

Exhibit 1

Section 4 (B) RF output power at transmitter terminal

Out put Power	58dBm
	631 Watts

Section 4(C) Maximum effective Radiated Power (ERP)

System Radiated Power	550x20 watts
Antenna Gain	33.6 dB
Effective Radiated Power	25,119 KW

Section 4 (G) Necessary Bandwidth

The Maximum allowable radar emission bandwidth is calculated using NTIA Radar Spectrum Engineering Criteria D for new fixed radars operating in the 2700-2900 MHz band. The emission bandwidth B (-40 dB) is shown in Table 1 for each of the four radar waveforms. Waveform 1 uses a frequency-hopping non-FM Pulse and the emission bandwidth is evaluated using (1). Waveforms 2 through 4 use frequency-hopping FM pulses and the emission bandwidth is evaluated using (2). The equations are summarized below:

NTIA Criteria D, item d

$$B(-40 \text{ dB}) = \frac{6.2}{t_r t} + B_s \quad (1)$$

NTIA Criteria D, item c

$$B(-40 \text{ dB}) = \frac{6.2}{t_r t} + 2 * (B_c + \frac{0.105}{t_r}) + B_s \quad (2)$$

where

t_r = pulse rise time (10% to 90% amplitude points, usec)

t = pulse duration (50% amplitude points), usec

B_s = maximum range over which the carrier is shifted
for a frequency-hopping radar, MHz

B_c = total frequency shift during pulse duration, MHz

Table 1 - Radar Emission Bandwidth

Waveform Number	t (us)	t _r (us)	B _C (MHz)	B _S (MHz)	B(-40 dB) (MHz)
1	1	0.054	N/A	20	46.7
2	12.8	0.054	1.56	20	34.5
3	52	0.054	1.56	20	30.7
4	100	0.054	1.56	20	29.7

FARFIELD ANTENNA PATTERN RANGE CONFIGURATION

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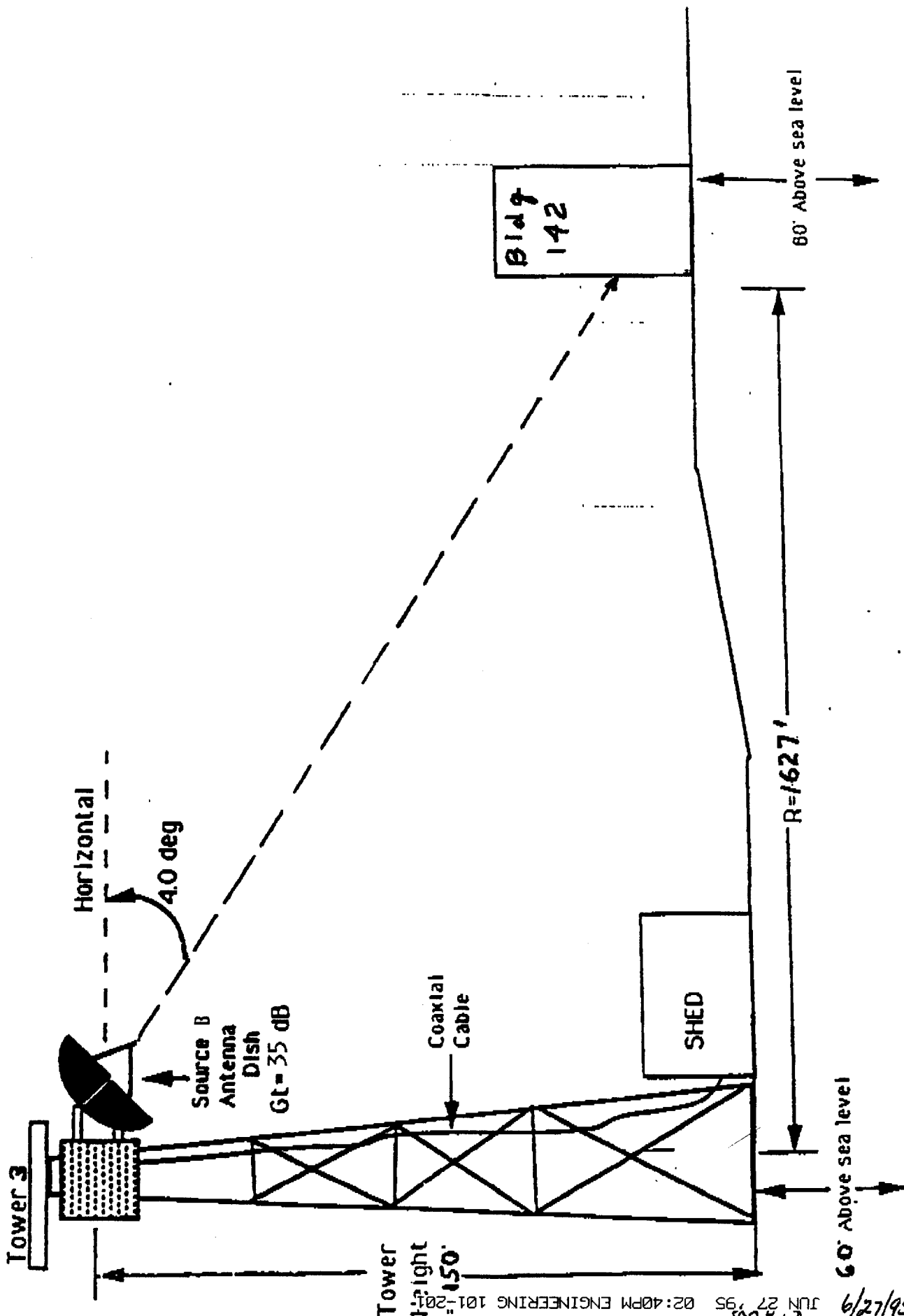


