



## MILPITAS PLANNING COMMISSION AGENDA REPORT

### PUBLIC HEARING

Meeting Date: October 13, 2010

---

**APPLICATION:** **CONDITIONAL USE PERMIT NO. UP09-0040 AND MINOR SITE DEVELOPMENT NO. MS09-0011**

**APPLICATION SUMMARY:**

A request to install two new 24' tall satellite dish antennae on 7' tall concrete pedestals and associated site improvements in the rear parking lot area behind an existing industrial building

**LOCATION:** 461 S. Milpitas Blvd. (APN: 086-42-016)

**APPLICANT:** Globalstar Inc., 461 S. Milpitas Blvd., Milpitas, CA 95118

**OWNER:** Adaptec Inc., 461 S. Milpitas Blvd., Milpitas, CA 95118

**RECOMMENDATION:** **Staff recommends that the Planning Commission: Adopt Resolution No. 10-004, approving the project subject to the conditions of approval.**

**PROJECT DATA:**

General Plan/

Zoning Designation: Manufacturing & Warehousing / Heavy Industrial (M2)

Overlay: Site and Architectural Review Overlay District (-S).

CEQA Determination: Categorically exempt from further environmental review pursuant to Section 15303 of the California Environmental Quality Act Guidelines.

**PLANNER:** Cindy Hom, Assistant Planner

**PJ:** 2609

**ATTACHMENTS:**

- A. Resolution No.
- B. Project Plans
- C. Memo dated August 26, 2016
- D. 9/20/10 Telecommunication Commission Meeting Minutes
- E. Telecommunication Questionnaire Form
- F. Power Density Study
- G. FCC License

# LOCATION MAP



No scale

**BACKGROUND**

On April 14, 2010, the Planning Commission continued the item to allow time for the applicant to work with adjacent neighbors' to address their concerns and to allow for a Telecommunication Commission review of the project which occurred on September 20, 2010. The Telecommunication Commission reviewed the project and directed Globalstar to report back its October 18 meeting with a resolution to Magic Technology's request for a third party study on the Radio Frequency (RF) emission. A copy of the Telecommunication Commission meeting minutes are provided in Attachment D.

During the course of the year, the applicant has meet with the adjacent neighbor, Magic Technologies on April 21, 2010, May 12, 2010 and August 25, 2010 to resolve the following concerns:

1. Loss of Parking Spaces - Globalstar has relocated the proposed antennae and equipment to be located on their leased half of the parking area.
2. Interference to Magic's existing line-of-sight microwave link between Magic and Headway – Magic Technology existing line-of-site microwave link operates at the unlicensed U-NII band of 5.25 to 5.35 GHz and 5.725 to 5.825 GHz under the FCC rules whereas Globalstar's proposed facility is licensed and operates at 5.091 to 5.25 GHz to 6.875 to 7.055 GHz receive bands and therefore the frequencies are outside of the U-NII band. Furthermore, the antennae will not operate lower than 10 degree elevation angle. Globalstar will incorporate a masking profile to prevent the antennae from pointing directly to Magic's line of sight antennae.
3. Potential radiation effects and health risk – Globalstar's proposed satellite facility are within the FCC thresholds for emission levels. Globalstar also agreed to have an independent third-party study to measure the power density of the proposed satellite antennae that will be prepared prior to the installation of the facility.

A copy of the correspondence is provided in Globalstar's memo dated August 26, 2010 and its follow up dated September 11, 2010. (Attachment C)

**PROJECT DESCRIPTION**

The project proposal entails deletion of 28 parking spaces and approximately 272 square feet of landscaping not required by city ordinance or conditions of approval, to allow for the installation of two 18-foot diameter satellite antennae located in the rear parking lot area. Each of the proposed satellite antennae measure 24 feet in height and are mounted on top of a seven foot tall concrete pedestal and will be enclosed by eight foot tall metal security fencing.

The project site is located on the southwest of the intersection at South Milpitas Boulevard and Topaz Street and is developed with two buildings that provide approximately 160,570 square feet of building area, landscaping, and surface parking. The project is zoned Heavy Industrial and surrounded by other industrial buildings and uses. A vicinity map of the project site is shown on the previous page.

***Development Standards***

The project proposes two new exterior equipment areas (approximately 1,750 square foot) to allow installation of two 24-tall, 18-foot diameter satellite antennae that are installed on top of a 7-foot tall concrete platform. Staff recommends as a condition of approval, the applicant install a two-inch curbing around the concrete platforms to provide a buffer between the equipment and drive aisle.

Table 1 demonstrates compliance with development standards for the Heavy Industrial (M2) Zone.

**Table 1:**  
**M2 Development Standards**

	<i>Zoning Ordinance</i>	<i>Proposed Antennae Installation</i>
<u>Setbacks</u> (Minimum)		
Front to Primary Structure	35'	Complies-152'
Interior	None	Complies
Rear	None	Complies
<u>Floor Area Ratio</u> (Maximum)	0.40	Complies-0.33
<u>Building Height</u> (Maximum)	None; however any structure exceeding 3 stories or 35' required Planning Commission approval	31'-1 3/4"
<u>Parking</u> (Minimum) may be discussed in the section below	487	Complies-605
<u>Landscaping</u> (Minimum)	Front and Street side	Complies

***Parking***

The project site currently provides 633 parking spaces. The project proposal removes 28 parking spaces to accommodate the antenna facilities and the subsequent realignment of the fire access lane. As demonstrated in the below table, the deletion of 28 parking spaces will result in the project site maintaining compliance with the zoning ordinance. The table below confirms compliance for the project site.

**Table 2**  
**Required Parking**

<i>Building</i>	<i>Building sq.ft.</i>	<i>Parking Ratio</i>	<i>Parking Required</i>
Bldg. 5	59,370	1 per 300 sq.ft.	197

<i>Building</i>	<i>Building sq.ft.</i>	<i>Parking Ratio</i>	<i>Parking Required</i>
Bldg. 6	108,855	1 per 350 sq.ft.	289
<b>Total number of parking spaces required</b>			<b>487</b>
<b>Total number of existing parking spaces</b>			<b>633</b>
<b>Total number of parking spaces to be removed</b>			<b>28</b>
<b>Total number of parking spaces provided with project</b>			<b>605</b>

***Internal Circulation***

There are two driveway entrances that allow vehicle access to the Globalstar facility from South Milpitas Boulevard. The existing circulation consists of drive aisles that provide access to parking on the south, west, and north side of the building. The project would result in the removal of parking spaces along the west side of building to allow for the installation of the satellite facility and realignment of the fire lane. Staff recommends as a condition of approval that prior to building permit issuance, the applicant shall realign the drive aisle to the approval of the Fire Department.

**ADOPTED PLANS AND ORDINANCES CONSISTENCY**

***General Plan***

The table below outlines the project’s consistency with applicable General Plan Guiding Principles and Implementing Policies:

**Table 3**  
**General Plan Consistency**

<b>Policy</b>	<b>Consistency Finding</b>
<p><i>2.a-I-3:</i> <i>Encourage economic pursuits which will strengthen and promote development through stability and balance.</i></p>	<p><b>Consistent.</b> The project would encourage economic pursuits by supporting the research and development of new satellite communication technology and promotes business retention.</p>

***Zoning Ordinance***

The project proposal is consistent with the Zoning Ordinance in that the layout of the site and design of the enclosures are compatible and aesthetically harmonious with adjacent and surrounding development by utilizing colors and material that complement the surrounding buildings. The proposed location would minimize visual impact from South Milpitas Boulevard because the proposed antennae would be obscured from view behind a two story industrial building. The proposed antennae also will not be detrimental or injurious to the property or improvements in the vicinity nor to the public health, safety, and general welfare in that the structure will not obstruct access to air or light or otherwise pose any physical engineering risks. Radio Frequency (RF) emissions standards are addressed below.

***RF Emissions***

The Federal Communications Commission heavily regulates RF emissions. Globalstar has represented that it is a common carrier running an experimental and development facility subject to FCC licensing and is thus exempt from local RF emission regulation under federal law. Such documentation is being reviewed by City staff. The FCC has established guidelines that place limits on human exposure to RF fields and Globalstar represents that it will be operating well within those safety limits. These guidelines have been endorsed by the U.S. Environmental Protection Agency and the Food and Drug Administration. As mentioned above, Globalstar has also agreed to the conduct of an independent third-party study to measure the power density (emissions) of the proposed satellite antennae to address concerns raised by neighboring uses.

**ENVIRONMENTAL REVIEW**

The Planning Division conducted an initial environmental assessment of the project in accordance with the California Environmental Quality Act (CEQA). Staff determined that the project is categorically exempt from further environmental review pursuant to Section 15303(e) and 15311 of the CEQA guidelines because the project includes minor accessory structures that are incidental to the principal use of the site and the existing structures thereon.

**PUBLIC COMMENT/OUTREACH**

Staff publicly noticed the application in accordance with City and State law. As of the time of writing this report, there have been no inquiries from the public.

**CONCLUSION**

The project is consistent with the General Plan in that it encourages economic pursuits and furthers the research and development of satellite technology. The project also conforms to the Milpitas Zoning Ordinance in that the project complies with the development standards and set back requirements. The proposed location for the satellite facility is suitable and appropriate because it is within the valley floor on an existing industrial site and concealed from views on South Milpitas Boulevard. As conditioned, the project will not be injurious or detrimental to property, improvements, and public safety and general welfare.

**RECOMMENDATION**

**STAFF RECOMMENDS THAT** the Planning Commission close the public hearing and adopt Resolution No. 10-004 approving Conditional Use Permit No. UP09-0040 and Minor Site Development Permit No. MS09-0011, subject to the Conditions of Approval.

***Attachments:***

- A. Resolution No. 10-004
- B. Project Plans
- C. Memo dated August 26, 2010
- D. 9/20/10 Telecommunication Commission Meeting Minutes
- E. Telecommunication Questionnaire Form
- F. Power Density Study
- G. FCC License

**RESOLUTION NO. 10-004**

**A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF MILPITAS, CALIFORNIA, APPROVING CONDITIONAL USE PERMIT NO. UP09-0040 AND MINOR SITE DEVELOPMENT PERMIT NO. MS09-0011, TO CONSTRUCT TWO NEW 24' TALL ANTENNAE WITH ENCLOSURES, LOCATED AT 461 S. MILPITAS BLVD.**

**WHEREAS**, on September 22, 2009, an application was submitted by Hugo Ojeda, 998 Park Ave., San Jose, CA 95126, A request to construct two new 24' tall antennae with enclosures at 461 S. Milpitas Blvd. The property is located within the Heavy Industrial Zoning district (APN 086-42-016); and

**WHEREAS**, the Planning Division completed an environmental assessment for the project in accordance with the California Environmental Quality Act (CEQA), and recommends that the Planning Commission determine this project categorically exempt from further environmental review; and

**WHEREAS**, on January 13, 2010, the Planning Commission held a duly noticed public hearing on the subject application, and continued the item and to the January 27, 2010 Planning Commission Meeting; and

**WHEREAS**, on January 27, 2010, the Planning Commission held a duly noticed public hearing on the subject application, and considered evidence presented by City staff, the applicant, and other interested parties, and tabled the item to a date uncertain to address unresolved issues with the project.

**WHEREAS**, on April 14, 2010, the Planning Commission held a duly noticed public hearing on the subject application, and considered evidence presented by City staff, the applicant, and other interested parties. The Planning Commission continued the item to its July 14, 2010 meeting; and

**WHEREAS**, on July 14, 2010, the Planning Commission held a duly noticed public hearing on the subject application and was continued to September 8, 2010 Planning Commission meeting; and

**WHEREAS**, on September 8, 2010, the Planning Commission held a duly noticed public hearing on the subject application, and considered evidence presented by City staff, the applicant, and other interested parties, and tabled the item to a date uncertain; and

**WHEREAS**, on October 13, 2010, the Planning Commission held a duly noticed public hearing on the subject application, and considered evidence presented by City staff, the applicant, and other interested parties.

**NOW THEREFORE**, the Planning Commission of the City of Milpitas hereby finds, determines and resolves as follows:

**Section 1:** The recitals set forth above are true and correct and incorporated herein by reference.

**Section 2:** Categorically exempt from further environmental review pursuant to Section 15303(e) of the California Environmental Quality Act Guidelines in that the project consisting of installation of two satellite antenna structures and minor alteration in land is incidental to the principal use of the site.

**Section 3:** The project proposal is consistent with the General Plan Policies 2.a-I-3 and in that encourages economic pursuits and business retention by allowing an existing Milpitas business to further their research and development of satellite technology.

**Section 4:** With respect to the Conditional Use Permit:

a. The proposed antennae also will not be detrimental or injurious to the property or improvements in the vicinity nor to the public health, safety, and general welfare in that the proposed RF emissions are within the FCC limitations for human exposure to RF fields. The project will not be injurious to property in that will not affect the operations of adjacent uses. The project provide for adequate parking and circulation.

b. The proposed use is consistent with the Milpitas Zoning Ordinance in that the project complies with the development standards for the Heavy Industrial Zone and Milpitas Parking Ordinance.

c. The project provides for an aesthetic and harmonious development in that it utilizes materials and colors that complement the building and is concealed from views on South Milpitas Boulevard.

**Section 5:** With respect to the Minor Site Development Permit:

a. The development recognizes and respects the nature of the neighborhood and site, development patterns, materials used, and the expectations of those who will see and use the site in that this Globalstar is a research and development facility for satellite technology. The project site is located in the valley floor Heavy Industrial Zone

b. The development assures that modifications satisfy functional requirements, and screened with appropriate compatible materials in that the proposed satellite facility is concealed behind an industrial building and will not be visible from South Milpitas Boulevard. The structures would utilize material and colors that complement the building.

c. The development assures that the modification will not interfere with the privacy, quiet enjoyment or view of the surrounding properties in that the project site is not located near any residential uses or any scenic resources.

**Section 6:** The Planning Commission of the City of Milpitas hereby approves Conditional Use Permit No. UP09-0040 and Minor Site Development Permit No. MS09-0011, subject to the above Findings, and Conditions of Approval attached hereto as Exhibit 1.

**PASSED AND ADOPTED** at a regular meeting of the Planning Commission of the City of Milpitas on October 13, 2010.

---

Chair

**TO WIT:**

**I HEREBY CERTIFY** that the following resolution was duly adopted at a regular meeting of the Planning Commission of the City of Milpitas on October 13, 2010, and carried by the following roll call vote:

<b>COMMISSIONER</b>	<b>AYES</b>	<b>NOES</b>	<b>ABSENT</b>	<b>ABSTAIN</b>
Cliff Williams				
Lawrence Ciardella				
Sudhir Mandal				
Gurdev Sandhu				
Steve Tao				
Noella Tabladillo				
Mark Tiernan				
John Luk				

**EXHIBIT 1**

**CONDITIONS OF APPROVAL  
CONDITIONAL USE PERMIT NO. UP09-0041 AND MINOR SITE DEVELOPMENT  
PERMIT NO. MS09-0011**

A request to construct two new 24' tall antennae with enclosures.  
461 S. Milpitas Blvd. (APN: 086-42-016)

**General Conditions**

1. The owner or designee shall develop the approved project in conformance with the plans and color and materials sample boards approved by the Planning Commission on October 13, 2010, in accordance with these Conditions of Approval.

Any deviation from the approved site plan, floor plans, elevations, materials, colors, or other approved submittal shall require that, prior to the issuance of building permits, the owner or designee shall submit modified plans and any other applicable materials as required by the City for review and obtain the approval of the Planning Director or Designee. If the Planning Director or designee determines that the deviation is significant, the owner or designee shall be required to apply for review and obtain approval of the Planning Commission, in accordance with the Zoning Ordinance. (P)

2. UP09-0040 and MS09-0011 shall become null and void if the project is not commenced within 18 months from the date of approval. Pursuant to Section 64.06(2) of the Zoning Ordinance of the City of Milpitas. If the project requires the issuance of a building permit, the project shall be deemed to have commenced when the date of the building permit is issued and/or a foundation is completed, if a foundation is a part of the project. If the project does not require the issuance of a building permit, the project shall be deemed to have commenced when dedication of any land or easement is required or complies with all legal requirements necessary to commence the use, or obtains an occupancy permit, whichever is sooner.

Pursuant to Section 64.06(1), the owner or designee shall have the right to request an extension of UP09-0040 and MS09-0011 if said request is made, filed and approved by the Planning Commission prior to expiration dates set forth herein. (P)

3. If at the time of application for permit there is a project job account balance due to the City for recovery of review fees, review of permits will not be initiated until the balance is paid in full. (P)
4. Prior to the issuance of building permits, the owner or designee shall include within the four first pages of the working drawings for a plan check, a list of all conditions of approval imposed by the final approval of the project. (P)
5. The applicant shall install a minimum two-inch curb buffer around the proposed concrete platforms, as shown on Engineering Exhibit "S" dated 10/5/10. (E)

6. Prior to building permit issuance, the applicant shall reconfigure the fire lane to at the approval of the Fire Department. (F)

(P) = Planning

(B) = Building

(E) = Engineering

(F) = Fire Prevention

**DRAWING INDEX:**

**ARCHITECTURAL**

DWG #	TITLE	REV#
1	A0 COVER SHEET	A
2	A0.1 SITE PLAN	A
3	A0.2 PROPOSED PARTIAL SITE PLAN	A
4	A1.0 PLAN, SECTIONS AND ELEVATIONS	A

**BUILDING DATA:**

OCCUPANCY: B  
 TYPE OF CONSTRUCTION: TYPE V-B  
 SPRINKLERED: YES  
 STORIES: 1  
 BUILDING AREA: 59,370 SF  
 APN: 086-42-016  
 ZONE: M2

PROJECT AREA: 1750 SF

BASIC WIND SPEED: 85 MPH  
 EXPOSURE B

SEISMIC LOADING:  
 (C.B.C. 1613, ASCE 7-05)  
 DESIGN CATEGORY D  
 SITE CLASS D  
 OCCUPANCY CATEGORY II  
 IMPORTANCE FACTOR 1.0  
 $S_{DS}=1.0, S_{D1}=0.60$

**PROJECT SCOPE:**

INSTALL TWO SATELLITE ANTENNAES WITH THEIR ASSOCIATED CONCRETE BASES AND ACCESS STAIRS.  
 TRENCH UNDERGROUND TO BUILDING 5 FOR CABLES.  
 RE-STRIPE EXISTING PARKING FOR REGAIN LOST SPACES DUE TO LOCATION OF NEW CONCRETE BASES.



**461 S. MILPITAS BLVD.  
 MILPITAS, CALIFORNIA 95035**

**Telecommunications Committee Submittal  
 PLANNING PACKAGE  
 PROPOSED LAYOUT FOR NEW  
 ANTENNA INSTALLATION**

**10/4/2010**

**Planning Commission Submittal**

**SITE ANALYSIS:**

SITE AREA: 494,402  
 ALLOWABLE BUILDING AREA: XX  
 BUILDING ZONE: M2  
 LANDSCAPED AREA: -  
 EXISTING FLOOR AREA:  
 BLDG. 5 59,370 S.F.  
 BLDG. 6 101,200 S.F.  
 TOTAL BUILDING AREA: 160,570 S.F.  
 EXISTING FAR: 32%  
 ALLOWABLE FAR: XX  
 EXISTING SITE FLOOR AREA:  
 (BLDG. FOOTPRINTS) 160,570 S.F.  
 PROPOSED FOOTPRINT ADDITION: 1,750 S.F.  
 ALLOWABLE FLOOR AREA RATIO: XX  
 TREES REMOVED: 0  
 TREES ADDED: 0  
 GROUND COVER REMOVED: 272 S.F.  
 GROUND COVER ADDED: XX

**PARKING ANALYSIS:**

**REQUIRED PARKING PER CITY OF MILPITAS:**

RESEARCH & DEVELOPMENT ( BLDG 5 ) BLDG. = 1 PER 300 S.F.  
 OFFICE SPACE WITHIN AN INDUSTRIAL ( BLDG 6 ) = 1 PER 350 S.F.

