficient terrestrial blocking exists.

AT&T  
US Cellular Operating Company  
MCI Telecommunications Corp  
Comcast Cable Communications  
Citizens Utility DBA Citizens W Virginia  
Celfon DBA Cellular One

Centel Cellular Co of Virginia  
C-SW Cellular Partnership  
Georgia RSA #13  
Hardy Cellular Telephone Co  
Ohio State Cellular Phone Co  
Atlantic States Microwave Trans Co  
Bell Atlantic-Pennsylvania  
Bell Atlantic-Maryland  
Bell Atlantic-Virginia  
Bell Atlantic-West Virginia  
Centel Cellular Co of Lynchburg  
Centel Cellular Co of Charlottesville  
Charlottesville Cellular Partnership  
Clifton Forge-Waynesboro Telephone Co  
Contel Federal Systems, Gvnmt Ntwrk Div  
EMI Communications  
Hagerstown Partnership  
Harrisburg Cellular Telephone Co  
Independent Cellular Network  
Northeast Pennsylvania SMSA Ltd Prtnership  
Ohio Bell Telephone Co  
Overseas Telecommunications Co  
Pennsylvania Cellular Telephone Co  
Tower Communications Systems Corp  
Trans-Muskingum  
United Telephone of Pennsylvania  
West Virginia Cellular Telephone Co  
PBS Satellite Operations Center  
Qwest Transmission  
Virginia Electric & Power Co  
Tri-State Cellular Partnership  
US Cellular Oper Co of MD RSA #1  
US Cellular Oper Co of WVA RSA #7  
US Cellular Oper Co of WVA RSA #5  
Virginia RSA #4  
Wash/Balt Cellular Ltd Partnership

6. Certification of Person Responsible for Preparing Frequency Coordination Information Submitted in this Application

I hereby certify that I am the technically qualified person responsible for preparation of the frequency coordination information contained in this application; that I am familiar with Parts 21 and 25 of the Commission's Rules; that I have either prepared or reviewed the frequency coordination information submitted in this application; and, that it is complete and accurate to the best of my knowledge.



Janine I. Miliband  
Manager, Interference Analysis Services  
MSI Frequency Coordinators Group  
Multicomm Sciences International, Inc.  
November 25, 1996

SATELLITE EARTH STATION  
FREQUENCY COORDINATION DATA  
10/28/96

COMPANY NAME: BLR COMMUNICATIONS, INC.  
EARTH STATION LOCATION: ETAM, WV  
LATITUDE(DMS): 39 16 43  
LONGITUDE(DMS): 79 44 32  
SITE GROUND ELEVATION(FT. AMSL): 1799.4  
ANTENNA CENTER LINE( FT) 15.0  
ANTENNA TYPE: ANDREW  
ESA 93-46  
ANTENNA DIAMETER(METERS): 9.3  
4 GHZ ANTENNA GAIN(DBI): 50.7  
15 DB HALF BEAMWIDTH(DEG): .50  
6 GHZ ANTENNA GAIN(DBI): 53.9  
15 DB HALF BEAMWIDTH(DEG): .33  
OPERATING MODE: T/R  
RECEIVE BAND(MHZ): 3700 - 4200  
TRANSMIT BAND(MHZ): 5925 - 6425  
EMISSION DESIGNATOR 36MOF8W,1M60G7D  
MODULATION: ANALOG,DIGITAL  
MAX. AVAILABLE RF POWER(DBW/4KHZ): 3.0  
(DBW/1MHZ): 27.0  
MAX. EIRP (DBW/4KHZ): 56.9  
(DBW/1MHZ): 80.9  
MAX. PERMISSIBLE INTERFERENCE POWER  
4 GHZ 20%(DBW) -140.0  
4 GHZ 0.0100%(DBW) -130.0  
6 GHZ 20%(DBW/4KHZ) -154.0  
6 GHZ 0.0025%(DBW/4KHZ) -131.0  
SATELLITE ARC (MIN/MAX) 10/143 DEG  
AZIMUTH 103.2/252.3 DEG  
ELEVATION 6.9/ 11.9 DEG  
RADIO CLIMATE A  
RAIN ZONE 2  
MAXIMUM GREAT CIRCLE COORDINATION DISTANCE(KM)  
4 GHZ 281.2  
6 GHZ 248.8  
PRECIPITATION SCATTER CONTOUR RADIUS(KM)  
4 GHZ 102.2  
6 GHZ 103.7  
MULTICOMM SCIENCES INTERNATIONAL, INC.  
Denville, NJ 07834 (201)-627-7400