Exhibit 2A

6/27/95

Exhibit 4A



U.S. Department
of Transportation
**Federal Aviation
Administration**

NAD 83

Fitzgerald Federal Building
John F. Kennedy
International Airport
Jamaica, New York 11430

ACKNOWLEDGEMENT OF NOTICE OF EXISTING CONSTRUCTION OR ALTERATION

CITY	STATE	LATITUDE/LONGITUDE	MSL	AGL	AMSL
MOORESTOWN	NJ	39-58-46.40 074-54-51.60	60	150	210

MARTIN MARIETTA
GOVERNMENT ELECTRONIC SYSTEMS
PO BOX 1027, 199 BORTON LANDING RD.
MOORESTOWN, NJ 08057-3075

AERONAUTICAL STUDY
No: 93-AEA-1825-OE

Type Structure: ANTENNA TOWER LIGHTING STUDY

The Federal Aviation Administration hereby acknowledges receipt of notice dated 09/08/93 concerning the existing construction or alteration contained herein.

A study has been conducted under the authority of sections 307(A) and 313(A) of the Federal Aviation Act to determine whether the existing structure would be an obstruction to air navigation, and/or whether it should be marked and lighted to enhance safety in air navigation. The findings of that study are as follows:

The existing construction would not exceed FAA obstruction standards and would not be a hazard to air navigation.

Obstruction marking and lighting are not necessary.

If the structure is subject to the licensing authority of the FCC, a copy of this acknowledgement will be sent to that Agency.

NOTICE IS REQUIRED ANYTIME THE PROJECT IS ABANDONED OR THE PROPOSAL IS MODIFIED

SIGNED Edward E. Adcock Specialist, Systems Management Branch
Edward E. Adcock (718) 553-1230/1228
ISSUED IN: Jamaica, New York ON 11/01/93

THUR
13

6/27/95

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Exhibit 3 - Item 7

The Government project is the "Technical Reinvestment Project" (TRP). The agency is the Advanced Research Project Agency (ARPA) and the contract number is MDA972-94-2-0022.

See attached agreement between Martin Marietta and the Federal Aviation Administration.

Table 1 - Radar Emission Bandwidth

Waveform Number	t (us)	t _r (us)	B _c (MHz)	B _s (MHz)	B(-40 dB) (MHz)
1	1	0.045	N/A	20	49.2
2	12.8	0.045	1.56	20	36.0
3	52	0.045	1.56	20	31.8
4	100	0.045	1.56	20	30.7