BLDG. 5 ----- 59,370 S.F. (1/300) = 198 SPACES  
 BLDG. 6 ----- 101,200 S.F. (1/350) = 289 SPACES

PARKING REQUIRED: = 487 SPACES

EXISTING REGULAR PARKING SPACES: 623 SPACES  
 EXISTING ACCESSIBLE PARKING STALLS: 10 SPACES  
 TOTAL PARKING SPACES: 633 STALLS

PARKING LOST TO NEW PROPOSED CONSTRUCTION = 28 SPACES

TOTAL AVAILABLE PARKING SPACES AFTER CONSTRUCTION = 605 SPACES  
 605 SPACES > 487 REQUIRED = OK

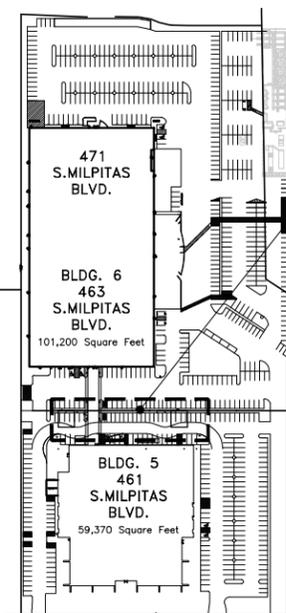
TOTAL ACCESSIBLE PARKING REQUIRED: (2% OF TOTAL) 13 SPACES  
 (2007 C.B.C. TABLE 11B-6)

TOTAL VAN ACCESSIBLE PARKING REQUIRED: (ONE IN EVERY EIGHT) 1 SPACE  
 (2007 C.B.C. SECTION 1129B.3.2)

**BUILDING CODES:**

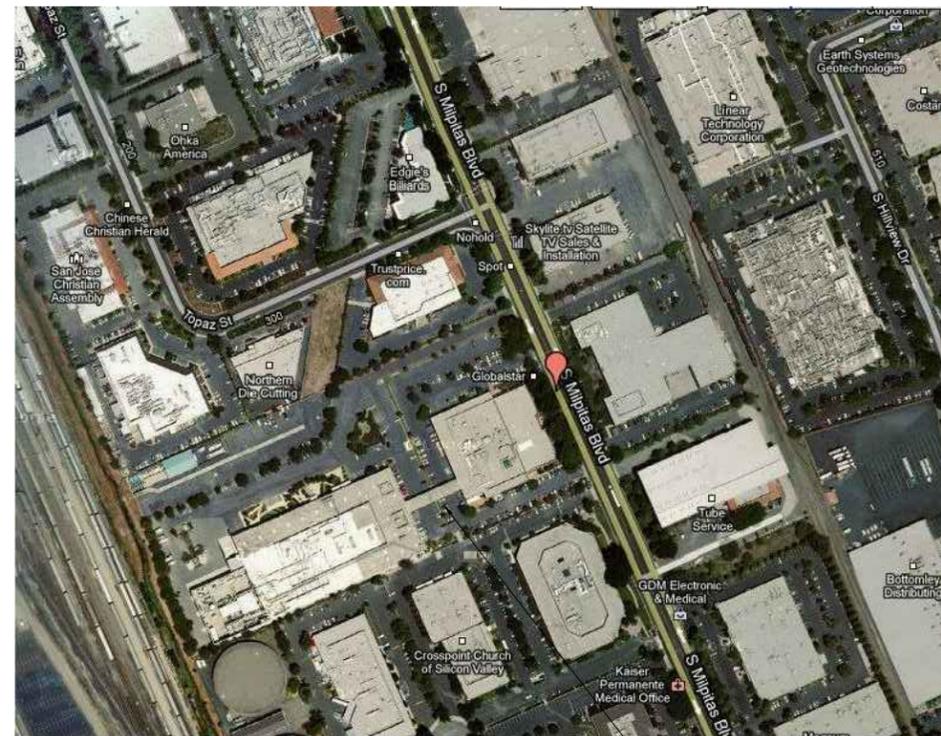
- CALIFORNIA BUILDING CODE (CBC) 2007 EDITION
- CALIFORNIA TITLE 24 ENERGY EFFICIENCY STANDARDS 2008 EDITION
- CALIFORNIA FIRE CODE (CFC) 2007 EDITION
- CALIFORNIA MECHANICAL CODE (CMC) 2007 EDITION
- CALIFORNIA PLUMBING CODE (CPC) 2007 EDITION
- CALIFORNIA ELECTRICAL CODE (CEC) 2007 EDITION
- NATIONAL ELECTRIC CODE (NEC) 2005 EDITION
- 2008 MILPITAS MUNICIPAL CODE

ALONG WITH ANY OTHER APPLICABLE LOCAL AND STATE LAWS AND REGULATIONS.



PROJECT LOCATION

**SITE PLAN:**



**VICINITY & LOCATION:**

PROJECT LOCATION  
 461 S. MILPITAS BLVD.,  
 MILPITAS, CA 95035



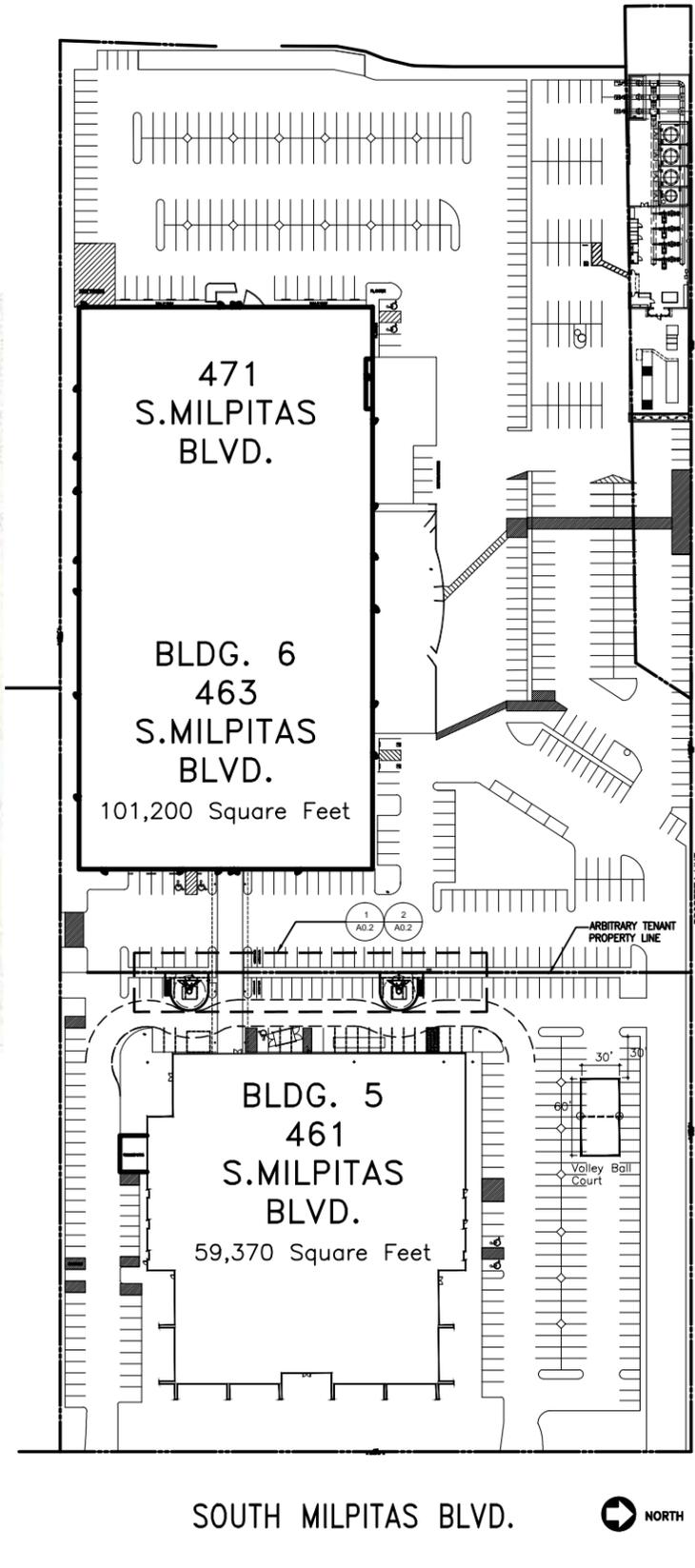
461 S. MILPITAS BLVD.,  
 MILPITAS, CA 95035  
**PLANNING PACKAGE  
 PROPOSED LAYOUT FOR  
 NEW ANTENNA INSTALLATION**  
**COVER SHEET**



REV	DESCRIPTION
A	ISSUE FOR PLANNING DATE: 10/4/2010

GP JOB NUMBER:	1010125
CAD NUMBER:	125A00a8.dwg
DATE:	07/06/10
DRAWN BY:	GP

<b>A00</b>	
SCALE:	AS SHOWN
SHEET:	01



1 SITE PLAN  
A01 SCALE: 1"=60'



**Gordon Prill**  
Architecture | Engineering | Construction  
main 650-335-1970  
fax 650-335-1988  
1245 PEAR AVENUE,  
MOUNTAIN VIEW, CA 94035

461 S. MILPITAS BVD.,  
MILPITAS, CA 95035  
**PLANNING PACKAGE  
PROPOSED LAYOUT FOR  
NEW ANTENNA INSTALLATION**



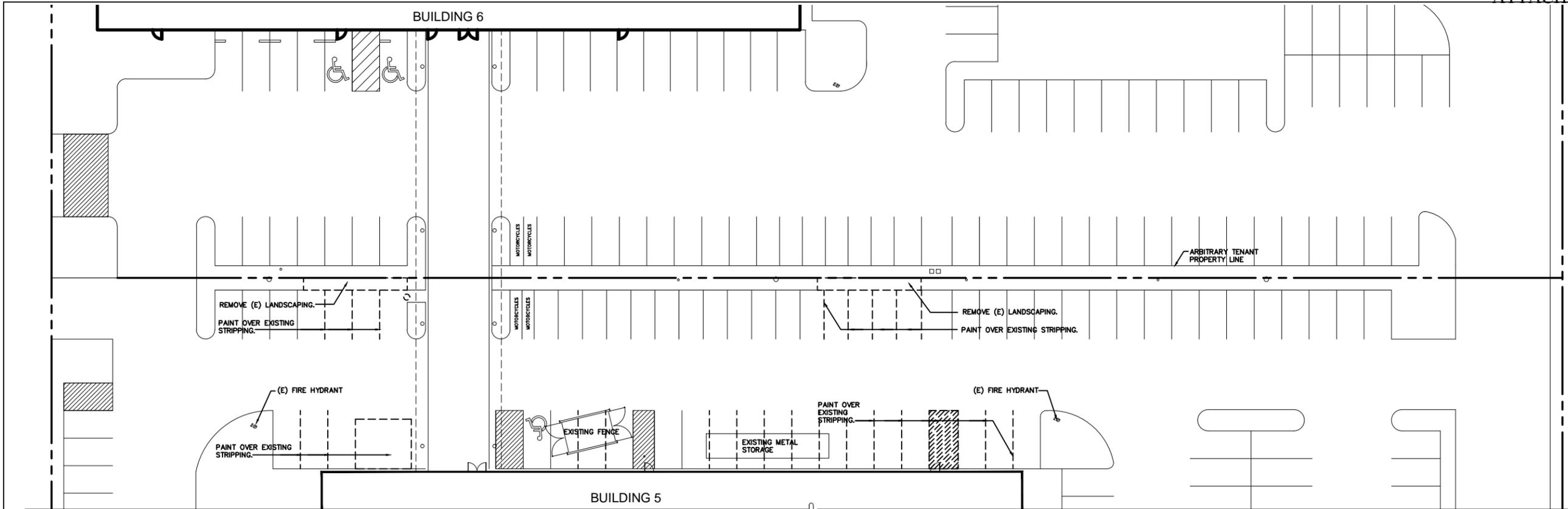
SITE PLAN

REV	DESCRIPTION
A	ISSUE: FOR PLANNING DATE: 10/4/20

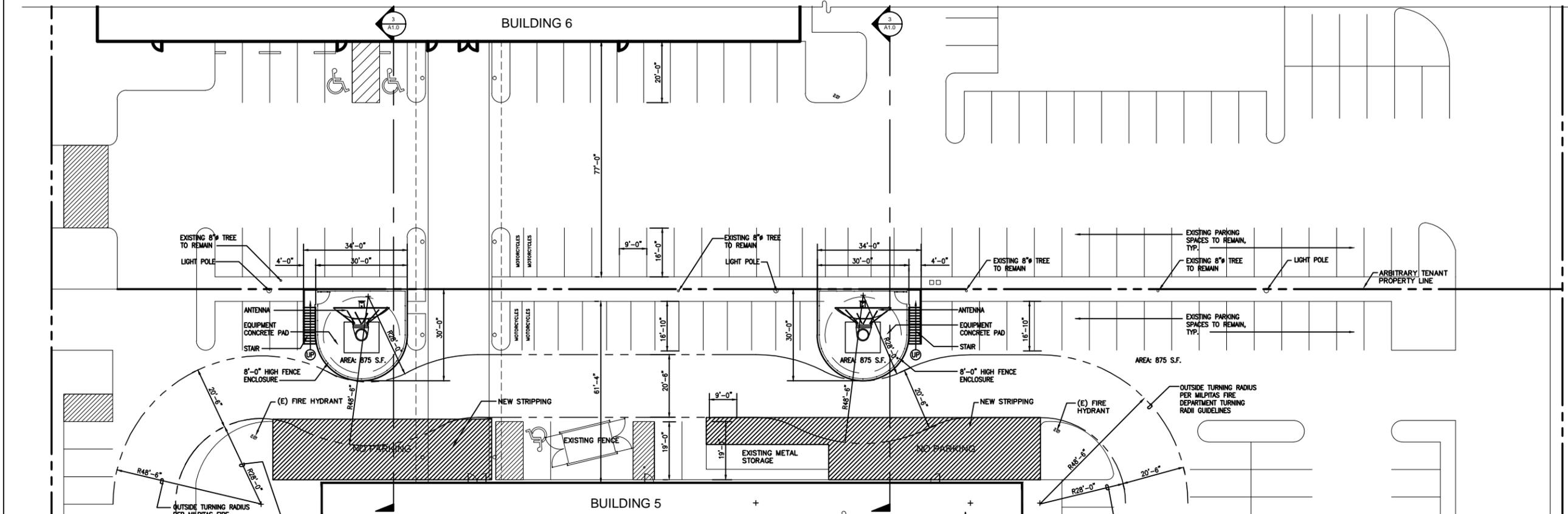
GP JOB NUMBER:	101012
CAD NUMBER:	125A01cd.dwg
DATE:	07/06/1
DRAWN BY:	G

A01

SCALE:	AS SHOWN
SHEET:	01



**1** PROPOSED PARTIAL SITE PLAN (DEMOLITION)  
 A0.2 SCALE: 1/16"=1'-0"



**2** PROPOSED PARTIAL SITE PLAN (CONSTRUCTION)  
 A0.2 SCALE: 1/16"=1'-0"

481 S. MILPITAS BVD.,  
 MILPITAS, CA 95035  
**PLANNING PACKAGE**  
**PROPOSED LAYOUT FOR**  
**NEW ANTENNA INSTALLATION**



PROPOSED PARTIAL SITE PLAN

REV	DESCRIPTION
A	ISSUE FOR PLANNING DATE: 10/4/20

GP JOB NUMBER:	101012
CAD NUMBER:	125A0208.dwg
DATE:	07/06/1
DRAWN BY:	G

A0.2

SCALE:	AS SHOWN
SHEET:	0P

REV	DESCRIPTION
A	ISSUE: FOR PLANNING DATE: 10/4/20

GP JOB NUMBER:	101012
CAD NUMBER:	125A0308.dwg
DATE:	07/06/1
DRAWN BY:	G

**A0.3**

SCALE:	AS SHOWN
SHEET:	01



3  
A0.3 SCALE: NONE



2  
A0.3 SCALE: NONE



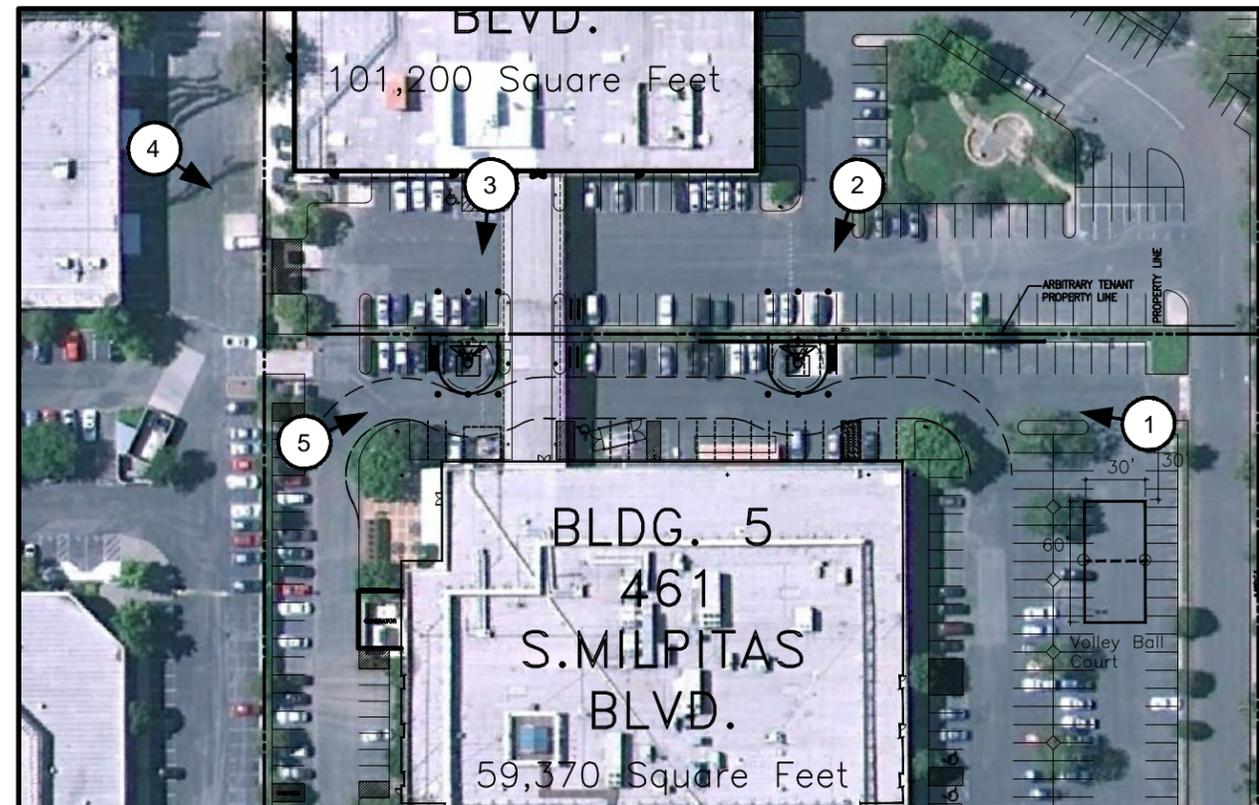
1  
A0.3 SCALE: NONE



4  
A0.3 SCALE: NONE



5  
A0.3 SCALE: NONE



1  
A01 SITE PLAN  
SCALE: 1"=40'







GlobalStar 461 South Milpitas Boulevard - Milpitas California – VIEW 1 FROM MILPITAS BOULEVARD PHOTO SIMULATION (LOOKING SOUTH)



GlobalStar 461 South Milpitas Boulevard - Milpitas California – VIEW 2 FROM PARKING LOT NEAR BUILDING 6 ( LOOKING EAST)



GlobalStar 461 South Milpitas Boulevard - Milpitas California – VIEW 3 FROM PARKING LOT BREEZEWAY NEAR BUILDING 6 ( LOOKING EAST)



GlobalStar 461 South Milpitas Boulevard - Milpitas California – VIEW 4 ( LOOKING NORTH)



GlobalStar 461 South Milpitas Boulevard - Milpitas California – VIEW 5 from Building 5 parking lot (LOOKING NORTH)



GLOBALSTAR, INC.  
461 SO. MILPITAS BLVD.  
MILPITAS, CA 95035

Tel: (408) 933-4000  
Fax: (408) 933-4100  
www.globalstar.com

August 26, 2010

## Memorandum

This memo documents subjects discussed between Globalstar and MagIC Technologies (MagIC) since April 21, 2010 and what Globalstar has agreed in order to address MagIC's concerns pertaining to Globalstar's installation, subject to regulatory approvals, of two 5.5 Meter antennas in the parking lot between the two companies. Materials Globalstar presented to MagIC on April 21 and May 12 and E-Mail Q&A on May 14 are attached in this memo as Attachments 1, 2, and 3, respectively.