ETAM, WV  
39 16 43  
79 44 32

AZ DEG	DISC DEG	HOR ANG DEGREES	4GHZ HOR GAIN	6GHZ HOR GAIN	4GHZ COORD KM	6GHZ COORD KM	RAIN 4 SCAT KM	RAIN 6 SCAT KM
5.	98.	.0	-14.0	-15.0	130.3	115.3	102.2	103.7
10.	93.	.0	-14.0	-15.0	132.3	117.0	102.2	103.7
15.	88.	.0	-14.0	-15.0	134.4	118.9	102.2	103.7
20.	83.	.0	-14.0	-15.0	136.8	121.0	102.2	103.7
25.	78.	.0	-14.0	-15.0	139.2	123.2	102.2	103.7
30.	73.	.0	-14.0	-15.0	142.0	125.6	102.2	103.7
35.	68.	.0	-14.0	-15.0	144.9	128.2	102.2	103.7
40.	63.	.0	-14.0	-15.0	148.2	131.1	102.2	103.7
45.	58.	.0	-14.0	-15.0	151.7	134.3	102.2	103.7
50.	53.	.0	-14.0	-15.0	155.7	137.8	102.2	103.7
55.	49.	.0	-14.0	-15.0	160.3	141.8	102.2	103.7
60.	44.	.0	-9.0	-9.0	165.4	146.3	102.2	103.7
65.	39.	.0	-7.7	-7.7	171.3	151.6	102.2	103.7
70.	34.	.0	-6.2	-6.2	178.3	157.7	102.2	103.7
75.	29.	.0	-4.5	-4.5	186.6	165.1	102.2	103.7
80.	24.	.0	-2.6	-2.6	196.9	174.2	102.2	103.7
85.	19.	.0	-.2	-.2	209.9	185.7	102.2	103.7
90.	15.	.0	2.7	2.7	227.1	200.9	102.2	103.7
95.	11.	.0	6.3	6.3	250.1	221.3	102.2	103.7
100.	8.	.0	10.0	10.0	276.4	244.5	102.2	103.7
105.	7.	.0	10.6	10.6	281.2	248.8	102.2	103.7
110.	10.	.0	7.3	7.3	257.1	227.4	102.2	103.7
115.	13.	.0	3.8	3.8	233.9	206.9	102.2	103.7
120.	17.	.0	1.2	1.2	218.0	192.8	102.2	103.7
125.	21.	.0	-.8	-.8	206.2	182.4	102.2	103.7
130.	24.	.0	-2.5	-2.5	197.0	174.3	102.2	103.7
135.	27.	.0	-3.9	-3.9	189.7	167.9	102.2	103.7
140.	30.	.0	-5.1	-5.1	183.7	162.6	102.2	103.7
145.	33.	.0	-6.1	-6.1	178.8	158.2	102.2	103.7
150.	36.	.0	-6.9	-6.9	174.8	154.7	102.2	103.7
155.	39.	.0	-7.6	-7.6	171.5	151.8	102.2	103.7
160.	41.	.0	-8.2	-8.2	168.9	149.4	102.2	103.7
165.	42.	.0	-8.7	-8.7	166.9	147.7	102.2	103.7
170.	44.	.0	-9.0	-9.0	165.5	146.4	102.2	103.7
175.	44.	.0	-9.2	-9.2	164.6	145.6	102.2	103.7
180.	45.	.0	-9.2	-9.2	164.3	145.4	102.2	103.7
185.	44.	.0	-9.2	-9.2	164.6	145.6	102.2	103.7
190.	44.	.0	-9.0	-9.0	165.5	146.4	102.2	103.7
195.	42.	.0	-8.7	-8.7	166.9	147.7	102.2	103.7
200.	41.	.0	-8.2	-8.2	168.9	149.4	102.2	103.7
205.	39.	.0	-7.6	-7.6	171.5	151.8	102.2	103.7