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Exhibit 2

FARFIELD ANTENNA PATTERN RANGE CONFIGURATION

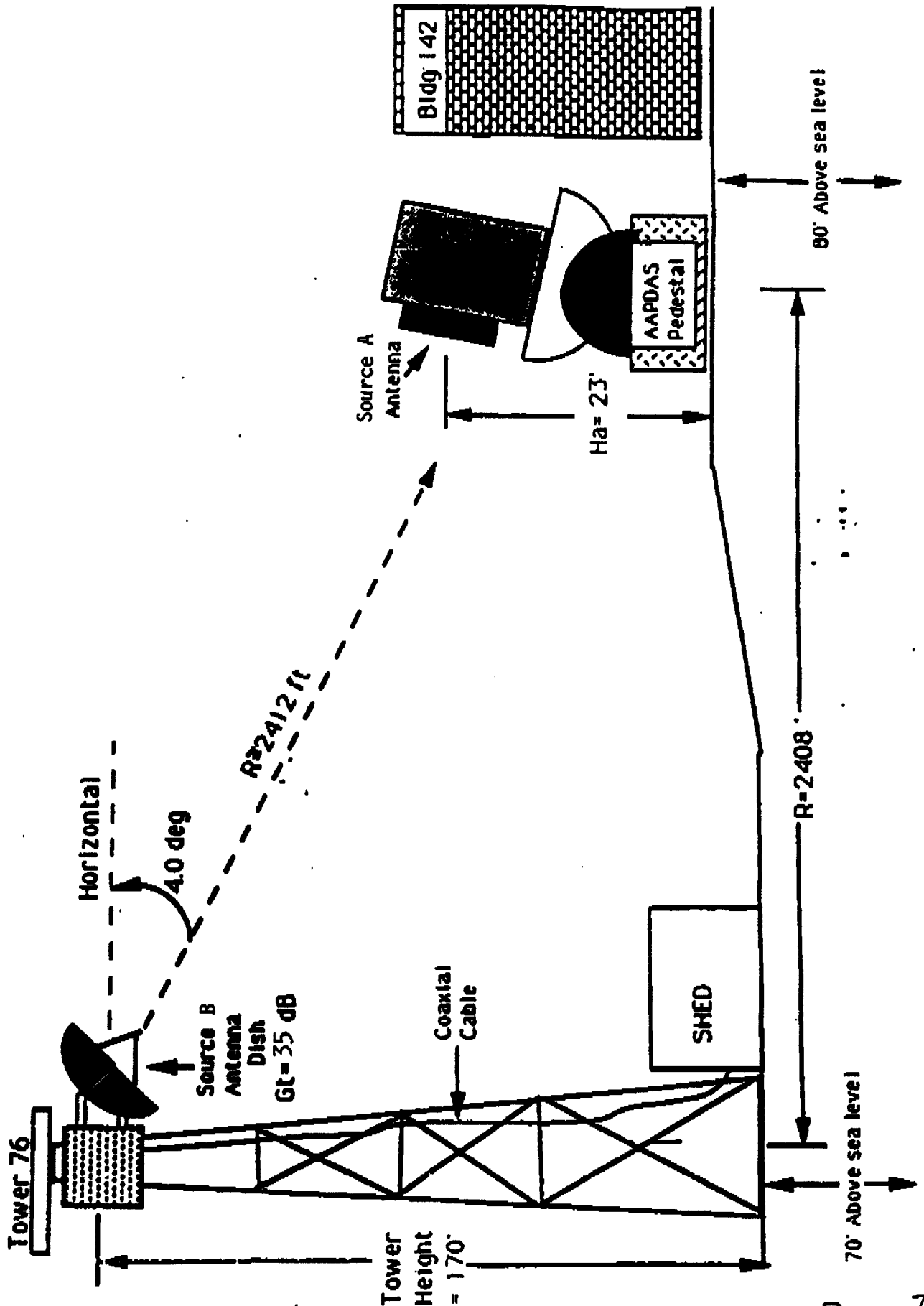


Exhibit 3 - cont.

COOPERATIVE RESEARCH AND DEVELOPMENT AGREEMENT

No. 93-CRDA-0036

MARTIN MARIETTA

and

FEDERAL AVIATION ADMINISTRATION

TECHNICAL CENTER

This Cooperative Research and Development Agreement ("CRDA"), dated September 7th, 1993, is entered into by and between the Martin Marietta (MM), a Corporation of the State of Maryland and the Federal Aviation Administration (FAA) Technical Center.

A. BACKGROUND

The FAA Terminal Area Surveillance System (TASS) Program Office has been tasked with determining the future surveillance architecture for the terminal area and with fielding a new terminal radar while using available technology developed under DOD research. Additionally, Martin Marietta is developing a single face, active solid state phased array demonstration radar system called Demonstration Terminal Area Surveillance System (DTASS) with discretionary funding. DTASS is a prototype system developed to show the feasibility of a phased array radar as a multi-function sensor in the terminal area subsequent to development. To ensure DTASS is demonstrated in a manner most suitable for realistic operation in the terminal area, FAA and other contractors acting on behalf of the FAA will assist Martin Marietta in preparing for the DTASS demonstration.