Globalstar's responses to MagIC's three areas of concerns are summarized below:

(1) Loss of Parking Spaces

Globalstar and its contractors will ensure the antennas when constructed will not occupy MagIC's parking area. New architectural drawings are attached in this memo as Attachment 4. Landlord has expressed his consent in the August 25<sup>th</sup> meeting for the antenna structure to occupy half of the common area between the two companies on Globalstar side. At MagIC's request, Globalstar will work with its architect to evaluate the possibility to minimize the antenna structure footprint in the common area while leaving sufficient space for fire access.

(2) Interference to MagIC's existing line-of-sight microwave link between MagIC and Headways

MagIC has an existing line-of-sight microwave link operating at the unlicensed U-NII band of 5.25 to 5.35 GHz and 5.725 to 5.825 GHz under Section 15.403 of the FCC's rules. Globalstar's earth stations are licensed under Part 25 of the FCC's rules and operate at 5.091 to 5.25 GHz transmit and 6.875 to 7.055 GHz receive bands. Globalstar's frequencies are outside of the U-NII band. Both parties understand that Globalstar cannot be held responsible for a third party's transmitters operating in the U-NII band causing potential interference to MagIC's line-of-sight link. If interference is observed after Globalstar's antennas are turned on, Globalstar has agreed to work with MagIC in good faith cooperatively to determine if Globalstar's antennas are the source and take necessary steps to mitigate the interference. In addition, Globalstar has agreed to the following:

- i) The two proposed tracking antennas are for Test Lab use
- ii) The antennas will not operate lower than 10 degrees elevation angle

- iii) Globalstar will incorporate a masking profile to prevent the antennas from pointing directly to MagIC's line-of-sight antenna
- iv) MagIC can contact Globalstar's 24x7 Operations Center if interference from Globalstar antennas is observed. Globalstar will take actions to stop the antenna operations in a safe manner to aid the investigation

(3) Personnel Safety

Globalstar stated that its system will meet all Federal, State, and City regulatory requirements. Globalstar also presented data that its antenna transmitting power in the main beam is well below FCC maximum permissible exposure (MPE) level under Section 1.1307 of the FCC's rules. Furthermore, with the antenna operating at higher than 10 degrees elevation, the power level at the ground level will be more than 10,000 times lower than in the main beam (Attachments 1 and 2). MagIC has requested Globalstar to hire a third party company to conduct a health and safety assessment which Globalstar has not agreed to do because the emission levels do not remotely approach the limits specified by the FCC and the American National Standards Institute (ANSI).

For Globalstar

For MagIC Technologies

-----

-----

Name

Name

-----

-----

Date

Date

**Attachment 1**

**Globalstar Presentation Material to MagIC Technologies on April 21, 2010**

# Globalstar Milpitas Parking Lot Antennas

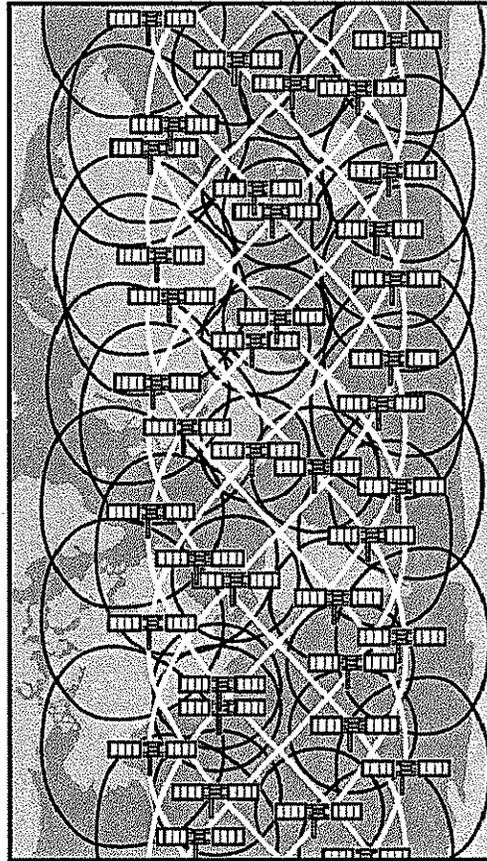
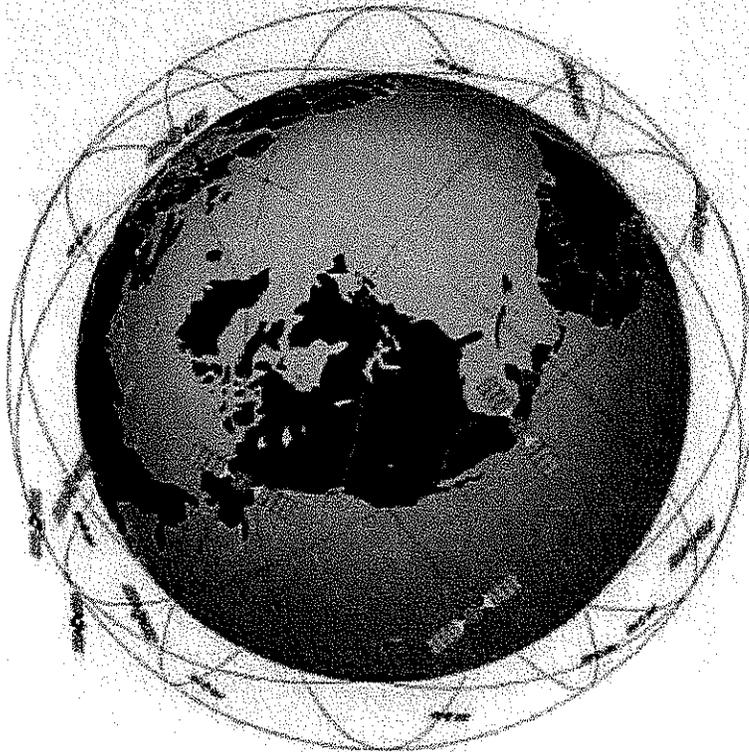
April 21, 2010



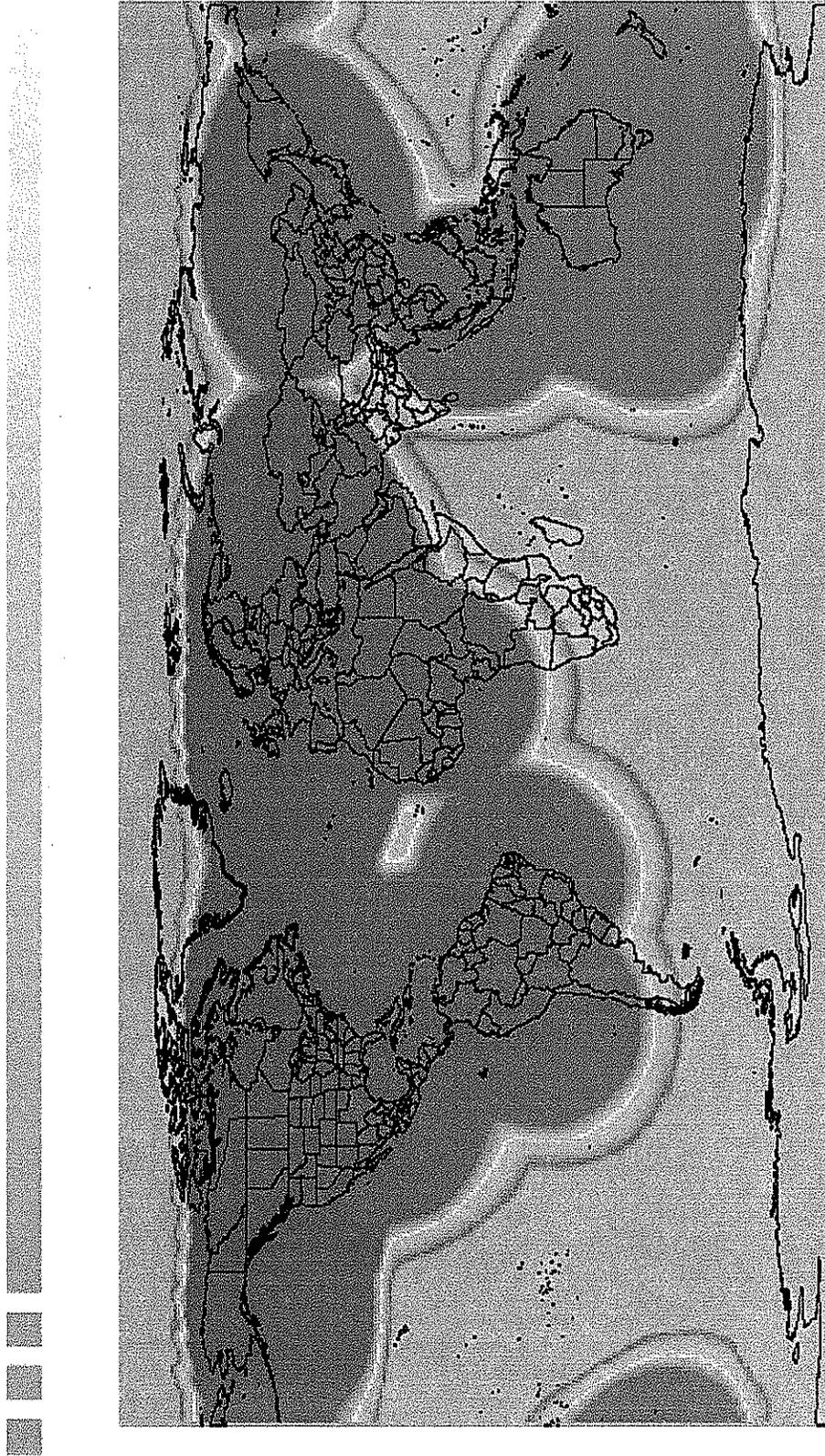
# Introduction

- What is Globalstar
  - Provides mobile satellite communications
  - Owns and operates a constellation of 48 low earth orbit (LEO) satellites
  - 28 earth stations (Gateways) worldwide
    - Seven in North America
      - Four in the USA and Puerto Rico
      - Two in Canada
      - One in Mexico
    - Seven in Central and South America
    - Three in Asia
  - 105 antennas installed globally
    - 16 in the US and Puerto Rico
    - Three in Europe (Excluding Russia)
    - Three in Russia
    - Two in Africa (one under construction)
    - Three in Australia

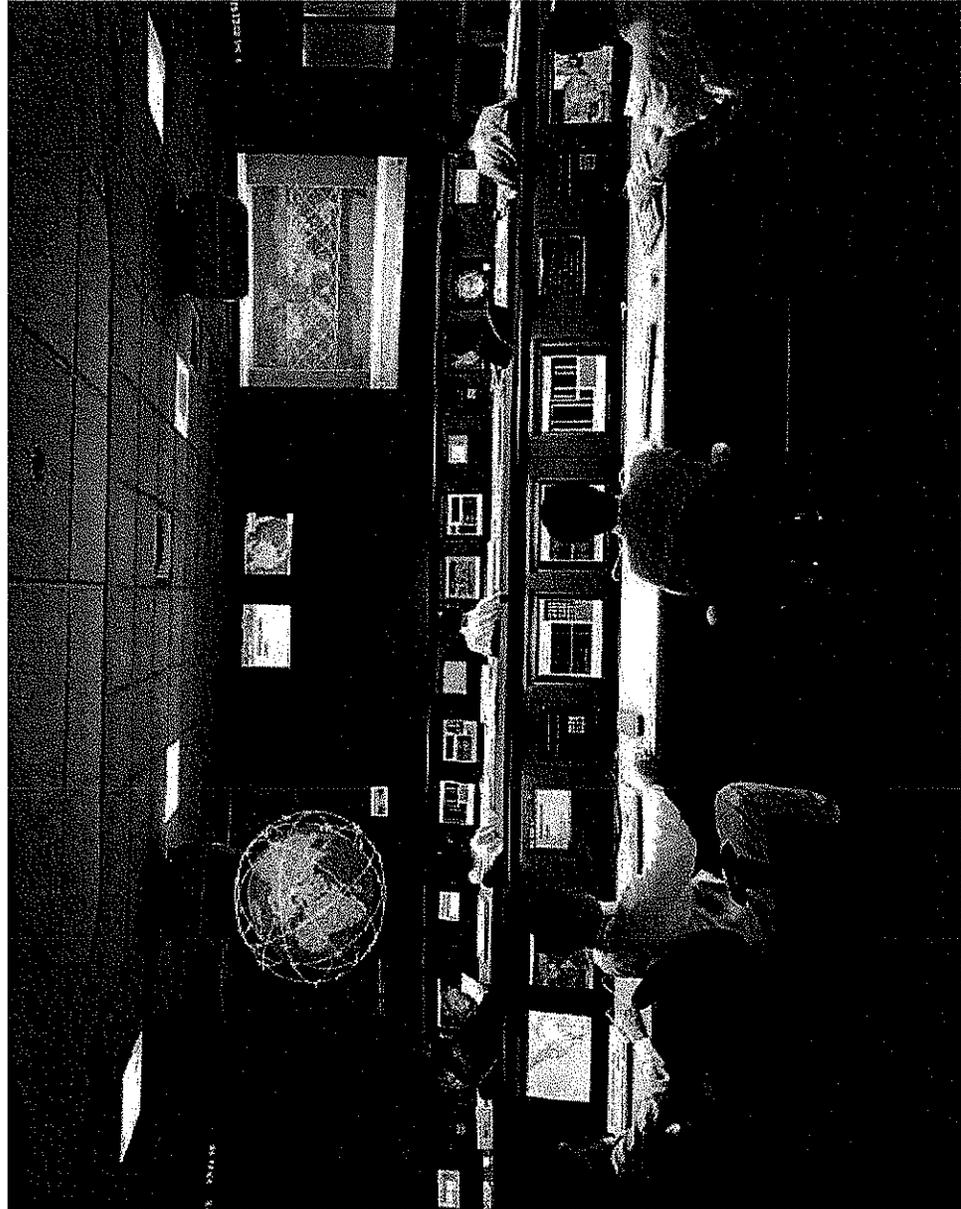
# LEO Constellation



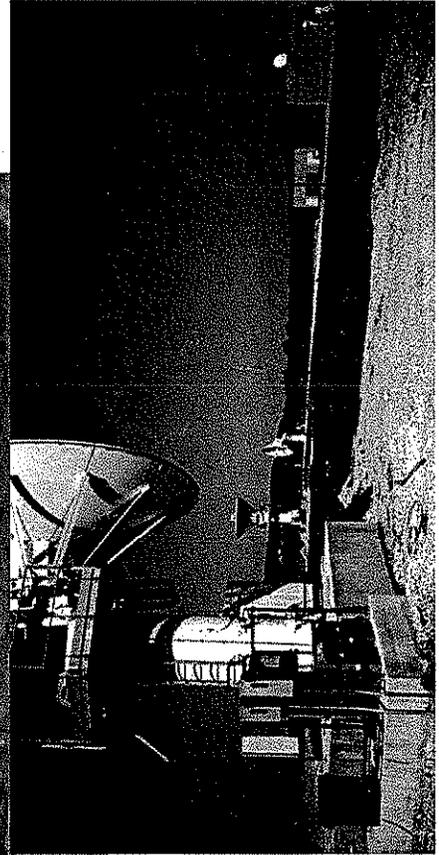
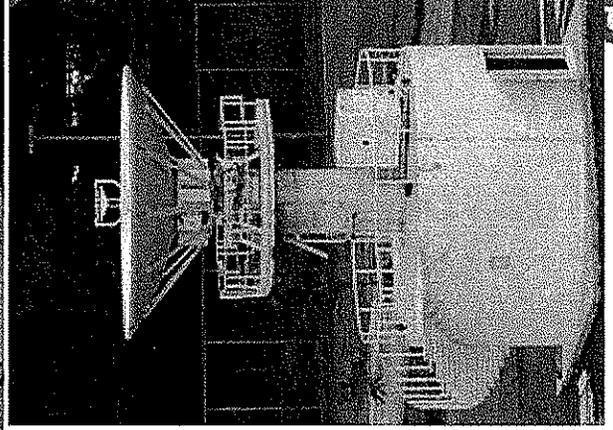
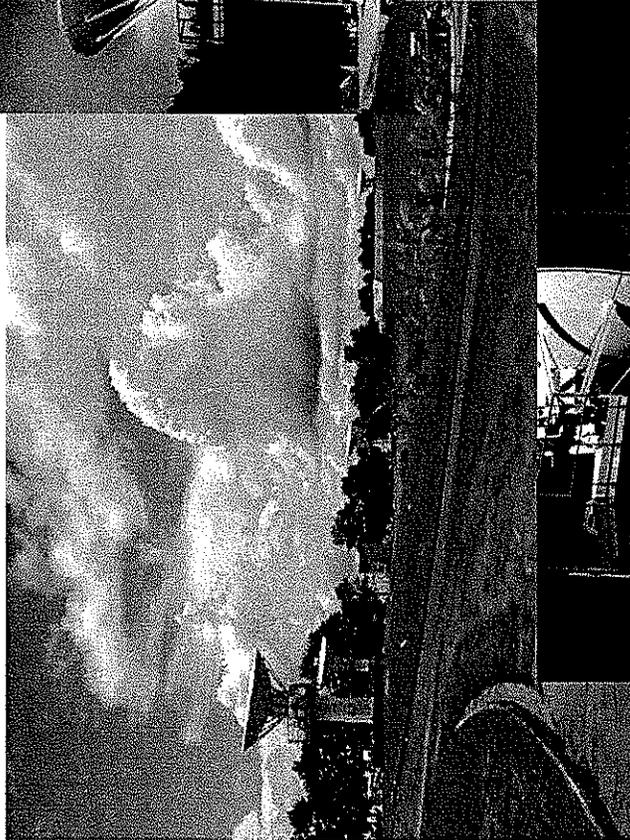
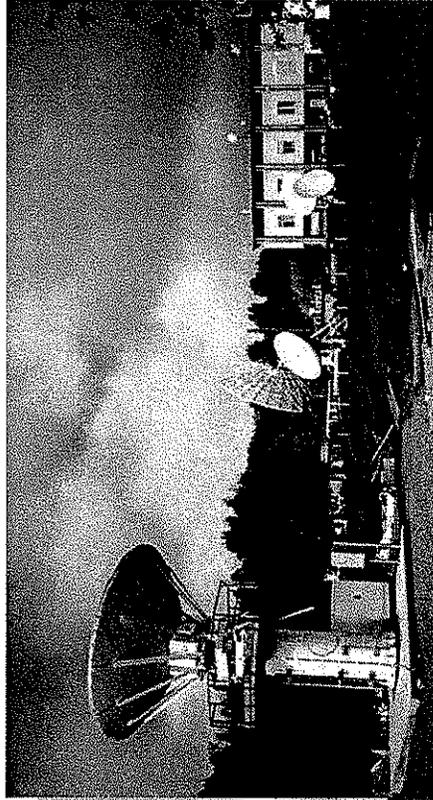
# Coverage