MULTICOMM SCIENCES INTERNATIONAL, INC.  
Denville, NJ 07834 (201)-627-7400

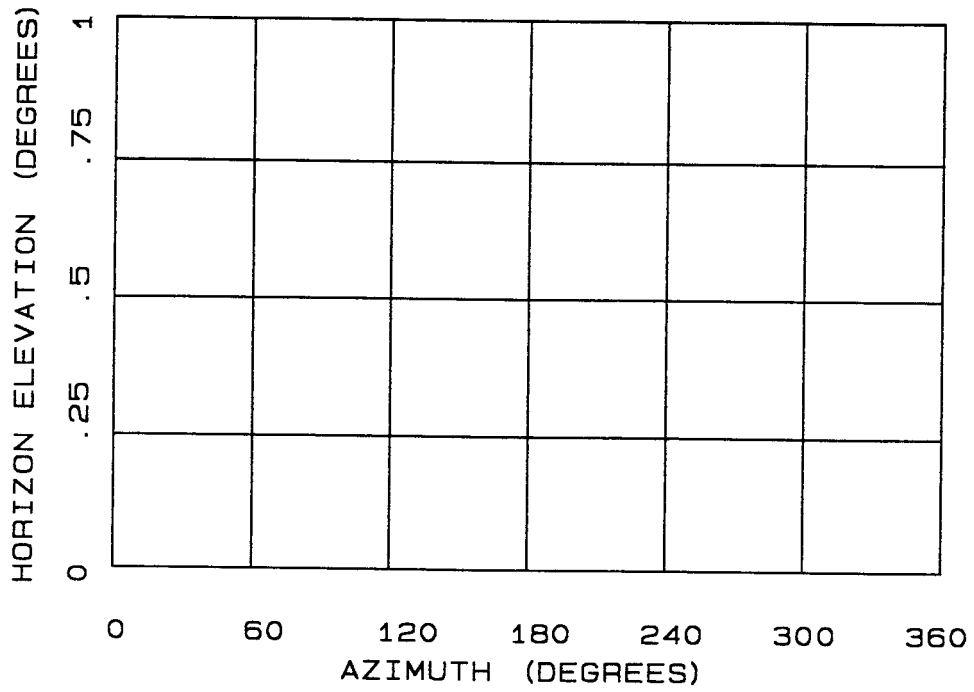


ETAM, WV  
39 16 43  
79 44 32

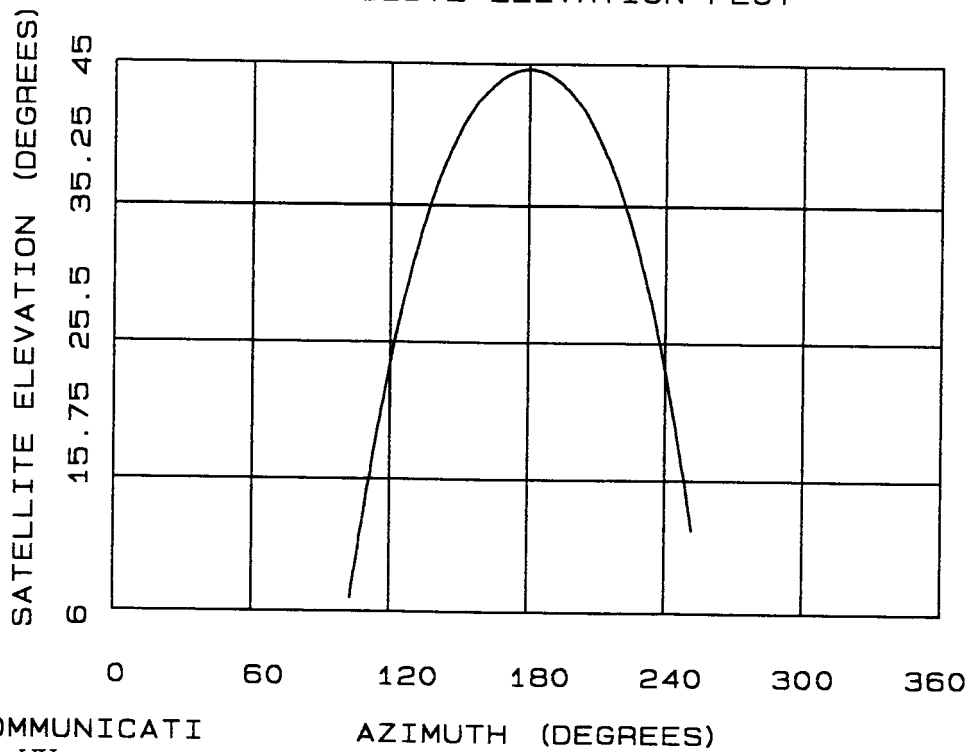
AZ DEG	DISC DEG	HOR DEGREES	ANG	4GHZ HOR GAIN	6GHZ HOR GAIN	4GHZ COORD KM	6GHZ COORD KM	RAIN 4 SCAT KM	RAIN 6 SCAT KM
210.	36.	.0		-6.9	-6.9	174.8	154.7	102.2	103.7
215.	33.	.0		-6.1	-6.1	178.8	158.2	102.2	103.7
220.	30.	.0		-5.1	-5.1	183.8	162.6	102.2	103.7
225.	27.	.0		-3.9	-3.9	189.7	167.9	102.2	103.7
230.	24.	.0		-2.5	-2.5	197.0	174.3	102.2	103.7
235.	21.	.0		-.8	-.8	206.2	182.4	102.2	103.7
240.	17.	.0		1.2	1.2	218.0	192.9	102.2	103.7
245.	14.	.0		3.4	3.4	231.3	204.7	102.2	103.7
250.	12.	.0		4.9	4.9	241.1	213.3	102.2	103.7
255.	12.	.0		4.9	4.9	240.6	212.9	102.2	103.7
260.	14.	.0		3.2	3.2	230.3	203.8	102.2	103.7
265.	17.	.0		1.0	1.0	216.9	191.9	102.2	103.7
270.	21.	.0		-1.2	-1.2	204.4	180.9	102.2	103.7