B. OBJECTIVE AND PLAN

The objective of this AGREEMENT is to allow the FAA through its employees and contractors to assist Martin Marietta in the demonstration of a prototype radar for the terminal area. As a result of this AGREEMENT, the following objectives will be met:

1. DTASS and the most current weather products will be compatible, resulting in a more effective demonstration of the radar and the weather products;
2. The demonstration plan will be more effective by including test events of most interest to FAA
3. The coordination and planning necessary for a timely,

effective system demonstration will be in place for rapid transition from Martin Marietta's integration testing to the Martin Marietta/FAA cooperative demonstration.

4. FAA air traffic management personnel will have an opportunity to influence system performance requirements based on the ATC system operational and procedural needs.

C. AGREEMENT

A. Whereas, the Congress in enacting the Federal Technology Transfer Act of 1986, Public Law No. 99-502, October 20, 1986, (Title 15, Chapter 63, United States Code), has found that Federal laboratories' developments should be made accessible to private industry, state and local Governments, and has declared that one of the purposes of such Act is to improve the economic, environmental and social well being of the United States by stimulating the utilization of Federally-funded technology developments by such parties; and

B. Whereas, the Federal Technology Transfer Act of 1986 and Executive Order 12591, April 10, 1987, among other technology transfer innovations, have provided each Federal agency with the authority to permit the Director of Government-operated Federal laboratories to enter into cooperative research and development agreements (CRDAs) with Federal or non-Federal entities, including private firms and organizations, for the purpose of providing to collaborating parties personnel, services, property, facilities, equipment, intellectual property or other resources (EXCEPT FUNDS), or obtaining from collaborating parties personnel, services, property, facilities, equipment, intellectual property or other resources (INCLUDING FUNDS) toward the conduct of specified research and development efforts which may include the disposition of patent rights in the inventions which may result from such collaboration; and

C. Whereas, FAATC is interested in the further demonstration of the technology and its utilization by the private and public sectors; and

D. Whereas, upon the successful completion of demonstrating the technology, Martin Marietta desires to carry out a plan for marketing of such technology; and

E. Whereas, FAA Technical Center views its collaboration with Martin Marietta to demonstrate the technology and the commitment of Martin Marietta to undertake its marketing plan to be in the furtherance of public interest; and

F. Whereas, Martin Marietta will design, develop, build and test a demonstration radar system and make it available for a future cooperative demonstration; and

G. Whereas, Martin Marietta has performed substantial research and development with respect to phased array radar for use in the terminal area.

C. AGREEMENT

NOW, THEREFORE, THE PARTIES HEREBY AGREE AS FOLLOWS:

Article 1. Definitions

As used in this AGREEMENT, the following terms shall have the following meanings and such meanings shall be equally applicable to both the singular and plural forms of the terms defined:

1.0 The term "AGREEMENT" means this Cooperative Research and Development AGREEMENT, or CRDA.

1.1 The term "Cooperative research and development program" means the research and development work as defined in the Obligation of the Parties in Article 2, paragraph 2.1.

1.2 The term "invention" means any invention or discovery (including software-related invention) which is or may be patentable or otherwise protected under Title 35 of the United States Code or any novel variety of plant which is or may be protectable under the Plant Variety Protection Act (7 U.S.C. 7321 et seq.).

1.3 The term "made" in relation to any invention means the conception or first actual reduction to practice of such invention.

1.4 The term "net royalties or other income" means amounts received from any transaction less sales and/or use taxes actually paid, import and/or export duties actually paid, transportation or shipping costs prepaid or allowed, amounts allowed or credited due to returns, outside sales commissions, if any, discounts allowed and taken, transportation insurance, if any, and reasonable costs incurred in the original prosecution of a patent application or in registering a copyright. Such costs are limited to costs directly related to the transaction.

1.5 The term "effective date" means the date on which the Director of the FAA Technical Center signs the AGREEMENT.

1.6 The term "proprietary information" means information which could provide a competitive advantage to the party possessing such information and which either embodies trade secrets developed at private expense and outside of any

EXHIBIT 4



U.S. Department
of Transportation
Federal Aviation
Administration

NAD-83

Eastern Region

Fitzgerald Federal Building
John F. Kennedy
International Airport
Jamaica, New York 11430

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CITY	STATE	LATITUDE/LONGITUDE	MSL	AGL	AMSL
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MARTIN MARIETTA
GOVT ELECT SYS ATTN: MR HUNTSINGER
PO BOX 1027, 199 BORTON LANDING RD.
MOORESTOWN, NJ 08057-3075

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SIGNED Edward E. Adcock Specialist, Systems Management Branch
Edward E. Adcock (718) 553-1230/1228
ISSUED IN: Jamaica, New York ON 11/01/93