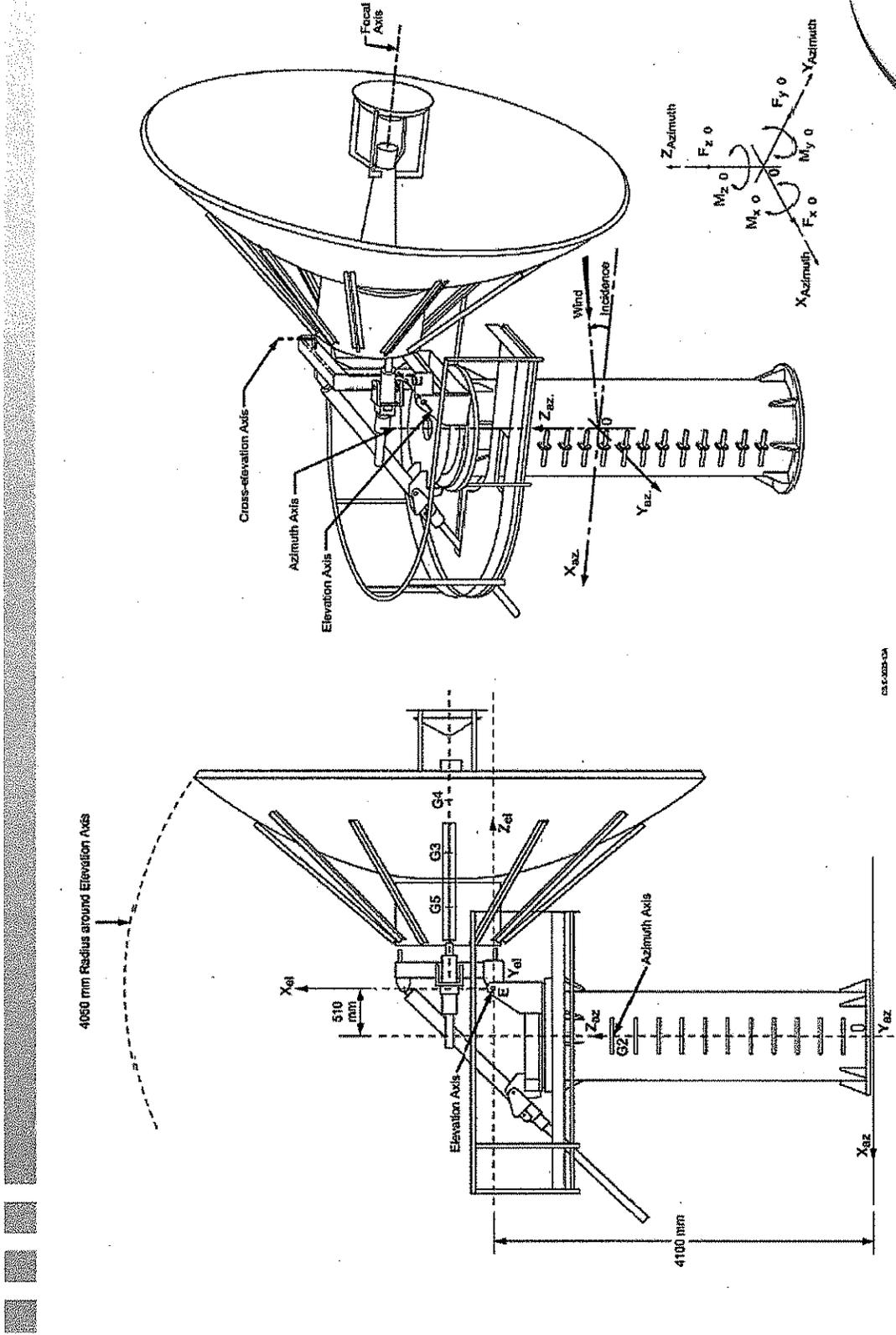
# Satellite and Ground Control Center



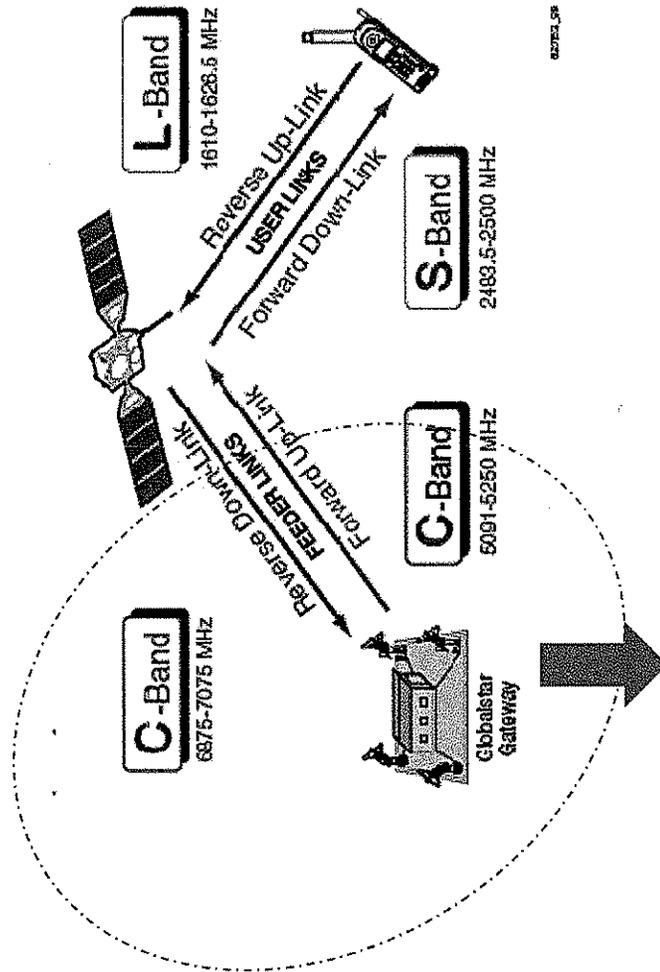
# Pictures of Gateways



# Antenna



# Frequencies



- 5.1 GHz Uplink to the Satellite
- 7 GHz Downlink from the Satellite

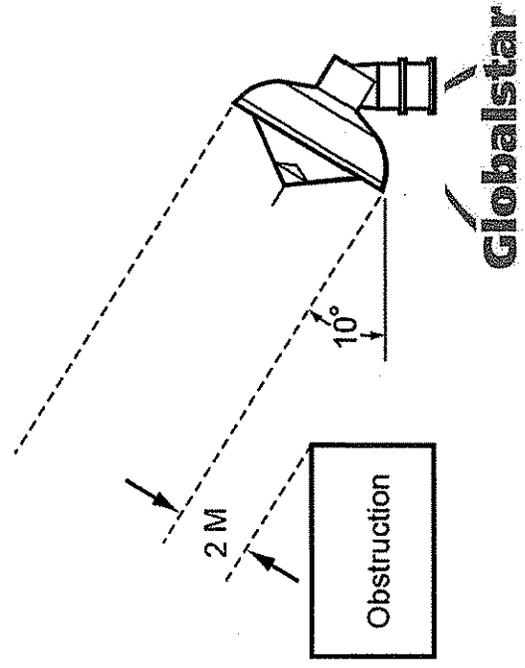


## Why Putting The Antennas In The Parking Lot?

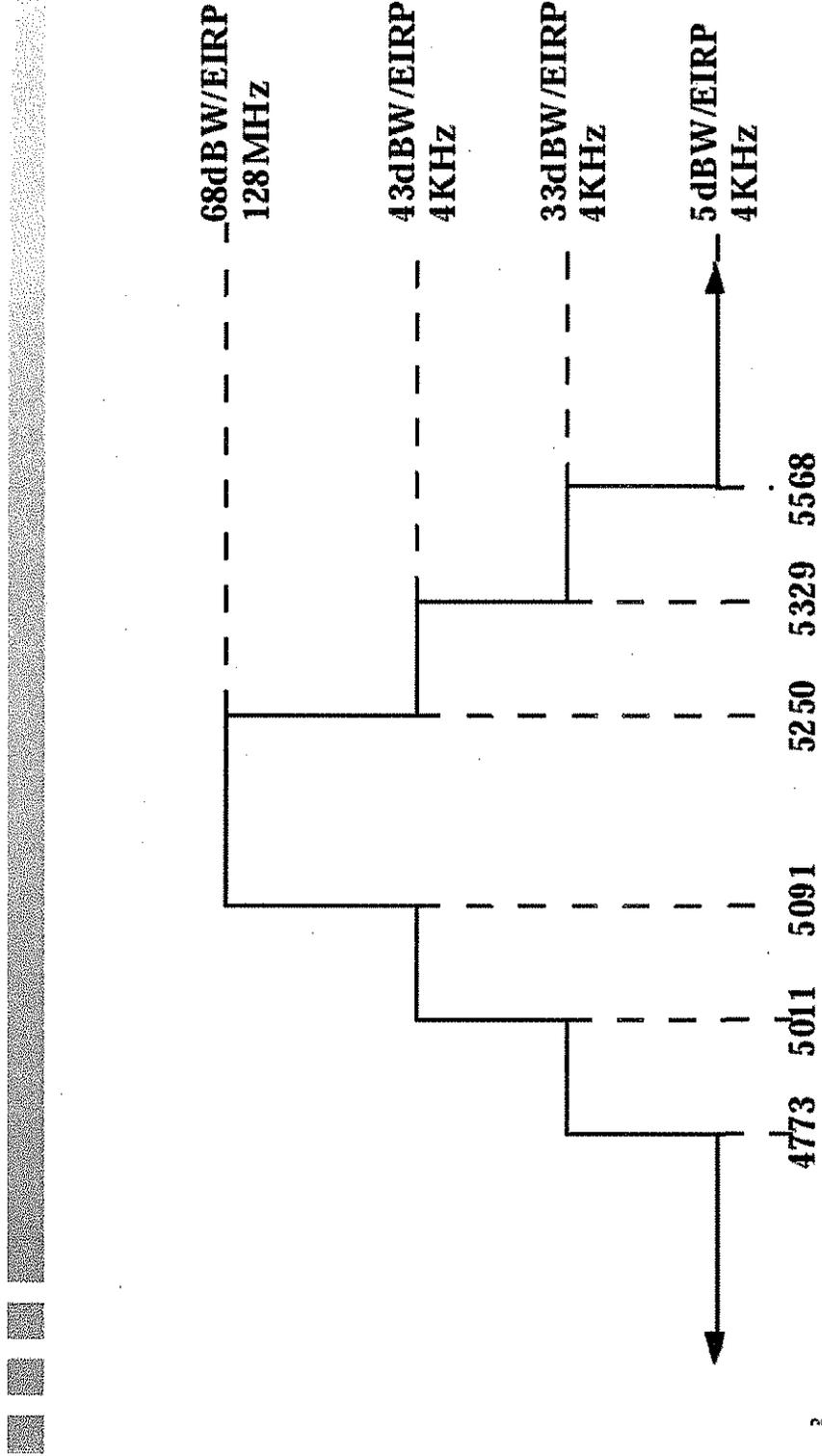
- Globalstar is building a second generation constellation and gateways
  - New Satellites and Ground Equipment
- The two antennas will provide over-the-air capabilities for our Milpitas Lab
- The antennas are used for testing, system validation, ... There will be no commercial traffic

# What Does This Mean to Magic? Interference

- No Interference to your line-of-sight communications to Headway
  - **Frequency Separation**
  - **Pointing:** The antennas will be tracking satellites starting at 10 degrees elevation angle with a least two meters clearance over the roof
  - **Masking Profile:** This is a Lab. We can prohibit the antenna from pointing at your antenna to Headway



# Out of Band Emission

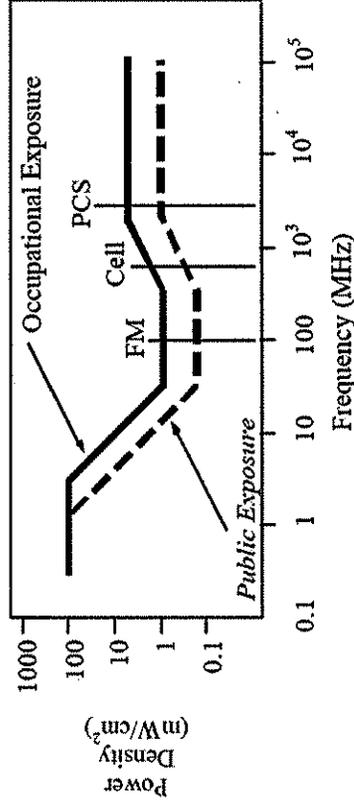


# What Does This Mean to Magic? (cont'd)

## RF Energy Safety

FCC limits set in Report No. 86 “Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields” published in 1986 by the Congressionally chartered National Council on Radiation Protection Measurements (“NCRP”) separate limits apply for occupational and public exposure conditions. The more recent standard, developed by the Institute of Electrical and Electronics Engineers and approved as American national Standard ANSI/IEEE C9.91-2006, “Safety Level with Respect to Human Exposure to Radio Frequency Electromagnetic Field, 3 KHz to 300 GHz” includes similar limits.

Frequency Applicable Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Equivalent Far-Field Power Density (mW/cm <sup>2</sup> )
0.3 – 1.34	614	1.63	100
1.34 – 3.0	614	2.19/f	100
3.0 – 30	1842/f	2.19/f	900/f <sup>2</sup>
30 – 300	61.4	0.163	1.0
300 – 1,500	3.54√f	√f/106	f/300
1,500 – 100,000	137	0.364	5.0



# Globalstar Antenna FCC Maximum Permissible Exposure (MPE) Compliance – Near Field

The maximum power density in the near-field is defined by the equation  $S_{nf} = 16 * \eta * P / (\pi * D^2)$ , where  $\eta$  is the antenna aperture efficiency of 70%, P is the maximum power at the antenna input flange of 110 watts, and D is the antenna diameter of 5.5 meters.

$S_{nf} = 16 * 0.70 * 110,000 \text{mW} / (\pi * (550 \text{cm})^2) = 1.3 \text{ mW/cm}^2$ ,  
which is below the maximum allowable exposure level of 5 mW/cm<sup>2</sup>.



# Globalstar Antenna FCC Maximum Permissible Exposure (MPE) Compliance – Far Field

The distance to the point where the far-field begins is defined by the equation  $R_{ff} = 0.6 * D^2 / \lambda$ , where D is the antenna diameter of 5.5 meters and  $\lambda$  is the transmit frequency wavelength of 5.8 centimeters.

$$R_{ff} = 0.6 * (5.5m)^2 / 0.06m = 315 \text{ m.}$$

The far-field on-axis power density is defined by the equation  $S_{ff} = P * G / (4 * \pi * R_{ff}^2)$ , where P is the maximum power at the antenna input flange of 110 watts, G is the antenna transmit gain of 47.6 dBi, and  $R_{ff}$  is the distance to the beginning of the far-field of 315 meters.

$$S_{ff} = 110,000mW * 104.76 / (4 * \pi * (31,500cm)^2) = 0.5 \text{ mW/cm}^2,$$

which is below the maximum allowable exposure level of 1 mW/cm<sup>2</sup>.

# Antenna Transmit Pattern

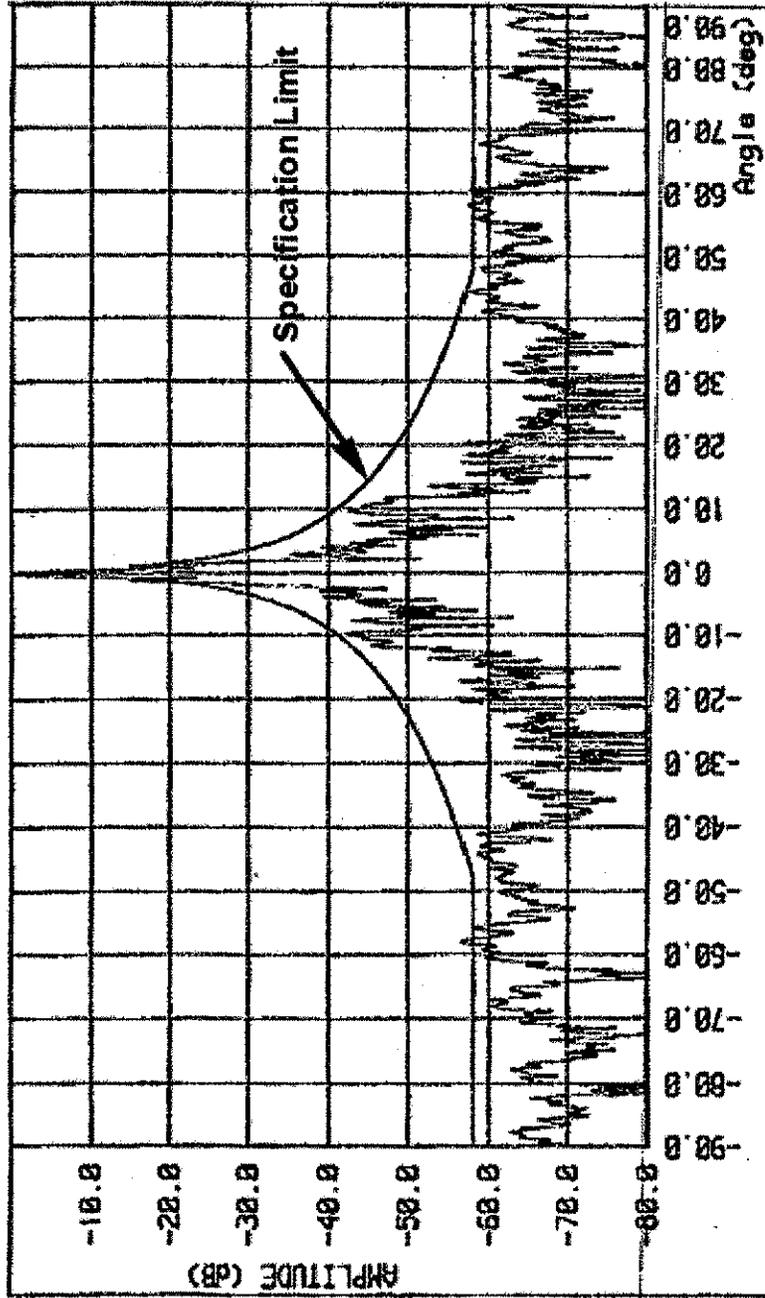


Figure 3-1 Transmit Antenna Pattern

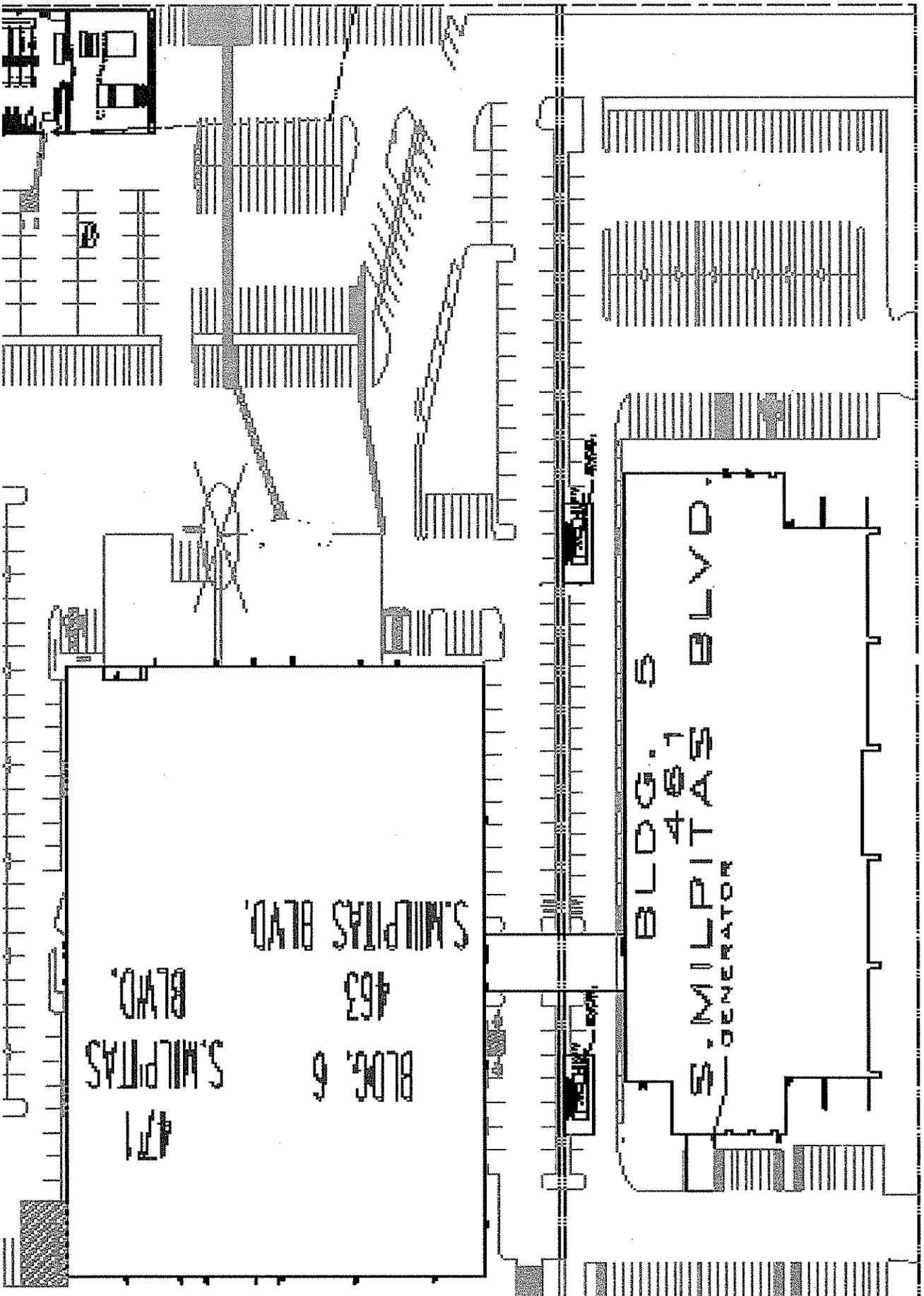


## What Does It Mean to Magic (cont'd)

- Globalstar antenna RF emission in its main beam is well within the FCC MPE limits
- Antennas will never point to ground level
- When antenna is pointing at its lowest angle at 10 degrees, energy at 0 degrees is 10,000 times less than the main beam