275.	25.	.0		-3.2	-3.2	193.7	171.4	102.2	103.7
280.	30.	.0		-4.9	-4.9	184.7	163.4	102.2	103.7
285.	35.	.0		-6.5	-6.5	177.1	156.7	102.2	103.7
290.	39.	.0		-7.8	-7.8	170.6	150.9	102.2	103.7
295.	44.	.0		-9.1	-9.1	164.9	145.9	102.2	103.7
300.	49.	.0		-14.0	-15.0	160.0	141.5	102.2	103.7
305.	54.	.0		-14.0	-15.0	155.6	137.7	102.2	103.7
310.	58.	.0		-14.0	-15.0	151.7	134.2	102.2	103.7
315.	63.	.0		-14.0	-15.0	148.2	131.1	102.2	103.7
320.	68.	.0		-14.0	-15.0	145.0	128.3	102.2	103.7
325.	73.	.0		-14.0	-15.0	142.1	125.7	102.2	103.7
330.	78.	.0		-14.0	-15.0	139.4	123.3	102.2	103.7
335.	83.	.0		-14.0	-15.0	136.9	121.1	102.2	103.7
340.	88.	.0		-14.0	-15.0	134.6	119.1	102.2	103.7
345.	93.	.0		-14.0	-15.0	132.5	117.2	102.2	103.7
350.	98.	.0		-14.0	-15.0	130.5	115.5	102.2	103.7
355.	102.	.0		-14.0	-15.0	128.6	113.8	102.2	103.7
360.	103.	.0		-14.0	-15.0	128.4	113.6	102.2	103.7