Exhibit 5

**United States of America Federal Communications Commission
Experimental Radio Station Construction Permit and License
Call Sign KB2XDS, File Number 4507-EX-PL-94 for;**

**Lockheed Martin Corporation
Moorestown, (Burlington) NJ-NL 39-58-45; WL 074-54-54**

**Special Condition (5)
In the high power mode the main beam azimuth is restricted to azimuths
between 70 degrees and 120 degrees.**

**A modification is requested to allow in the high power mode the main beam to
scan in Azimuth plus and minus 135 degrees from Tower 76 (Attachment 2).**

FARFIELD ANTENNA PATTERN RANGE CONFIGURATION

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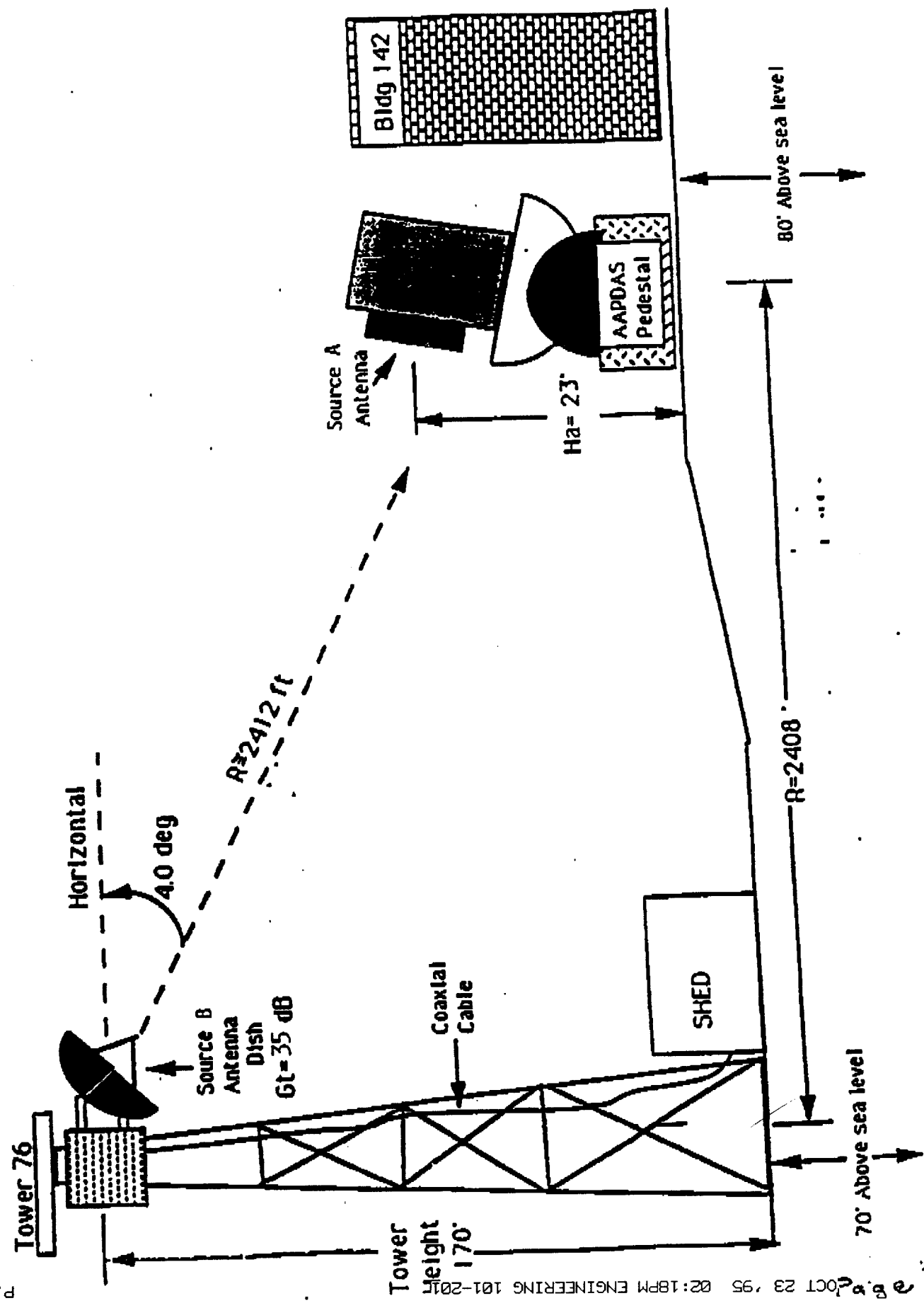


Exhibit 2