# Environmental Specifications

Temperature	- 40 to +85°C
Relative humidity	5 to 100%
Rain	≤ 30 cm/h
Altitude	≤ 10 000 m (air transportation)
Average wind speed	≤ 200 km/h
Gusts	≤ 250 km/h
Solar radiation	≤ 1.5 mW/mm <sup>2</sup>
Tropical conditions	According to ATSM G21
Salt atmosphere	≤ 41 ‰
Dust and sand	Particles ≤ 0.01 mm to 25 km/h
Snow and ice	Snow thickness ≤ 5 cm (2 inches)
Snowfall intensity	≤ 10 cm/h
Vibration and shock	Packaged for transportation by land, air or sea



NORTH

SOUTH MILPITAS BLVD.

## Summary

- Globalstar antennas will not cause interference to Magictech's radio link to Headway
- RF energy in the main beam is within FCC MPE limits (at ground level is 1/10,000 of main beam)
- No reduced parking spaces for Magictech
- We will work with Magictech to address any inconvenience this project may cause

**Attachment 2**

**Globalstar Presentation Material to MagIC Technologies on May 12, 2010**

**Globalstar/ MagicTech Parking  
Antenna Q&A Meeting**

May 12, 2010

1. Please explain again in more detail how you expect to blank off any signal that could interfere with our signal. Is this software blanking or mechanical motion limited? Will you be able to modify it later? And is this also tied into the clock?

The masking profile is a configurable parameter settable on the antenna control unit which limits mechanical motion. Furthermore, the software in the system would not allow transmission below the set limits. We will further restrict the motion in the antenna tracking commands.

**Globalstar/ MagicTech Parking  
Antenna Q&A Meeting**

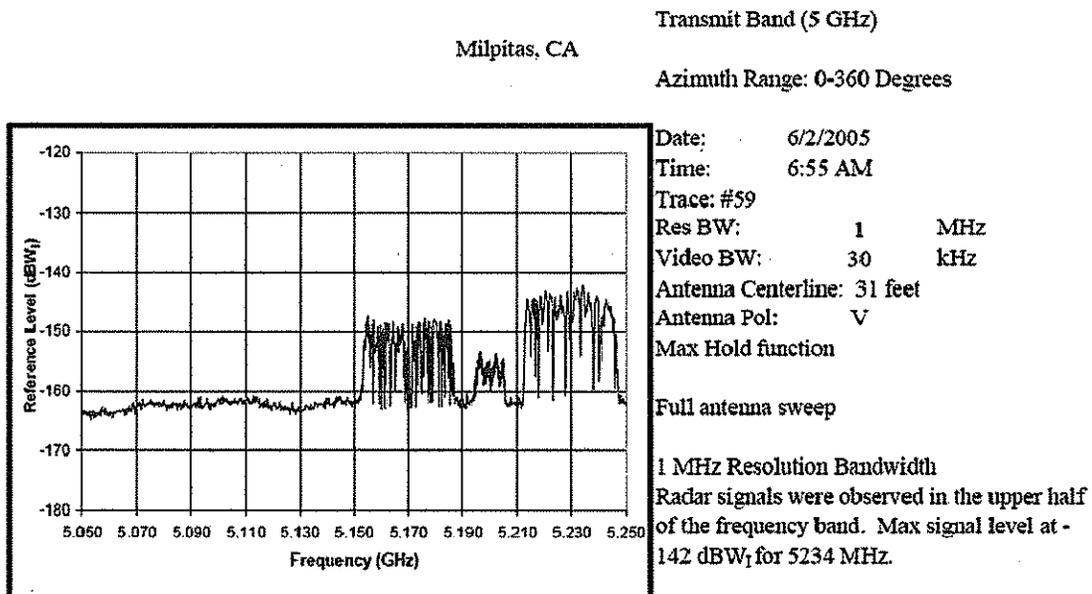
May 12, 2010

2. How can we agree upon a measurement standard to notify you that we are seeing a signal degradation or disruption? And if there is, what are your contingency plans to stop it and how fast can you respond? How will we notify you of our concerns or problems? What will you accept as valid measurement criteria? Can we agree upon a base line?

When the antenna is installed, we will have a third party to conduct an RF survey at your antenna location to document our transmit power at your frequency. We can adjust the masking profile until no interference on your system is observed and use that as the baseline. We will operate our system within the confines of the baseline.

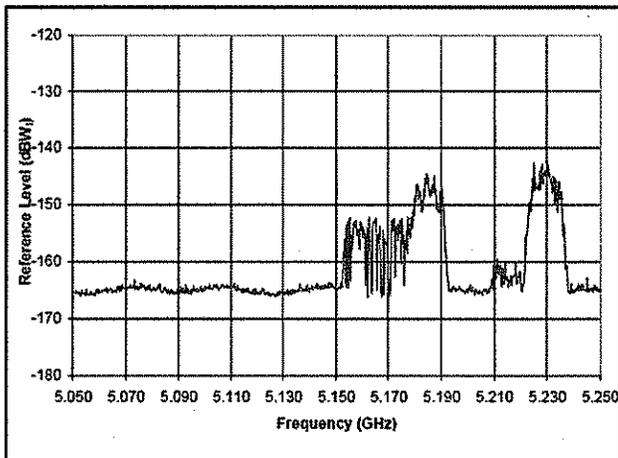
The unlicensed band that MagIC uses is very active in Milpitas. Globalstar cannot be held liable for interferences from other sources sharing your band.

Example of our spectrum analyzer traces from our 2005 RF survey



Globalstar/ MagicTech Parking  
Antenna Q&A Meeting

May 12, 2010

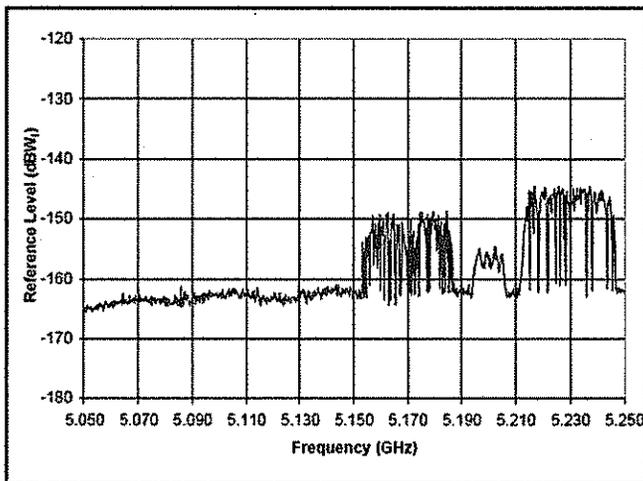


Date: 6/2/2005  
Time: 6:57 AM  
Trace: #60  
Res BW: 1 MHz  
Video BW: 30 kHz  
Antenna Centerline: 31 feet  
Antenna Pol: H  
Max Hold function  
Full antenna sweep  
1 MHz Resolution Bandwidth  
Radar signals were observed in the upper half of the frequency band. Max signal level at -142.5 dBW<sub>f</sub> for 5224 MHz.

Milpitas, CA

Transmit Band (5 GHz)

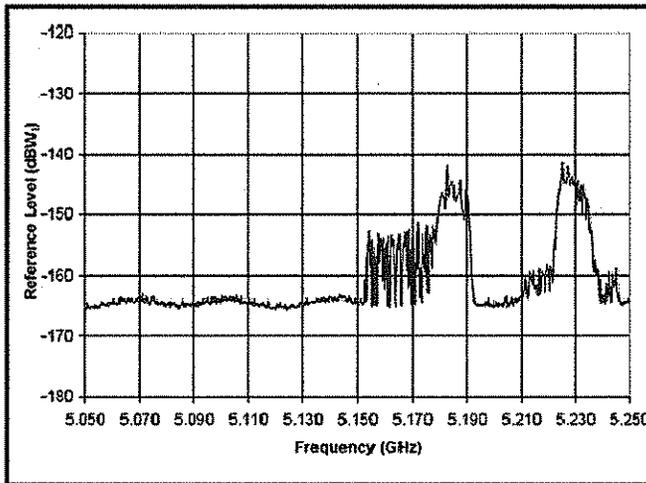
Azimuth Range: 0-360 Degrees



Date: 6/2/2005  
Time: 2:20 AM  
Trace: #41  
Res BW: 1 MHz  
Video BW: 30 kHz  
Antenna Centerline: 31 feet  
Antenna Pol: V  
Max Hold function  
Full antenna sweep  
1 MHz Resolution Bandwidth  
Radar signals were observed in the upper half of the frequency band. Max signal level at -144.5 dBW<sub>f</sub> for 5216 MHz.

Globalstar/ MagicTech Parking  
Antenna Q&A Meeting

May 12, 2010



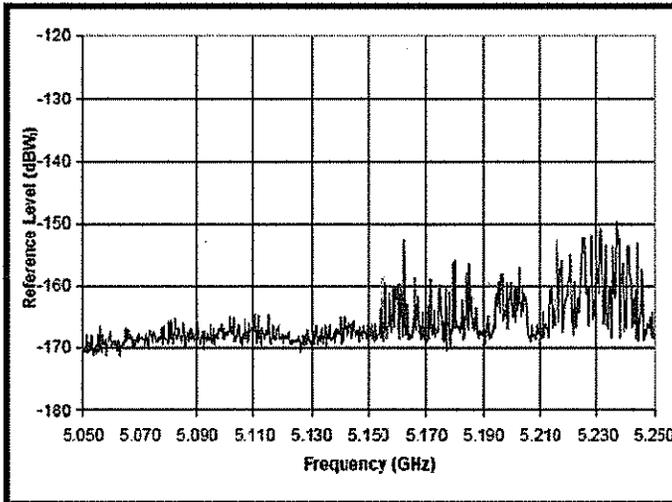
Date: 6/2/2005  
Time: 2:23 AM  
Trace: #42  
Res BW: 1 MHz  
Video BW: 30 kHz  
Antenna Centerline: 31 feet  
Antenna Pol: H  
Max Hold function

Full antenna sweep  
  
1 MHz Resolution Bandwidth  
Radar signals were observed in the upper half of the frequency band. Max signal level at -141 dBW<sub>I</sub> for 5225 MHz.

Milpitas, CA

Transmit Band (5 GHz)

Azimuth Range: 0-360 Degrees

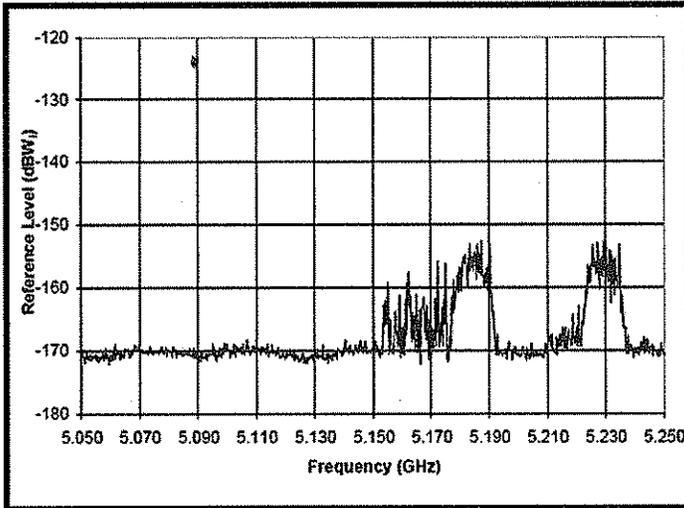


Date: 6/2/2005  
Time: 6:59 AM  
Trace: #62  
Res BW: 100 kHz  
Video BW: 30 kHz  
Antenna Centerline: 31 feet  
Antenna Pol: V  
Max Hold function

Full antenna sweep  
  
100 kHz Resolution Bandwidth  
Radar signals were observed in the upper half of the frequency band. Max signal level at -150 dBW<sub>I</sub> for 5236 MHz.

Globalstar/ MagicTech Parking  
Antenna Q&A Meeting

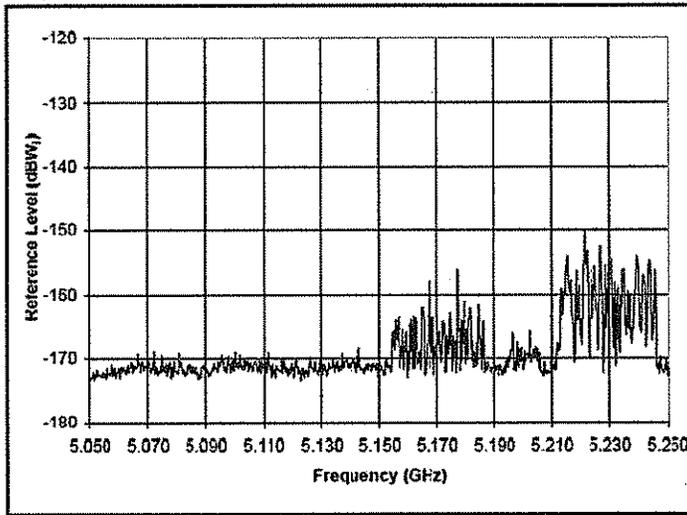
May 12, 2010



Date: 6/2/2005  
Time: 6:58 AM  
Trace: #61  
Res BW: 100 kHz  
Video BW: 30 kHz  
Antenna Centerline: 31 feet  
Antenna Pol: H  
Max Hold function  
Full antenna sweep  
100 kHz Resolution Bandwidth  
Radar signals were observed in the upper half of the frequency band. Max signal level at -152.5 dBW<sub>1</sub> for 5187 MHz.

Milpitas, CA

Transmit Band (5 GHz)  
Azimuth Range: 0-360 Degrees



Date: 6/2/2005  
Time: 2:27 AM  
Trace: #44  
Res BW: 100 kHz  
Video BW: 10 kHz  
Antenna Centerline: 31 feet  
Antenna Pol: V  
Max Hold function  
Full antenna sweep  
100 kHz Resolution Bandwidth  
Radar signals were observed in the upper half of the frequency band. Max signal level at -150 dBW<sub>1</sub> for 5221 MHz.

**Globalstar/ MagicTech Parking  
Antenna Q&A Meeting**

May 12, 2010

3. What contingencies do you have in worse case situation, like an oil rig explosion? How will you compensate us?

Question for the lawyers. Our antennas do not explode or sink....

**Globalstar/ MagicTech Parking  
Antenna Q&A Meeting**

May 12, 2010

4. If we have to change our data transmissions to a different method, will Globalstar accept the charges? To what amount?

As long as you do not change your pointing direction and all the regulatory rules are followed, we have no issues.

**Globalstar/ MagicTech Parking  
Antenna Q&A Meeting**

May 12, 2010

5. We are still not fully understanding the radiation effect/health risk of being in the vicinity of this thing. People are going to look at this monstrosity and every human ailment will be blamed on it. So how are we going to deal with this? The Scare/Fear Factor!

Applying the near field power density calculation (p. 13 of the April 21 presentation) on your system, your normal transmit power density is approximately 0.0012 mW/cm<sup>2</sup>.

$$\begin{aligned}
 \text{Snf} &= 16 * \eta * P / (\text{Surface Area}) \\
 &= 16 * 20\% * (-1\text{dBm}) / (18\text{''})^2 \\
 &= 16 * 20\% * 0.794 \text{ mw} / 2090 \text{ cm}^2 \\
 &= 0.0012 \text{ mw/cm}^2
 \end{aligned}$$

Globalstar Antenna Power Density at 10 degrees is 1.3 mw/cm<sup>2</sup>. With 40 dB down at 0 degrees (p.15 of the April 21 presentation), our power density is 0.00013 mw/cm<sup>2</sup> horizontally.

Our transit power density is one tenth of yours.

**Globalstar/ MagicTech Parking  
Antenna Q&A Meeting**

May 12, 2010

6. And as I pointed out to John, based upon all of the photos that we have seen of your other locations and the very noticeable fact that the antenna seems to be located a fair distance from humanity (like out in the "South Forty"), forces one to reach the conclusion that people should not get very close to them.....hence you tie up our parking spaces through fear.

We have a system in Singapore which is a City State. Some of our systems are in major population centers. As we pointed out last time when we met, the main reason for selecting sites at remote locations was because lower cost of land and lack of line-of-sight obstructions to the satellites for commercial services.

**Globalstar/ MagicTech Parking  
Antenna Q&A Meeting**

May 12, 2010

7. Explain again the frequency overlap issues and how it affects or doesn't affect data transmission.

I think you are referring to the effect due to beams crossing. Think about our TV stations or radio channels. Their transmissions are all over each other. As long as your receiver is not overwhelmed by the interference source(s), it should be able to separate your signal from the others. In our case, our antennas do not point at yours. There is no way that our system will saturate your receiver in your frequency band.

**Globalstar/ MagicTech Parking  
Antenna Q&A Meeting**

May 12, 2010

8. Where are the studies/reports by 3<sup>rd</sup> party groups that explain the restrictions, conditions, compliance, risk factors, safety/health issues, violations of these kinds of installations? And have you had to prepare environmental studies before in order to get approval? Are they accessible?