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LOCAL HORIZON PLOT



SATELLITE ELEVATION PLOT



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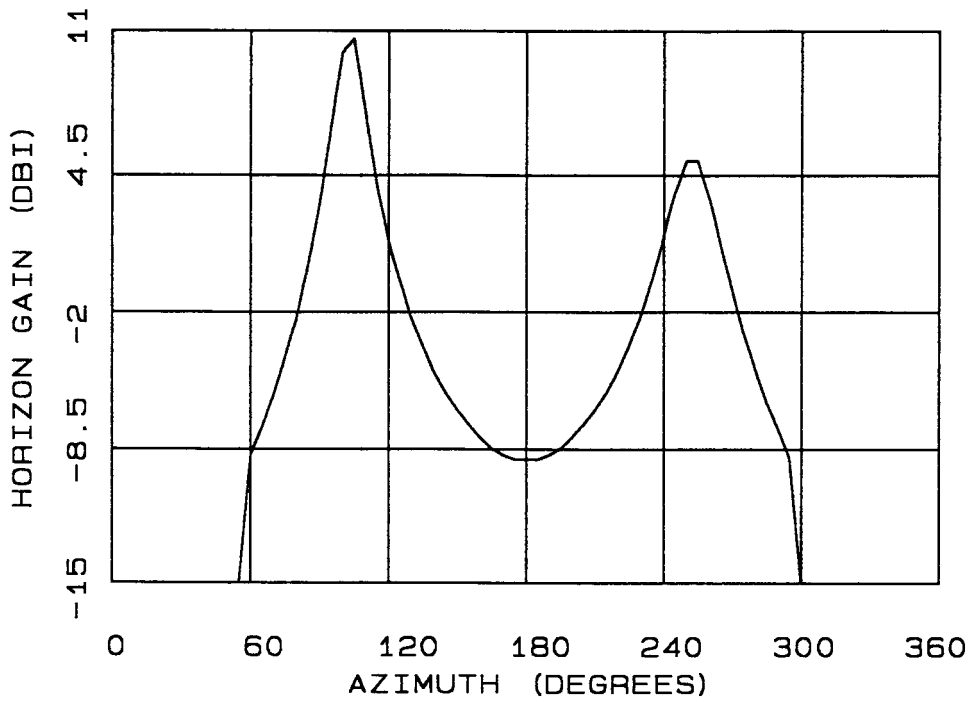
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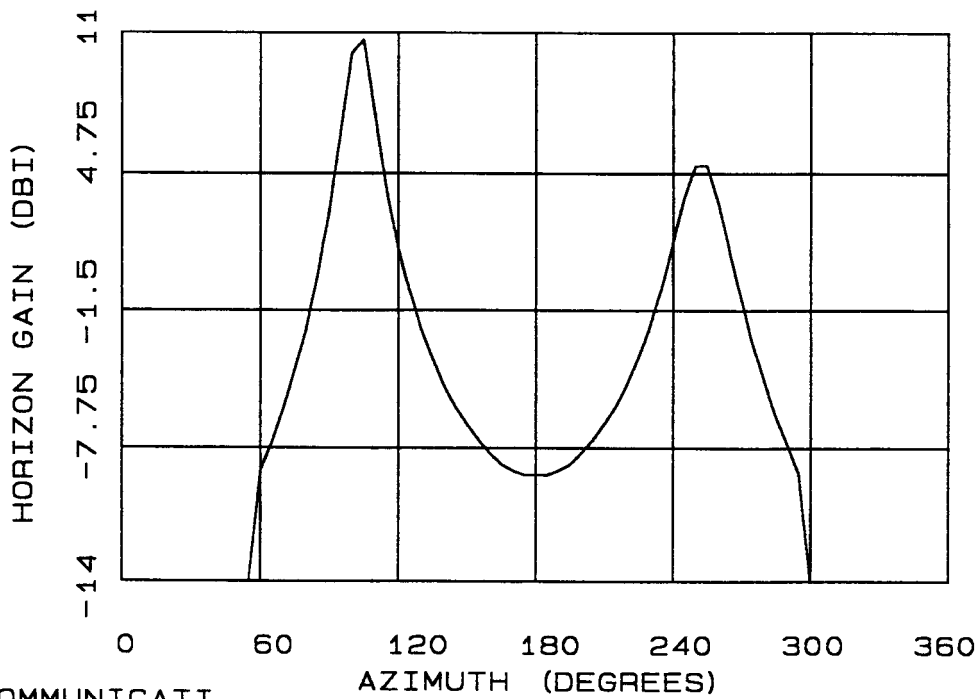
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HORIZON ANTENNA PLOT 4 GHZ