We follow all Federal, State, and City requirements. All of our established sites are FCC licensed which takes into consideration of all safety and health issues.

**Globalstar/ MagicTech Parking  
Antenna Q&A Meeting**

May 12, 2010



**UNITED STATES OF AMERICA  
FEDERAL COMMUNICATIONS COMMISSION  
RADIO STATION AUTHORIZATION**  
Current Authorization : FCC WEB Reproduction  
Unofficial Copy

Name: GCL LICENSEE LLC

Call Sign: E990335  
File Number: SES-RWL-20100422-00469

Authorization Type: Renewal of License  
Non Common Carrier Grant Date: 04/28/2010 Expiration Date: 06/23/2025

Nature of Service: Domestic Mobile-Satellite Service  
Mobile Satellite Service

Class of Station: Fixed Earth Stations

**A) Site Location(s)**

# Site ID	Address	Latitude	Longitude	Elevation (Meters)	NAD	Special Provisions (Refer to Section H)
1) LPMA-3	ROAD 303 INT. KM 12.1 CABO ROJO, Caba Rojo, PR, 00623	17° 58' 50.0" N	67° 8' 13.0" W	55.0	27	

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 license, the grantee is authorized to construct, use and operate the radio facilities described below for radio communications for the term beginning Wednesday, June 23, 2010 (3 AM Eastern Standard Time) and ending Monday, June 23, 2025 (3 AM Eastern Standard Time). The required date of completion of construction and commencement of operation is 00/00/0000 (3 AM Eastern Standard Time). Grantee must file with the Commission a certification upon completion of construction and commencement of operation.

**B) Particulars of Operations**

The General Provision 1010 applies to all receiving frequency bands.

The General Provision 1900 applies to all transmitting frequency bands.

For the text of these provisions, refer to Section H.

# Frequency	Polarization	Emission	Tx/Rx Mode	Max EIRP /Carrier	Max EIRP Density	Associated Antenna	Special Provisions (Refer to Section H)	Modulation/ Services
1) 6900.0000 - 7055.0000	L,R	1M23G7W	R			5.5M		FEEDER LINK & TELEMETRY - CDMA 1.23 MC/SEC/QPSK
2) 6900.0000 - 7055.0000	L,R	1M23G7W	R			5.5M		CDMA VOICE AND DATA
3) 6900.0000 - 7055.0000	L,R	NON	R			5.5M		UNMODULATED CW FOR TESTING
4) 6900.0000 - 7055.0000	L,R	1M23XXX	R			5.5M		WHITE NOISE MODULATED CARRIER FOR TESTING
5) 6900.0000 - 7055.0000	L,R	1M23G2W	R			5.5M		DIRECT-SEQUENCE CDMA FOR SINGLE-CARRIER AMSS
6) 5096.0000 - 5250.0000	L,R	1M23G7W	T	55.00	30.10	5.5M		CDMA VOICE AND DATA
7) 5096.0000 - 5250.0000	L,R	1M23XXX	T	59.00	34.10	5.5M		WHITE NOISE MODULATED CARRIER FOR TESTING
8) 5096.0000 - 5250.0000	L,R	1M23G2W	T	55.00	30.10	5.5M		DIRECT-SEQUENCE CDMA FOR SINGLE-CARRIER AMSS
9) 5096.0000 - 5250.0000	L,R	NON	T	59.00	59.00	5.5M		UNMODULATED CW FOR TESTING; MAXIMUM EIRP DENSITY PER CARRIER IS 59.0 dBW IN ANY BANDWIDTH
10) 5091.0000 - 5250.0000	L,R	1M23G7W	T	55.00	30.10	5.5M		FEEDER LINK & TELEMETRY - CDMA 1.23 MC/SEC/QPSK

**Globalstar/ MagicTech Parking  
Antenna Q&A Meeting**

May 12, 2010



**UNITED STATES OF AMERICA  
FEDERAL COMMUNICATIONS COMMISSION  
RADIO STATION AUTHORIZATION**  
*Current Authorization : FCC WEB Reproduction*  
Unofficial Copy

Name: GCL LICENSEE LLC

Call Sign: E990335  
File Number: SES-RWL-20100422-00469

Authorization Type: Renewal of License  
Non Common Carrier Grant Date: 04/28/2010 Expiration Date: 06/23/2025

**C) Frequency Coordination**

#	Frequency Limits(MHz)	Satellite Arc (Deg. Long.) East West Limit Limit	Elevation (Degrees)		Azimuth (Degrees)		Max EIRP Density toward Horizon (dBW/4kHz)	Associated Antenna(s)
			East West Limit Limit	East West Limit Limit	East West Limit Limit			
1)	5091.0000 - 5250.0000	NGSO	5.0 - 5.0	0.0 - 360.0			25.9	5.5M
2)	5875.0000 - 7055.0000	NGSO	5.0 - 5.0		- 360.0			5.5M
3)	5091.0000 - 5250.0000	NGSO	10.0 - 10.0	0.0 - 360.0			-10.5	5.5M
4)	6900.0000 - 7055.0000	NGSO	10.0 - 10.0	0.0 - 360.0				5.5M

**D) Point of Communications**

The following stations located in the Satellite orbits consistent with Sections B and C of this Entry:

- 1) LPMA-3 to GLOBALSTAR "Big LEO" satellites of the Mobile Satellite Service system (U.S.-licensed)

**E) Antenna Facilities**

Site ID	Antenna ID	Diameter Units (Meters)	Manufacturer	Model Number	Site Elevation	Max Antenna Height (Meters)	Special Provisions (Refer to Section H)
LPMA-3	5.5M	1	5.5 Alcatel	9775	55.0	8.15 AGL/ 63.2 AMSL	

Max Gain(s): 47.6 dBi @ 5.1500 GHz 50.2 dBi @ 6.9750 GHz

Maximum total input power at antenna flange (Watts) = 110.0

Maximum aggregate output EIRP for all carriers (dBW) 68.0

**F) Remote Control**

LPMA-3 461 S. MILPITAS BLVD.  
MILPITAS, SANTA CLARA, CA, 95035  
408-933-4600 Call Sign:

**G) Antenna Structure marking and lighting requirements:**

None unless otherwise specified under Special and General Provisions

**H) Special and General Provisions**

- A) This RADIO STATION AUTHORIZATION is granted subject to the following special provisions and general conditions:

1010	Applicable to all receiving frequency bands. Emission designator indicates the maximum bandwidth of received signal at associated station(s). Maximum EIRP and maximum EIRP density are not applicable to receive operations.
1900	Applicable to all transmitting frequency bands. Authority is granted to transmit any number of RF carriers with the specified parameters on any discrete frequencies within associated 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.

**Globalstar/ MagicTech Parking  
Antenna Q&A Meeting**

May 12, 2010



**UNITED STATES OF AMERICA  
FEDERAL COMMUNICATIONS COMMISSION  
RADIO STATION AUTHORIZATION**  
*Current Authorization : FCC WEB Reproduction*  
Unofficial Copy

Name: GCL LICENSEE LLC

Call Sign: E990335  
File Number: SES-RWL-20100422-00469

Authorization Type: Renewal of License  
Non Common Carrier Grant Date: 04/28/2010 Expiration Date: 06/23/2025

**H) Special and General Provisions**

- 2916 Transmitter(s) must be turned off during antenna maintenance to ensure compliance with the FCC-specified safety guidelines for human exposure to radiofrequency radiation in the region between the antenna 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.
- 3219 All existing transmitting facilities, operations and devices regulated by the Commission must be in compliance with the Commission's radiofrequency (RF) exposure guidelines, pursuant to Section 1.1307(b)(1) through (b)(3) of the Commission's rules, or if not in compliance, file an Environmental Assessment (EA) as specified in Section 1.1311. See 47 CFR 1.1307 (b) (5).
- 3424 The authority granted here is subject to the outcome of the Commission's rulemaking proceeding in OET Docket No. 98-142, concerning domestic allocations in the 5/7 GHz frequency bands. No harmful interference shall be caused by the operations of this station to other lawfully operated radio stations and interference protection from authorized stations shall not be claimed. Operations shall terminate immediately upon notification of harmful interference.
- 3428 This authorization is not to be construed as including any uplink or downlink authority in other countries.
- 3848 The authorized frequency band(s) has (have) been cleared with the National Telecommunications and Information Administration.
- 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 EIRP 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 of 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 communications.
- 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 or non-geostationary orbit for the emissions designated in Section B of this license.
- 5015 Upon completion of construction, each licensee must file with the Commission a certification including the following information: name of the licensee, file number of the application, call sign of the antenna, date of the license and 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.
- 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 Commission's rules 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.
- 5019 This authorization is not to be construed as permitting the provision of any service between earth station locations within the United States.
- 5216 All operations shall be on a non-common carrier basis.

**Globalstar/ MagicTech Parking  
Antenna Q&A Meeting**

May 12, 2010

9. You have repeatably stated that this is an engineering site only. A data collection site and not one of your high volume communications installations. What assurance do we have that if some of your other installations were to fail and go off line that this installation won't be pressed into production service and if that were to happen, how would that compromise all of the promises that have been made here?

Our engineering test bed does not have the necessary infrastructure for commercial service. We can put it in writing for you that we will not convert our test bed into a commercial site.

**Globalstar/ MagicTech Parking  
Antenna Q&A Meeting**

May 12, 2010

10. I believe we need a written agreement from Globalstar saying their satellite implementation will not impact or interference network connection between MagIC & Headway (with action items on what they will do), otherwise Globalstar will need to provide an alternative network connection with same bandwidth (100Mbps with T1) between MagIC & Headway. This should also cover the construction period for the installation of the satellite.

We will put in writing with the baseline configuration and other supporting data that our antennas will not impact or interfere with MagIC's link to Headway.

**Attachment 3**

**Globalstar E-Mail Q&A To MagIC Technologies on May 14, 2010**

**Wen Doong - Re: FW: Globalstar Presentation Charts to Magic on April 21**

**From:** Wen Doong  
**To:** Bill Gardner; John Celton; Mike Case  
**Date:** 5/14/2010 4:58 PM  
**Subject:** Re: FW: Globalstar Presentation Charts to Magic on April 21  
**CC:** Nabil Arnaout  
**Attachments:** May 12 Meeting.pdf

Bill:

It was a good meeting. We appreciated for your time and support working with us. Please see my replies inserted below.

Have a great weekend.

Regards,

Wen

>>>

**From:** "Bill Gardner" <bill.gardner@magictech.com>  
**To:** "Wen Doong" <Wen.Doong@globalstar.com>, <mike.case@globalstar.com>, <john.celton@globalstar.com>  
**CC:** "Nabil Arnaout" <Nabil.Arnaout@magictech.com>  
**Date:** 5/13/2010 9:18 PM  
**Subject:** FW: Globalstar Presentation Charts to Magic on April 21

Hello Wen.

I appreciate this presentation that you gave us on April 21 and after yesterday's follow-up meeting, I was able to digest this a little more. And I have some questions:

- On page 2 you state that Globalstar has 28 earth stations and 105 antennas. Thus some earth stations have 4 antenna and some have 3. Why do you need 4 and how do you sometimes get by on 3?

*Wen: Number of antennas at a specific site is based on geographical locations. Since the satellites orbit at 52 degrees incline, there are fewer visible satellites for high latitude and equatorial locations. For sites at those locations, we normally put three antennas. Anything less than that would not be able to offer commercial service.*

- On page 10 you show, and you have stated many times, that you don't go below 10degrees above the horizon. Why 10? Is that something that you just do or is it because in this location here in Milpitas here in our back yard, that you have calculated that that is the angle that you need to use to clear obstacles? Or does going lower impede your signal through the atmosphere? In locations where you are way out in the boonies can you actually go below 10 degrees? Or is this FCC restriction? In other words where does this magic number 10 come from? Why not 12?

*Wen: If we go lower than 10 degrees, signal will need to travel longer distance to and from the satellite. The path loss will be too great resulting in signal loss to and from the satellites. For locations in the boonies, we do not go lower than 10 degrees for the same reason.*

- Also on the same page you indicate that you hold yourself to clear obstructions by 2 meters. Do I conclude that you instruct your dish to satisfy both minimum criteria at the same time (the 10 degrees and the 2 meters)? In other words you will keep raising the angle of the dish until you have cleared the obstacle by at least 2 meters? Where does this number 2 meters come from? Is it FCC requirement? Do you do it because of signal interference? Do you do it just to make sure that you have allowed enough buffer?

*Wen: Yes, we need to satisfy both - 10 degrees elevation angle AND 2 meters above obstruction. There is no FCC requirements on this. The number is based on our operating experience and to avoid any potential blockage (a buffer).*

- I don't understand page 11 at all. Can you explain that again?

*Wen: All radio transmitters and receivers are designed to work in a certain frequency band. The RF components are tuned to operate at the designed frequency and there are built-in RF filters to eliminate the out-of-band energy. The filters have slopes. What is shown on page 11 is exactly that. Our signal at 5.25 MHz is 25 dB lower than the center of the designed frequency band.*

- Page 13....
  - where does that constant "16" come from?

*Wen: I do not know what the number 16 is. When I gave the presentation, I said the calculation was done by people who are a lot smarter than I am. The equation is from our FCC filing. I have been treating it as a constant.*

- The "n" antenna aperture efficiency of 70%..... does that number come from the efficiency of the design and materials of your antenna?

*Wen: Yes. That is our antenna efficiency.*

- And the 110W.....is that a design of your antenna? How do you control that? Is that an FCC restriction on your design? If your signal can't successfully reach the satellite, would you shove more power into it and increase it to more than 110W?

*Wen: 110 W is the maximum power at the antenna flange. We do not go beyond that for two reasons: FCC limits our uplink power to the satellites and higher power will saturate our satellite receiver causing it to go into self-protection safe mode or potentially damage it. We would not shove more power into it to cause us problems with FCC and damaging our satellites.*

- And finally in the formula, when I was in school, the area of circle was  $\pi r^2$  not  $\pi d^2$  (read that  $\pi$  times radius squared not  $\pi$  times diameter squared) So why 'D'?

*Wen: Our antenna is a parabolic dish. The surface area calculation is for a sphere not a circle. I think what they did was because the Power Density is equal to  $= P_t / 4\pi R^2$  where  $P_t$  is the power from the antenna and  $4\pi R^2$  is the surface area of the sphere. They took the  $4R^2$  into  $D^2$ . While checking the formulas, I realized that when I copied and pasted the equations into the April 21 presentation package, on page 14 the superscript  $10^{4.76}$  became 104.76. Please make a correction of it. The  $0.5 \text{ mW/cm}^2$  number is the same.*

- I see from this formula how you got the  $0.0013 \text{ W/cm}^2$ , but I missed how you came up with ours to be  $0.012 \text{ W/cm}^2$ . Can you show that again?

*Wen: Please see my reply to your question 5 in the attached pdf file.*

- And finally, nothing to do with interference or health, but more so that I understand this

technology, you indicated today that your signal disperses at 0.5 degrees and since the satellite is 900 miles up, am I correct that the beam has dispersed from your 18 foot dish down here to a 90 mile diameter beam up at the satellite?

*Wen: Have we turned you into an RF engineer and mathematician [smile ;-)] ? The disbursement of 0.5 degree is called 3-dB beam width. I just looked it up, it is 0.7 degrees for the transmit band. 3 dB is half power. The power level at the beam center is the highest and it starts rolling off. At 0.7 degrees from the center, the power level is halved. Our antenna pointing accuracy at the satellites 900 miles up is within meters.*

Tks

I look forward to some of this information when you get a chance.

Can I get a copy of the presentation that gave us yesterday? That might help me understand this also.

*(Wen: Please see attached. I added header and date on every page)*

PS ..... I have been going through the other links (FCC) that you sent me today.

*(Wen: One of these days, when we both get a little time, maybe you can show me stuff that you guys do. I would love to learn new things. I think this is the beginning of a great relationship between our two companies.)*

Talk to you soon.

bill

---

**From:** Wen Doong [mailto:Wen.Doong@globalstar.com]  
**Sent:** Monday, May 03, 2010 1:48 PM  
**To:** Bill Gardner  
**Cc:** John Celton; Mike Case  
**Subject:** Globalstar Presentation Charts to Magic on April 21

Bill:

Please see attached. We look forward to meeting with you on May 12 at 1:30 p.m. to answer any additional questions that you may have and to review John Celton's new drawings.

Regards,

Wen

**Attachment 4**

**Globalstar Revised Architectural Drawings Provided to MagIC Technologies on August 27, 2010**

**DRAWING INDEX:**

ARCHITECTURAL	DATE	BY
1. A01 COVER SHEET	11/11/09	MM
2. A02 SITE PLAN	11/11/09	MM
3. A03 PROPOSED PARTIAL SITE PLAN	11/11/09	MM
4. A10 PLAN, SECTIONS AND ELEVATIONS	11/11/09	MM

**BUILDING DATA:**

OCCUPANCY: B  
 TYPE OF CONSTRUCTION: TYPE V-B  
 SPRINKLERED: YES  
 STORIES: 50,370 SF  
 BUILDING AREA: 086-42-016  
 ZONE: M2

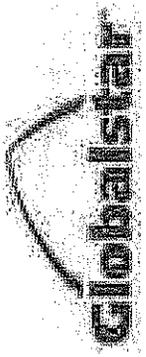
PROJECT AREA: 1750 SF

BASIC WIND SPEED:  
 80 MPH  
 EXPOSURE B

**TO BE UPDATED**  
 (C.B.C. 901.4 ASK)  
 DESIGN CATEGORY 0  
 OCCUPANCY AS PER C.E.C. SECTION 307.4  
 CATEGORY I  
 SEISMIC CATEGORY 1  
 IMPORTANCE FACTOR 1.0  
 S<sub>w</sub>=1.0, S<sub>w</sub>-0.0

**PROJECT SCOPE:**

INSTALL MEAN EQUIPMENT AND RELATED COMPONENTS IN EXISTING CLEAN ROOM FAB.  
 HAZARDOUS MATERIALS:  
 PROJECT AREA CONTAINS SEVERAL HAZARDOUS MATERIALS. AREA IS NOT CLASSIFIED AS GROUP  
 H-OCCUPANCY AS PER C.E.C. SECTION 307.4 CATEGORY I. THE TOTAL HAZARDOUS  
 MATERIALS ARE AS FOLLOWS:  
 ALLOWABLE QUANTITIES ARE AS FOLLOWS:  
 DEFERRED SUBMITTALS:  
 ELECTRICAL



**461 S. MILPITAS BLVD.  
 MILPITAS, CALIFORNIA 95035**

**PLANNING PACKAGE  
 PROPOSED LAYOUT FOR NEW  
 ANTENNA INSTALLATION**

**MM/DD/YY**

**SITE ANALYSIS:**

494.80  
 ALLOWABLE BUILDING AREA: XX  
 BALDING ZONE: M  
 LANGRISHED AREA: XX  
 EXISTING FLOOR AREA:  
 BLDG. 5 59,270 S.F.  
 BLDG. 6 101,200 S.F.  
 TOTAL BUILDING AREA: 160,470 S.F.  
 EXISTING FIB: XX  
 ALLOWABLE FIB: XX  
 PROPOSED FIB: XX  
 PROPOSED FIB AREA: 1750 S.F.  
 ALLOWABLE FIB AREA: XX  
 PROPOSED FIB AREA: 1750 S.F.  
 TREES REMOVED: 0  
 TREES ADDED: 0  
 GRADE COVER REMOVED: 272 SF  
 GRADE COVER ADDED: XX

**PARKING ANALYSIS:**

REQUIRED PARKING PER CITY OF MILPITAS:  
 OFFICE SPACE WITHIN AN INDUSTRIAL BLDG. = 1 PER 350 S.F.