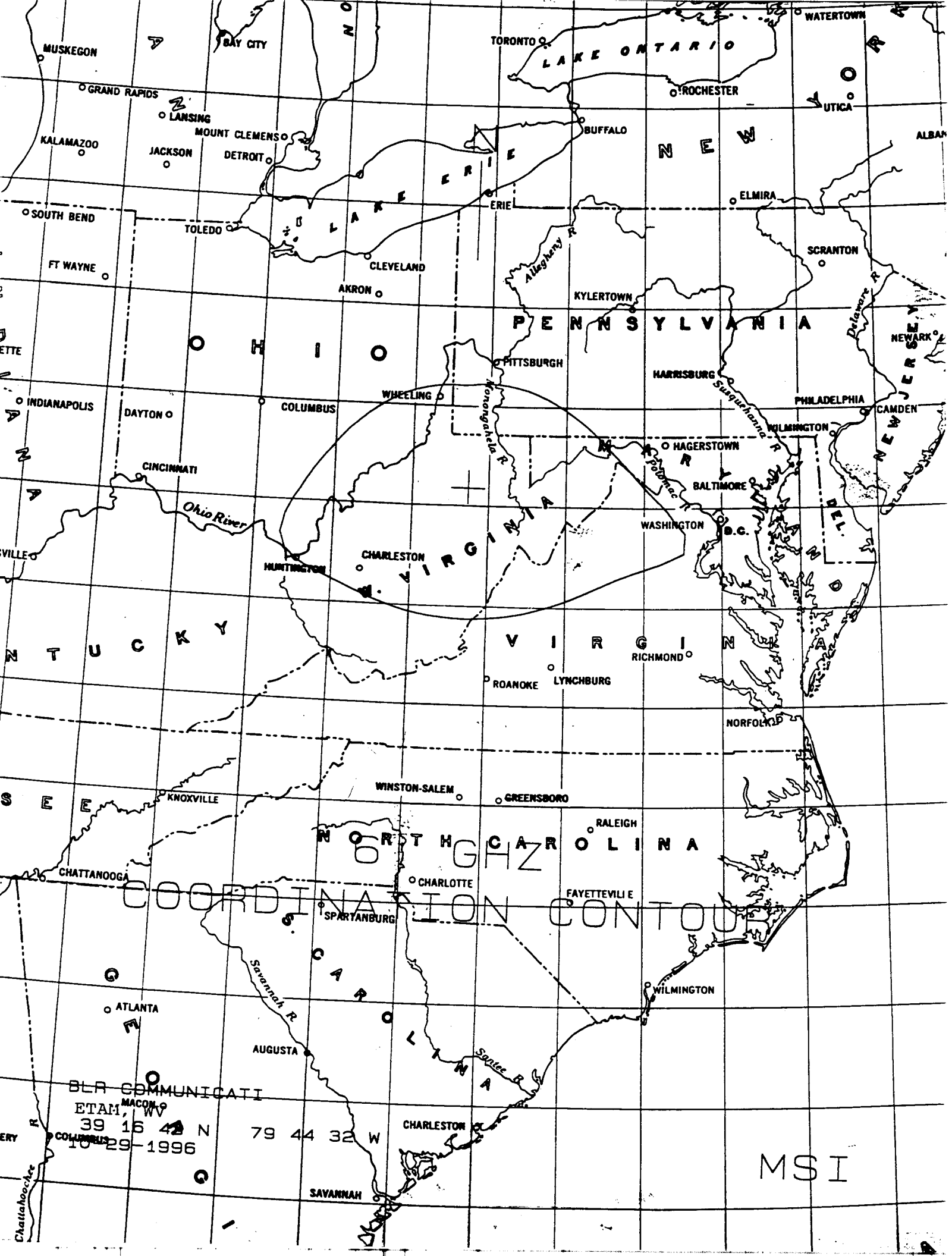
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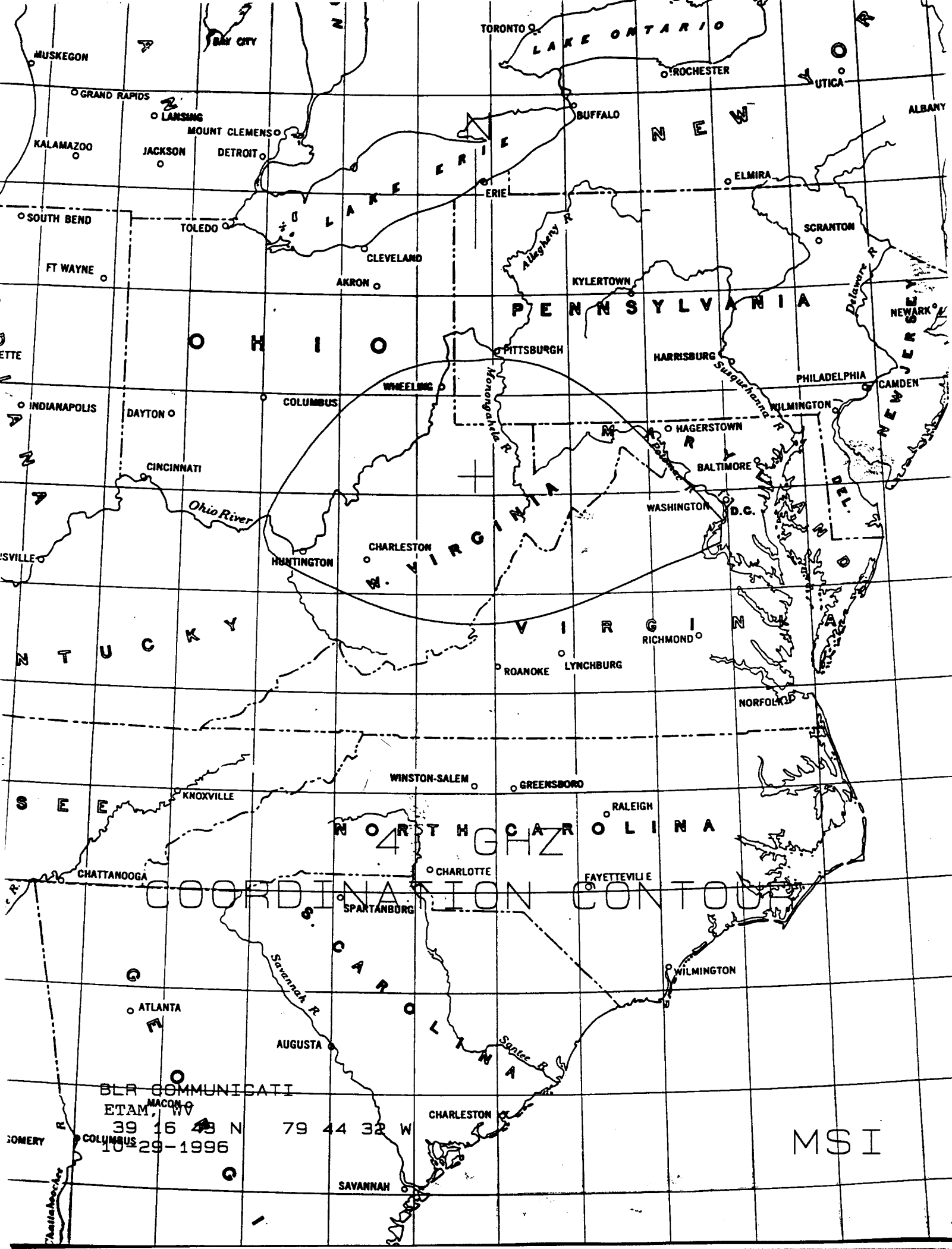