BLDG. 5 ----- 59,270 S.F.  
 BLDG. 6 ----- 101,200 S.F.  
 TOTAL AREA ----- 160,470 S.F.  
 PARKING REQUIRED: 160,470 S.F. / 350 = 473 SPACES

EXISTING REGULAR PARKING SPACES: 623 SPACES  
 EXISTING ACCESSIBLE PARKING STALLS: 10 SPACES  
 TOTAL PARKING SPACES: 633 SPACES

TOTAL ACCESSIBLE PARKING REQUIRED:  
 (2007 C.B.C. TABLE 11B-6) 13 SPACES  
 TOTAL VAN ACCESSIBLE PARKING REQUIRED:  
 (2007 C.B.C. SECTION 11296.3.2) (ONE IN EVERY EIGHT) 1 SPACE

**BUILDING CODES:**

- CALIFORNIA BUILDING CODE (CBC) 2007 EDITION
  - CALIFORNIA TITLE 24 ENERGY EFFICIENCY STANDARDS 2008 EDITION
  - CALIFORNIA MECHANICAL CODE (CMC) 2007 EDITION
  - CALIFORNIA PLUMBING CODE (CPC) 2007 EDITION
  - CALIFORNIA ELECTRICAL CODE (CEC) 2005 EDITION
  - NATIONAL ELECTRIC CODE (NEC) 2005 EDITION
  - 2008 MILPITAS MUNICIPAL CODE
- ALONG WITH ANY OTHER APPLICABLE LOCAL AND STATE LAWS AND REGULATIONS.

**Gordon Pili**  
 ARCHITECTURE ENGINEERING CONSULTANTS  
 1400 S. GARDEN ST. #100  
 MILPITAS, CA 95035  
 (408) 938-1100  
 www.gordpili.com



**Globalstar**  
 PLANNING PACKAGE  
 PROPOSED LAYOUT FOR  
 NEW ANTENNA INSTALLATION  
 461 S. MILPITAS BLD.  
 MILPITAS, CA 95035

REV	DESCRIPTION	DATE (MM/DD/YY)
A	ISSUE FOR PLANNING	11/11/09

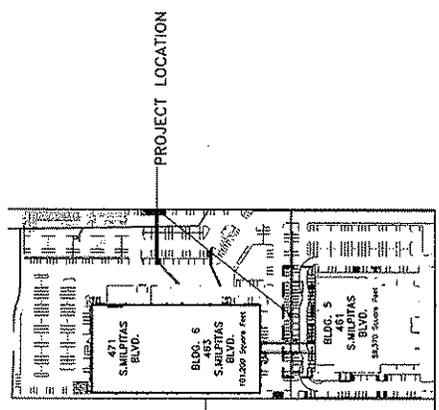
DATE	11/11/09
SCALE	AS SHOWN
SHEET	02

**A00C**  
 INTERNATIONAL

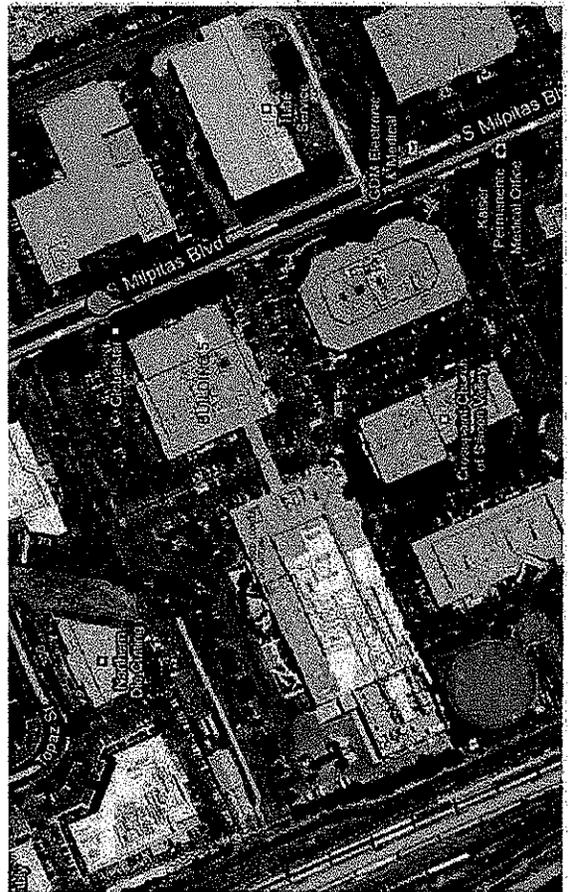
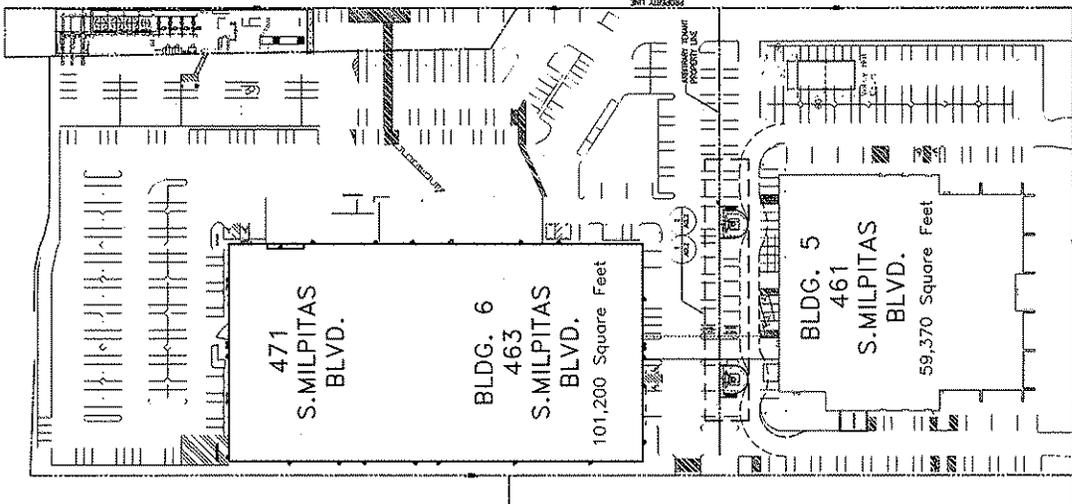


PROJECT LOCATION  
 461 S. MILPITAS BLVD.  
 MILPITAS, CA 95035

VICINITY & LOCATION:

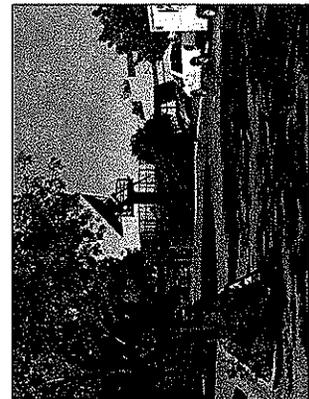


SITE PLAN:  
 SOUTHWEST CORNER



**1 SITE PLAN**  
 A01 SCALE: 1"=50'

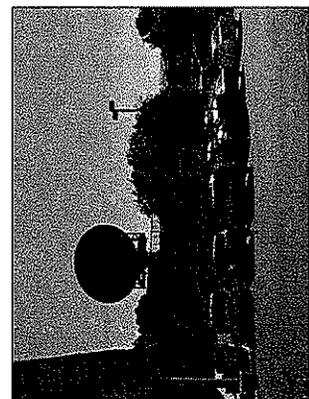




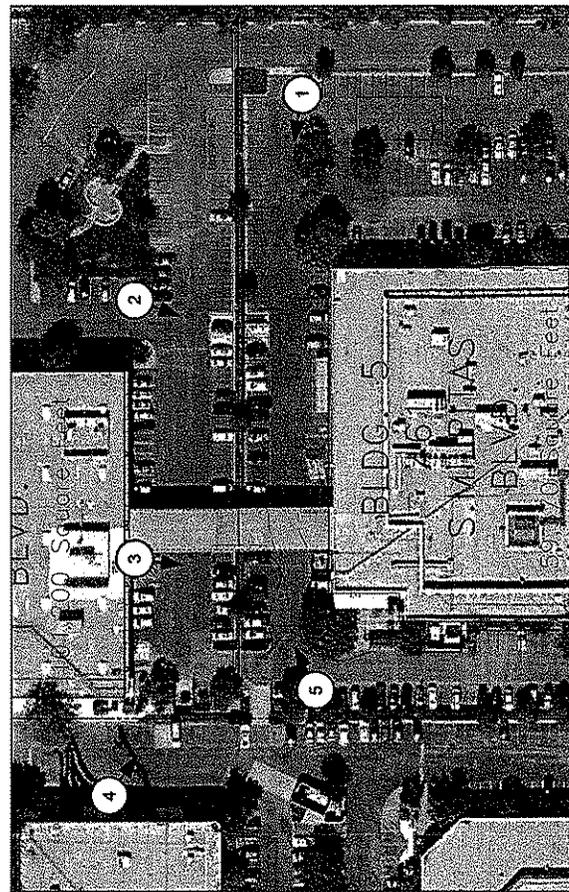
1 A0.3 SCALE: NONE



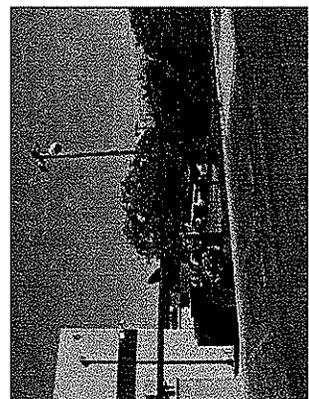
2 A0.3 SCALE: NONE



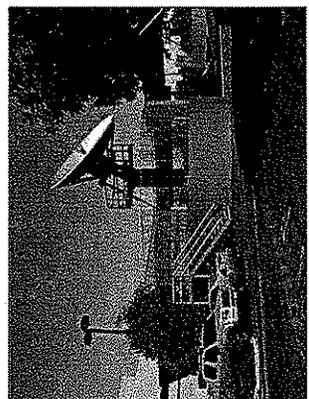
3 A0.3 SCALE: NONE



1 SITE PLAN  
A0.1 SCALE: 1"=40'

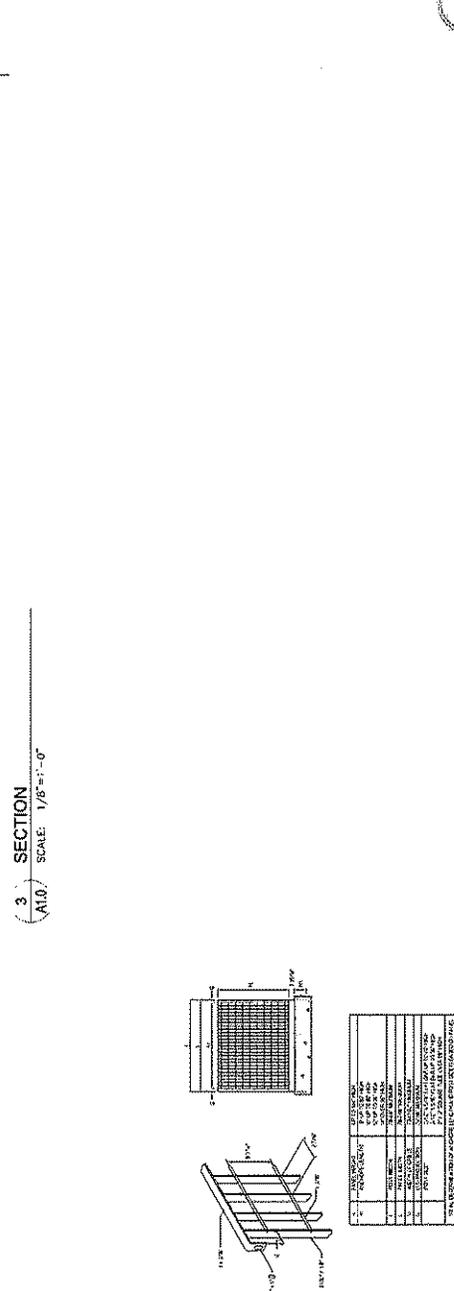
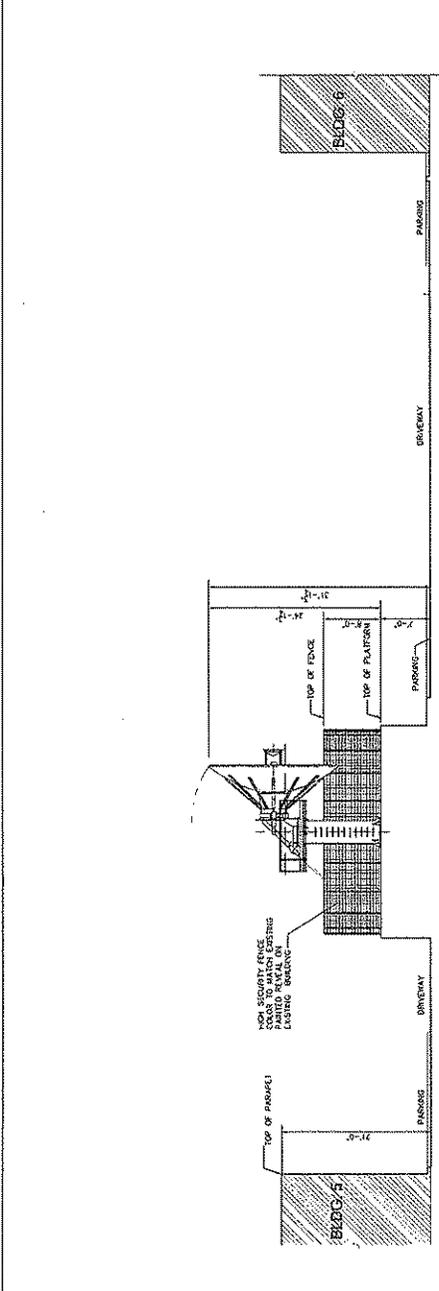
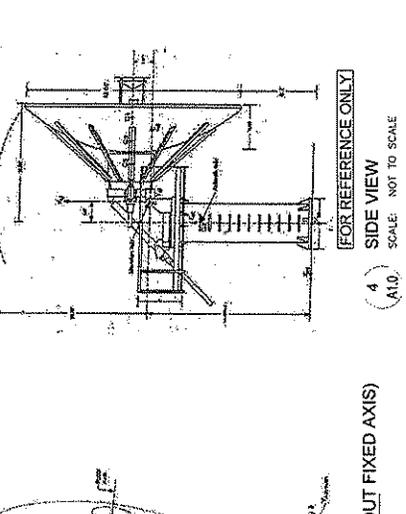
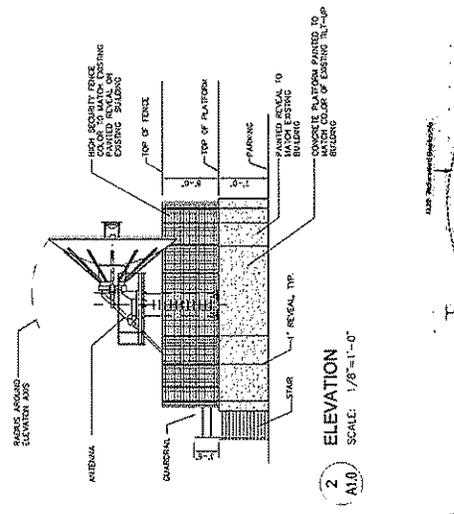
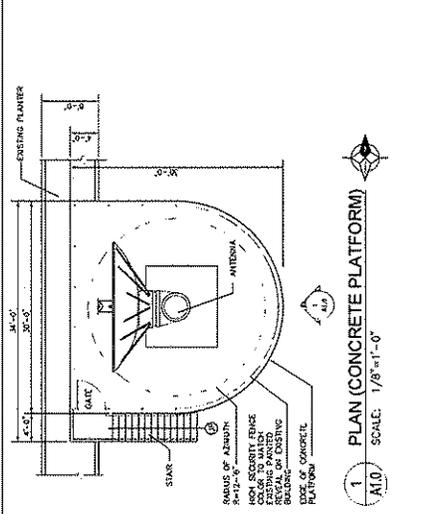


4 A0.3 SCALE: NONE



5 A0.3 SCALE: NONE





**6 PROPOSED HIGH SECURITY FENCE**  
 SCALE: NOT TO SCALE

**METRO**  
 2 1/2" X 3" SLAT FENCE

Application: Area of high risk of intrusion. Strong, secure fence for security. May include 1 1/2" x 3" slat panels, posts, rails, and hardware. See METRO product literature for details.

1. 2 1/2" X 3" SLAT FENCE
2. 1 1/2" X 3" SLAT FENCE
3. 1 1/2" X 3" SLAT FENCE
4. 1 1/2" X 3" SLAT FENCE
5. 1 1/2" X 3" SLAT FENCE
6. 1 1/2" X 3" SLAT FENCE
7. 1 1/2" X 3" SLAT FENCE
8. 1 1/2" X 3" SLAT FENCE
9. 1 1/2" X 3" SLAT FENCE
10. 1 1/2" X 3" SLAT FENCE
11. 1 1/2" X 3" SLAT FENCE
12. 1 1/2" X 3" SLAT FENCE
13. 1 1/2" X 3" SLAT FENCE
14. 1 1/2" X 3" SLAT FENCE
15. 1 1/2" X 3" SLAT FENCE
16. 1 1/2" X 3" SLAT FENCE
17. 1 1/2" X 3" SLAT FENCE
18. 1 1/2" X 3" SLAT FENCE
19. 1 1/2" X 3" SLAT FENCE
20. 1 1/2" X 3" SLAT FENCE

**Cindy Hom**

---

**From:** Kyle Johnston [Kyle.Johnston@globalstar.com]  
**Sent:** Thursday, September 23, 2010 7:22 PM  
**To:** Cindy Hom  
**Cc:** Wen Doong  
**Subject:** Globalstar | Proposed Satellite Antennas  
**Attachments:** Magic Technologies Letter.doc; Comsearch Brochure.pdf; Comsearch Fact Sheet.pdf  
Cindy,

It was great meeting you the other night after the Telecommunications Commission meeting.

I wanted to let you know that we have agreed to allow an independent party (Comsearch) to measure the potential power density of our proposed satellite antennas prior to their installation on our property. We sent Magic Technologies and the Telecommunications Commission the attached letter on Tuesday stating as much. Comsearch will deliver their report to us and Magic Technologies simultaneously prior to the next Telecommunications Commission meeting. As soon as we receive the report, we will forward you a copy to distribute to the Telecommunications Commission.

It is our sincere hope that this added assurance will satisfy our neighbors and the Telecommunications Commission so that there is no further delay in the approval process.

Best,

Kyle Johnston  
Assistant General Counsel  
Globalstar, Inc.  
(408) 933-4313

9/24/2010

September 22, 2010

Bill Gardner  
Senior Director of Operations  
Magic Technologies, Inc.  
463 South Milpitas Blvd.  
Milpitas, CA 95053

Dear Mr. Gardner:

The Milpitas Telecommunications Commission recommended hiring an independent third-party to measure the power density of our proposed satellite antennas prior their installation on our property. Although we do not believe that we are required to do so pursuant to any federal, state or local regulation, we have decided to comply with the Telecommunications Commission's recommendation to ease your employees' concerns.

We have contacted Comsearch, a global leader in spectrum management and wireless engineering products and services (see their enclosed brochure and fact sheet), to conduct the study. The study will be performed using techniques presented in the Federal Communication Commission (FCC) OET Bulletin entitled, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields," dated August 1997, and FCC Report & Order 96-326 . The study will use our existing satellite antennas in operation at our Clifton Gateway in Texas that is of the same type as those we propose to install in our parking lot. This will provide you with an independent measurement to compare against the guidelines established by the FCC and the Environmental Protection Agency.

The estimated cost for Comsearch to conduct the study is \$6,500. We are willing to cover this cost unless you feel the in doing so we might prejudice Comsearch's report, in which case we can arrange to have you pay Comsearch directly. However, in the interest of time, we have assumed that we will cover the cost and have asked Comsearch to begin their study. Comsearch has indicated that their report will be finalized and distributed to us simultaneously prior to the next Telecommunications Commission meeting on October 18th.

In addition to the Comsearch pre-installation study, we stand by our previous commitment to measure the actual power density and any possible interference with your antenna once our satellite antennas are installed in our parking lot. Of course, you are also free to conduct your own tests at any point in the future.

September 23, 2010

Page 2

We sincerely hope that this solution satisfies your concerns. If you have any questions, please contact me at (408) 933-4313 or [kyle.johnston@globalstar.com](mailto:kyle.johnston@globalstar.com).

Sincerely,

Kyle Johnston  
Assistant General Counsel  
Globalstar, Inc.

Enclosure: Comsearch Brochure  
Comsearch Corporate Fact Sheet

CC: Milpitas Telecommunications Commission  
Peter Dalton, CEO, Globalstar, Inc.  
Barbee Ponder, General Counsel, Globalstar, Inc.  
Wen Doong, Director, Gateway Engineering and Operations, Globalstar, Inc.

**City of Milpitas  
Unapproved Minutes  
Telecommunications Commission  
September 20, 2010**

---

**I. Call to Order & Roll Call:**

Vice Chair D. Gupta called the meeting to order.

Members Present R. Shaw, I. Munir, D. Gupta, W. Lam, S. Ahjua, K. Bohan, N. Gupta, H. Tran, S. Bansal

I.S. Staff: B. Marion, E. Pasion

City Council: A. Gomez

Members Absent: A. Alcorn

**II. Pledge of Allegiance:**

The members of the Commission recited the Pledge of Allegiance.

**III. Announcements:**

Staff reported that Chair Alcorn was away on business and was excused from the meeting.

**IV. Approval of the Agenda:**

Motion to approve the agenda as submitted.

M/S                      N. Gupta / H. Tran                      Ayes: 9

**V. Approval of the Minutes:**

August 16 minutes were reviewed by the members of the Telecom commission. Vice Chair D. Gupta requested several corrections to the meetings for final approval.

Motion to approve the minutes as submitted.

M/S                      R. Shaw / S. Bansal                      Ayes: 9

**VI. Citizen's Forum:**

No comments made for the record.

**VII. New and Continued Business:**

1. Globalstar Satellite Review 461 S. Milpitas Blvd.

Cindy Hom, with the City's Planning Department, provided a summary for a request to install two 18' rotatable satellite dishes to be located at 461 South Milpitas boulevard. The two dishes would be situated on north parking lot between Globalstar and Magic Technologies. The plans have been reviewed by the City's Planning and Fire Inspection departments and the applicant has received approval and an operations license from

the Federal Communications Commission for the two satellite dishes. Globalstar plans to use the two dishes for experimental development.

Commissioner Bohan requested clarity of Globalstar's experimental development plans for this location.

Mr. Wen Doong, Director of Engineering and Operations at [Globalstar](#), Milpitas, noted the two satellite dishes would be used primarily for experimental development of new mobile satellite communications technologies. He added that Globalstar's Milpitas business location is involved in developing, testing and validating new mobile satellite technologies for their business partners. He added that Globalstar currently operates 48 low Earth orbit satellites. Globalstar will be increasing its satellites inventory to 24 in the next several months as it develops and tests new second generation ground equipment for mobile satellite phones. The work involving the two dishes will be used to track over-the-air satellites and communicate with Globalstar's low Earth orbit satellite network.

Vice Chair D. Gupta noted that the dishes are away from the South Milpitas Blvd. Mr. Doong noted that angle of the dishes will operate at a ten degree elevation or higher and will not operate below that elevation.

Commission Bansal noted that health concerns indicated by Magic Technologies which is located adjacent to the proposed two 18 foot satellite dishes.

Mr. Doong outlined the three items of concern by Magic Technologies: Parking Space, Interference with existing communications link and possible Health Impacts.

Mr. Doong reported that Globalstar and Magic have met and discussed the concerns over the past five months involving this proposed satellite dish installation. He added that Globalstar and Magic were in agreement with the parking allocation concerns. There will be no parking spaces removed for this installation. Globalstar has worked with City of Milpitas and the property landlord and all are in agreement. As for the possible interference of Magic's wireless communications link, Globalstar noted that its dishes operate on a completely different frequency there would be no interference with Magic's communications link. Globalstar will offer to do a power measurement study once the two dishes are installed to address Magic's concerns. Globalstar will also mask the antennas to avoid any interference with Magic's operations. As for the final item regarding health concerns involving the installation satellite dishes in close approximation of Magic's building, Mr. Doong stated that the two dishes operate within the FCC's prescribed health and safety guidelines do not believe there would be any concerns involving health issues.

Mr. Nabil Arnaout, Senior Facilities Manager for Magic Technologies, located next door to Globalstar, noted that the

employees of Magic Technologies are concerned with unknown health and radiation issues. He asked that Globalstar conduct a third part power study to address Magic's concerns. He noted that Globalstar denied their request based on previously approved documentation and guidelines dictated by the FCC. Magic was seeking complete validation and an approved study to alleviate their health and radiation concerns. He requested the commission's support to conduct a power density and radiation evaluation.

Vice Chair D. Gupta suggested that there should be a power-radiation study conducted by a third party to address Magic Technologies' health concerns. Commissioner Bohan added that FCC may be able provide direction and assistance on alleviating the concerns that may or may not be apparent.

Mr. Arnaut reiterated that Magic Technology's employees are concerned. He added that there needs to be additional safe guards that can be conveyed to their employees.

Commission Lam asked if Magic requested and third parties that can be hired to conduct and power density study. Mr. Arnaut added that they have not done a third party independent study as of yet.

Mr. Doong noted Globalstar has worked with the FCC on this matter, where they received approval, for sixteen other satellite locations currently in operation. They are willing to work with Magic to address there concerns. Globalstar has already been given FCC approval to operate the two proposed dishes. He added Globalstar will conduct power density and radio frequency measurement testing to accommodate and comfort Magic Technologies' concerns on the matter. He added that the two satellites would not steer within the direction of Magic Technologies building direction. He noted that the concerns were primarily based on human fear of the unknown of the technology being used by Globalstar.

Vice Chair D. Gupta added that other existing Globalstar dishes operate on the same technology and that data can be used to demonstrate and provide validation to Magic's health concerns.

Mr. Arnaut noted that none of the dishes used for comparison are not located anywhere near businesses like the one being requested.

Commission S. Ajhuja asked if a simulation can be done with another location that can be done for data gathering information.

Commission Munir noted that there are other C-Band satellite dishes that operate on a similar technology in Santa Clara County.

Commissioner Bohan noted that if the satellite technology is within FCC operational guidelines there is no reason to deny the application request. He added that if the satellite operates within

the prescribed guidelines and insures that does not exceed the FCC guidelines. If out of compliance then the satellites must be shut down. Mr. Doong added if the ever the satellite dishes fell out of compliance of the FCC guidelines the dishes would be shutdown.

Commissioner Bansal also reiterated the fact a third party study be conducted to appease Magic Technologies concerns over the power and radiation usage of the two satellite dishes. Vice Chair D. Gupta concurred. Commission Bohan didn't think that a third party would be not being of any help since that the technology has already been certified and approved by the FCC. A projected study or simulation data will not answer Magic's questions.

Mr. Doong requested to move forward with the approval of the project and will work with Magic on the outstanding issues. He added that to do a technology test once a year will not yield usable and satisfactory data to report. He added the installation of the dishes is on tight schedule for completion.

Vice Chair D. Gupta requested that Globalstar return to the October 18 commission meeting to provide a status and outcome between Globalstar and Magic Technologies.

Ms. Hom reiterated that the commission cannot regulate based on RF emissions. The city can only suggest some possible solutions for this project.

Mr. Doong believes that there can be a solution and resolution for all parties to come to a consensus.

Mr. Arnaut noted he looks forward to working on addressing Magic's health concerns and come to a workable agreement before next month's meeting.

Vice Chair D. Gupta suggested that the two talk more and come back on October 18 meeting. The Commission cannot stop the approval but would like Globalstar to satisfy Magic's concerns.

Commissioner Shaw asked if the Fire Dept reviewed. Staff noted that various city department have reviewed than project and provide comments

Vice Chair D. Gupta added that the concerns needs to be put into agreement and documented that a both parties find acceptable.

Motion to have Globalstar return with a proposal to address the safety concerns of Magic Technology involving the installation of two satellite dishes at 461 S. Milpitas Blvd and report back at the October 18 meeting for a final review.

M/S

S. Bansal / H. Tran

Ayes: 9

2. Payroll Demonstration.

Bill Marion, the City's Director of Information Services, provided a summary of an online payroll pilot project. The program was designed and developed by the City's Information Services staff. The online payroll pilot project was developed to address the commission's recent review of the City's payroll processing workflow. Staff reported that the Information Services department staff will conduct a pilot test of the online payroll program first before deploying throughout the city workforce.

The commission asked will there be accommodations made for staffs that do not have access to computers. Staff added that there will still be paper timecards made for those employees who do not have direct access to a city computer.

The Commission requested another follow up on the payroll pilot project during their October 18 meeting.

Motion to note, receipt and file.

M/S                      N. Gupta / W. Lam                      Ayes: 9

3. August Information Services Report

The commission deferred the August monthly report to the October 18<sup>th</sup> commission meeting.

4. Round Table Discussion

No comments made by the commission.

**VIII. Adjournment of Meeting:**

Meeting adjourned to October 18, 2010.

City of Milpitas  
Planning Division  
455 E. Calaveras Blvd.  
Milpitas, CA 95035  
(408) 586-3279

**Questionnaire for Telecommunication Facility Providers**

All applicants requesting to install telecommunications facilities within the City of Milpitas must complete this questionnaire as part of their use permit application submittal.

Applicant Name: GLOBALSTAR, INC

Applicant Address: 461 S. MILPITAS BLVD 95035

Applicant Phone: 408 933 4440 Applicant Fax: 408 933 4957

Applicant e-mail address: WEN.DOONG@GLOBALSTAR.COM

Location of Project: PARKING LOT 461 S. MILPITAS BLVD.

Is this an existing facility or a Co-Location?  Yes  No Previous Owner: \_\_\_\_\_

If yes, are you using the same technology?  Yes  No

Date previously approved by the Telecommunications Commission: \_\_\_\_\_

Provide a brief description of project (Telecommunications Facility): TWO C-BAND ANTENNAS TO SUPPORT SATELLITE COMMUNICATIONS DEVELOPMENT AND TESTING.

1. Please indicate below the frequency range you plan to use?

- VHF Low-Band (30-50 Mhz or 72-76 Mhz)
- VHF High-Band (136-174 Mhz or 220-222 Mhz)
- UHF or T-Band (406-420 Mhz or 450-470 Mhz or 470-512 Mhz)
- 800 or 900 Mhz Band (800-960 except 900 Mhz Spread Spectrum)
- 900 Mhz Spread Spectrum (902-928 Mhz)
- Other than specified above (State frequency band in Mhz). Describe: 5091-5250 MHz

2. Please indicate below the channel/system proposed for use?

- A single channel
- Multiple channel
- A frequency agile system
- A spread spectrum system
- Other: \_\_\_\_\_

3. Please indicate below the frequency range you plan to use?

- Narrow band ( $\pm 5$  Khz or less deviation)
- Broad band (greater than  $\pm 5$  Khz deviation)
- Spread Spectrum
- Other: \_\_\_\_\_

RECEIVED

SEP 10 2010

CITY OF MILPITAS  
PLANNING DIVISION

4. What will the effective radiated power (ERP) be when all channels at your proposed site are radiating?  
68 DBW MAXIMUM
5. Will the site be in compliance with current ANSI radiation health standards?  Yes  No
6. What horizontal radiation pattern is planned for this project?  
 Omnidirectional  
 Sectored  
 Directional (provide half power beam width) 0.72 AT 5250 MHZ
7. What will the vertical radiation angle (half power beam width) be for your proposed antenna(s)?  
10° TO 90° FULL MOTION
8. How high above the local terrain (e.g., surrounding structures) will the center of radiation of your proposed antenna(s) be? 6.6 feet
9. How close to your proposed project is the nearest roadway 400 feet/miles and, if elevated, what is the roadway's height above the local terrain? Ø feet
10. How close to your proposed project is the nearest regularly occupied building and how high is the top floor above local terrain? 25', Ø
11. What is the distance to the nearest existing radio communications or broadcast antenna(s) if less than 1/2 mile? N.A. feet/miles. If known, identify owner/operator: \_\_\_\_\_
12. What is the status of your FCC license grant? SUBMITTED  
 (Include a \*copy of the license with submittal of this questionnaire.)

**NOTE: The below listed items are required by the applicant as part of this submittal if required to go to the Telecommunications Commission:**

- a) Provider's build-out map\* showing all sites anticipated within Milpitas (see question no. 2)
- b) Photo simulations\*\* of antenna(s) as viewed from at least three surrounding view points. Show "worst case" vantage points.
- c) List of all sites that were investigated\*\* for a particular search ring and the reasons why they were discarded. Include names and phone numbers of persons contacted regarding potential sites.
- d) Copy of applicants Power Density Study\* (see item no. 4).

\* 20 copies (Telecommunication Commission)

\*\* 35 copies (Telecommunication Commission & Planning Commission)

Back of  
Telecommunication Questionnaire

## Globalstar Antenna Power Density Characteristics Milpitas Antenna Project

### INTRODUCTION

The FCC has four required safety limits for antenna power density, measured in our case at 131 m (near field of our 5.5 m antenna) 315 m (far field of our 5.5 m antenna), 223 m (transition zone of our 5.5 m antenna) and at the physical edge of the main reflector. The measurement distances vary by antenna diameter. The specifications are designed to provide safety to personnel located at any distance, including close proximity, to the antenna. The power density of Globalstar antennas is significantly below the FCC specification threshold in all cases:

Near Field Specification: Not to exceed 5.0 mW/cm<sup>2</sup>  
Globalstar Performance: **1.3 mW/cm<sup>2</sup>**

Far Field Specification: Not to exceed 1.0 mW/cm<sup>2</sup>  
Globalstar Performance: **0.5 mW/cm<sup>2</sup>**

Transition zone specification: Not to exceed 5.0 mW/cm<sup>2</sup>  
Globalstar Performance: **0.8 mW/cm<sup>2</sup>**

Edge of main reflector: Not to exceed 5.0 mW/cm<sup>2</sup>  
Globalstar Performance: **0.5 mW/cm<sup>2</sup>**

**RECEIVED**

SEP 10 2010

**CITY OF MILPITAS  
PLANNING DIVISION**

The Office of Engineering and Technology (OET) Bulletin 65 specifies a maximum exposure level at an average power level of 5 mW/cm<sup>2</sup> over a 6-minute period. The following analysis, prepared by Globalstar USA, estimates the radiation hazard that could potentially exist in the vicinity of a 5.2 GHz transmit/7.0 GHz receive gateway feeder link earth station using a 5.5-meter Alcatel antenna. A radiation hazard is potentially the greatest in the near-field, far-field, transition zone and at the edge of the main reflector. All of these areas are examined in this analysis.

### NEAR-FIELD

The extent of the Fresnel region or near-field is defined by the equation  $R_{nf} = D^2/(4*\lambda)$ , where D is the antenna diameter of 5.5 meters and  $\lambda$  is the transmit frequency wavelength of 5.8 centimeters.

$$R_{nf} = (5.5\text{m})^2/(4*0.06\text{m}) = 131 \text{ m.}$$

The maximum power density in the near-field is defined by the equation  $S_{nf} = 16*\eta*P/(\pi*D^2)$ , where  $\eta$  is the antenna aperture efficiency of 70%, P is the maximum power at the antenna input flange of 110 watts, and D is the antenna diameter of 5.5 meters.

$$S_{nf} = 16*0.70*110,000\text{mW}/(\pi*(550\text{cm})^2) = \mathbf{1.3 \text{ mW/cm}^2},$$

# Globalstar Antenna Power Density Characteristics

## Milpitas Antenna Project

### TRANSITION ZONE

The maximum power density in the transition zone is defined by the equation  $S_t = S_{nf} * R_{nf} / R_d$ , where  $S_{nf}$  is the maximum near-field power density,  $R_{nf}$  is the near-field extent of 131 meters, and  $R_d$  is the distance to a point in the transition zone. Using a mean distance of 223 meters for  $R_d$ ,

$$S_t = 1.3 \text{ mW/m}^2 * 131 \text{ m} / 223 \text{ m} = 0.8 \text{ mW/cm}^2,$$

which is below the maximum allowable exposure level of  $5 \text{ mW/cm}^2$ .

### EDGE OF MAIN REFLECTOR

For even distributions, the power density at the edge of the main antenna reflector is defined by the equation  $W = P/A$ , where  $P$  is the maximum power at the antenna input flange of 110 watts, and  $A$  is the main reflector area or  $\pi * (D/2)^2$ , where  $D$  is the antenna diameter of 5.5 meters.

$$W = 110,000 \text{ mW} / (\pi * (550 \text{ cm} / 2)^2) = 0.5 \text{ mW/cm}^2,$$

which is below the maximum allowable exposure level of  $5 \text{ mW/cm}^2$ .

### SUMMARY

The above analysis follows the OET 65 guidelines and shows that harmful levels of radiation above maximum allowable exposure level of  $5 \text{ mW/cm}^2$  will not exist in areas normally occupied by anyone, including the gateway earth station's operation and maintenance personnel.

For added precaution, standard radiation hazard warnings will be posted around the earth station and on the antenna itself, alerting personnel to avoid the area in front of the main reflector during transmitter operation. Note that potentially hazardous radiation levels may still exist directly in the main antenna beam and between the antenna feed and subreflector, but these areas will only be accessible by authorized engineering personnel for maintenance purposes, and only after a transmitter power inhibit safeguard has been enabled in accordance with the maintenance procedures. This transmit inhibit will disable any amplifier input signal, thereby muting the power into the antenna, and will be activated by switches in the equipment building, at the antenna structure itself, or by interlock switches which will automatically activate when equipment doors or panels are opened. Safety signs alerting personnel to avoid the area in front of the main reflector will also be posted outside the radome. In addition, a perimeter security fence will surround the entire antenna foundation. Only authorized personnel will have access inside of the fenced enclosure.

United States of America  
FEDERAL COMMUNICATIONS COMMISSION  
EXPERIMENTAL  
RADIO STATION CONSTRUCTION PERMIT  
AND LICENSE

EXPERIMENTAL  
(Nature of Service)

WF2XKO  
(Call Sign)

XT    FX  
(Class of Station)

0026-EX-PL-2010  
(File Number)

NAME GUSA Licensee LLC

Subject to the provisions of the Communications Act of 1934, subsequent acts, and treaties, and all regulations heretofore or hereafter made by this Commission, and further subject to the conditions and requirements set forth in this license, the licensee hereof is hereby authorized to use and operate the radio transmitting facilities hereinafter described for radio communications in accordance with the program of experimentation described by the licensee in its application for license.

Operation: In accordance with Sec. 5.3(i) of the Commission's Rules

Station Locations

- (1) Milpitas (SANTA CLARA), CA - NL 37-25-32; WL 121-53-47
- (2) Milpitas (SANTA CLARA), CA - NL 37-25-30; WL 121-53-46

Frequency Information

Milpitas (SANTA CLARA), CA - NL 37-25-32; WL 121-53-47

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
5091-5250 MHz	FX	N0N	6.3 MW (ERP)	1.0E-8 %
		76K0F2D		
		1M23G7W		
		40K0G2D		
		2M46G7W		
		2M46G2W		
		1M23XXX		
		1M23G2W		

This authorization effective September 14, 2010 and will expire 3:00 A.M. EST September 01, 2012

FEDERAL COMMUNICATIONS COMMISSION