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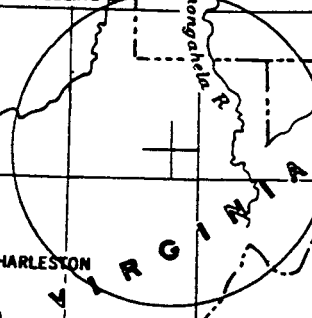
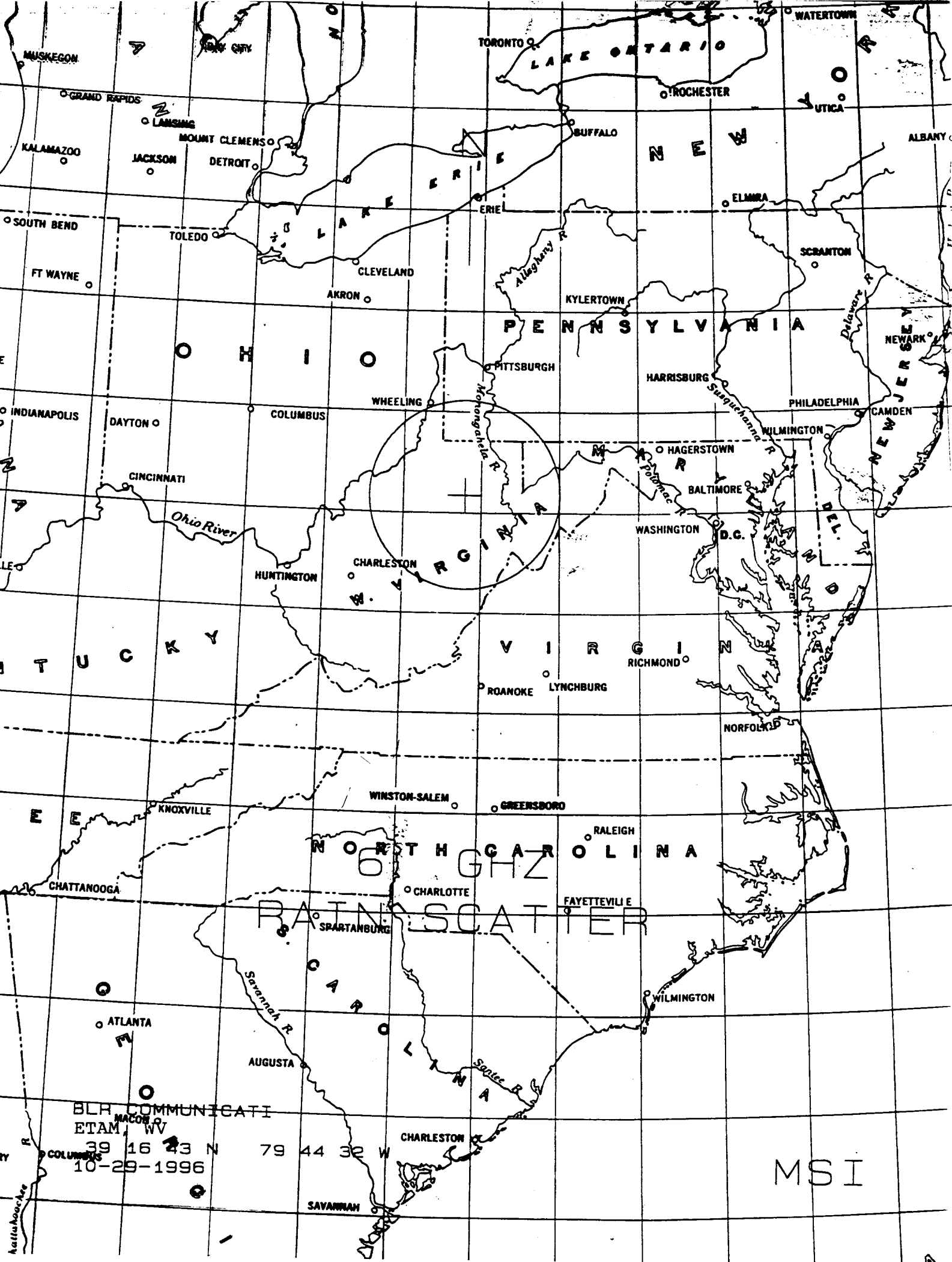
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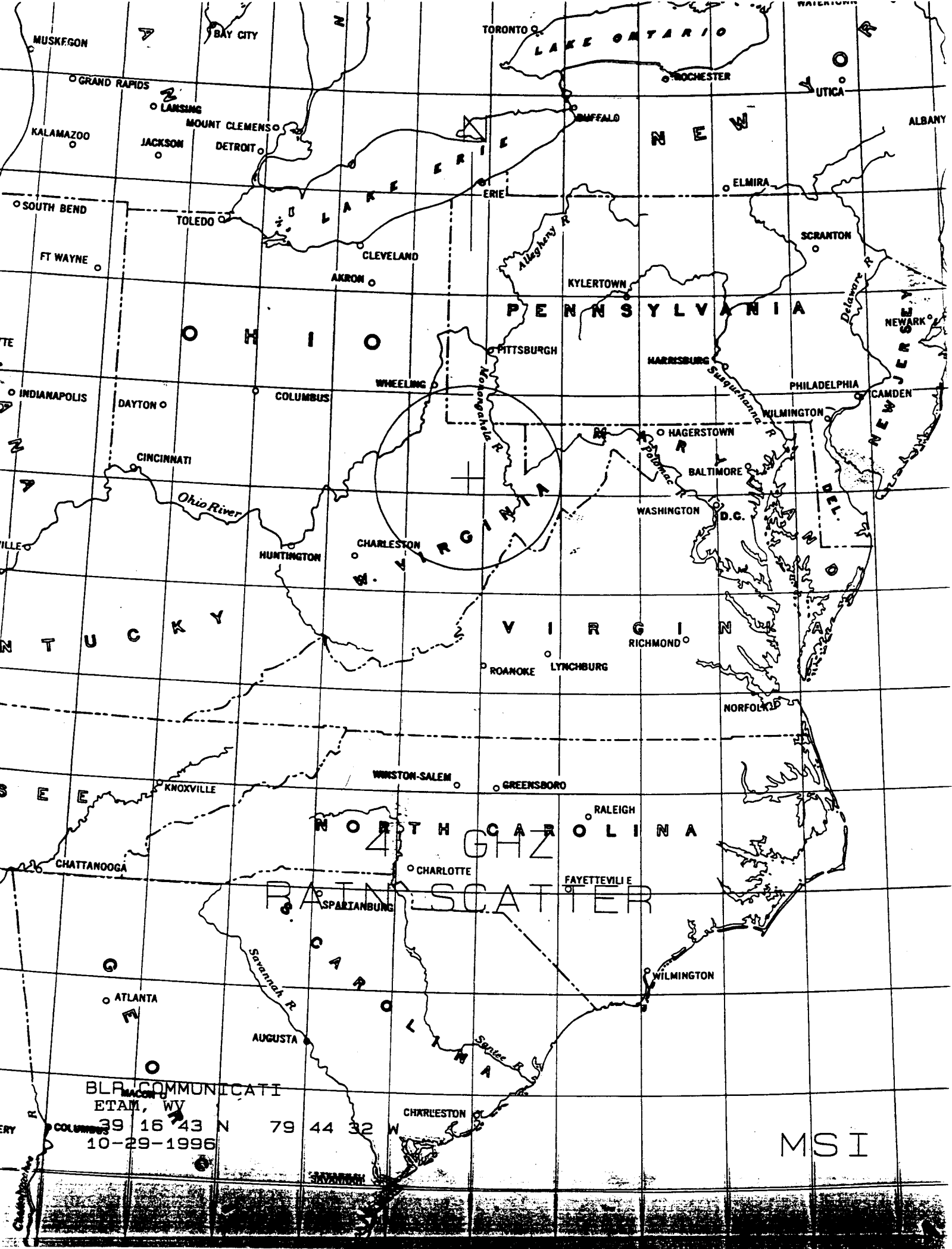
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