



DEPARTMENT OF COMMUNITY DEVELOPMENT SERVICES

Planning Division

m e m o r a n d u m

TO: The Urbana Plan Commission

FROM: Paul Lindahl, Planner I

DATE: October 14, 2005

SUBJECT: Plan Case No. 1961-SU-05, Request for a Special Use Permit to install a *Telecommunications Antenna with Tower* at 202 South Broadway Avenue in Urbana's B-4 Central Business Residential Zoning District.

Introduction

This case is a request by the Independent Media Center (IMC) for a Special Use Permit to install a radio *Antenna with Tower* at 202 South Broadway Avenue. The subject property is located in Urbana's B-4 Central Business Residential Zoning District.

The Zoning Ordinance Article V, Section V-11.Q.1.b says that *Antennas with Towers* in the B-4 Central Business zoning district require Special Use Permit review. Pursuant to the Urbana Zoning Ordinance, the Plan Commission must recommend approval or denial of the Special Use and forward it to City Council for action.

Background

Description of the Site and Surrounding Properties

The IMC is located in the former U.S. Post Office building at the southeast corner of Broadway Avenue and Elm Street. The site is located within Urbana's central business district. The immediate area includes commercial uses, institutional uses, and mixed use buildings (see aerial photograph exhibit). To the North across Elm Street is the Champaign County Courthouse. To the South is the Lincoln Square Village mall. West across the dead end loop of Broadway is the historic Lincoln Hotel (formerly Jumer's Castle Lodge). To the east is a parking area and a U.S. Federal Courthouse building.

Built in 1914 in a Neo-Classical style, the U.S. Post Office is an historically noteworthy structure and will soon be considered for designation as a local landmark. Pursuant to Section 106 of the Historic Preservation Act, the structure is subject to covenant restrictions due to its historic nature. The proposed installation must undergo review and approval for Section 106 compliance through the State Historic Preservation Office. Representatives for the IMC are working with the State on attaining this approval.

In September 2004, a “Nationwide Agreement” entitled “Nationwide Programmatic Agreement for Review of Effects on Historic Properties for Certain Undertakings Approved by the Federal Communications Commission,” was enacted. Section 106 of the National Historic Preservation Act of 1966, (NHPA) requires federal agencies to take into account the effects of their “Undertakings” (such as issuing Federal Communications Commission (FCC) radio antenna licenses) on Historic Properties included in or eligible for inclusion in the National Register of Historic Places, and so give the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment with regard to such “Undertakings”. In the case of tower and antenna licenses from the FCC, Section 106 of the NHPA requires the applicant to submit a “New Tower Submission Packet” (FCC Form 620) to the State Historic Preservation Office (SHPO) for review of any potential adverse impact on any Historic Properties.

Certain categories of new tower construction were excluded from Historic Preservation review under Section 106 of the NHPA and are described in Section III of the Nationwide Agreement. For example an applicant’s proposal may be exempt from Section 106 review in a number of cases including the case of (from page B-9, section C. 4) “A temporary ballast mount Tower”. The C-U Independent Media Center states that exemption is applicable to the proposed tower and antenna in this case so construction of the temporary tower is permissible until completion of a Section 106 application and review by the State Historic Preservation Office for a permanent tower.

The following is a summary of surrounding zoning and land uses for the subject site:

Zoning and Land Use Table*

Location	Zoning	Existing Land Use	Comprehensive Plan Future Land Use
Subject Property	B-4, Central Business	Apartment Buildings	Central Business
North	B-4, Central Business	County Courthouse	Central Business
South	B-4, Central Business	Lincoln Square Village mall	Central Business
East	B-4, Central Business	Parking lot, then Federal Courthouse	Central Business
West	B-4, Central Business	Broadway Ave dead end / Mall access drive then Hotel	Central Business

* (Please refer to the attached Zoning, Existing Land Use, and Future Land Use maps for further information.)

Towers and Antennas

The Urbana Zoning Ordinance defines *Tower* as:

“Any structure that is designed and constructed primarily for the purpose of supporting one or more antennas, including self-supporting lattice towers, guy towers, or monopole towers. The term encompasses personal wireless service facilities, radio and television transmission towers, microwave towers, common-carrier towers, cellular telephone towers or personal communications services towers, alternative tower structures, and the like.”

The Urbana Zoning Ordinance defines *Antennae* as:

“Any exterior apparatus designed for telephonic, radio, data, Internet, or television communications through the sending and/or receiving of electromagnetic waves, including equipment attached to a tower or building for the purpose of providing personal wireless services, including unlicensed wireless telecommunications services, wireless telecommunications services utilizing frequencies authorized by the Federal Communications Commission for “cellular,” “enhanced specialized mobile radio” and “personal communications services,” telecommunications services, and its attendant base station.”

The Urbana Zoning Ordinance allows *antennas with towers* on existing structures provided the top of the antenna must not exceed 35 feet from the top of the building. There are no height requirements for buildings in the B-4 district.

The petitioners would mount their antenna on a triangular lattice tower of approximately one foot per side. The tower and antenna will be supported by guy wires attached to the building. The radio station studio and electrical equipment will be located inside the building. Please refer to the attached site plan (which supersedes the plan information attached to the application).

The tower would be located in the center of the roof of the IMC former post office building approximately 55 feet from the east and west edge, and 30 feet from the north and south edge. The tower is a standard commercial design and the wind loading calculations and mounting plans have been created by an Illinois licensed structural engineer. In the unlikely event the tower were to fall straight over it would land entirely on the IMC property. Towers are actually designed to break in the middle and so collapse into an area that is smaller than their height. As designed no part of the tower and antennae should ever fall off the top of the building. The tower itself is a steel triangular lattice painted gray, 17 feet in height with 18-inch wide sides (See engineering plans exhibit). There would be three guy wires of ¼ inch steel cable that connect from the roof top to the top of the tower section. The next section is a steel pipe painted gray, 2.5 inches in diameter extending another 18 feet from the top of the tower. There are actually two separate TV style antennas attached to the pole itself. One is located four feet below the top and the other 12 feet below the top. Each of the antennas is about five feet long horizontally and three feet tall and wide.

Discussion

Staff analysis

The IMC has a license to operate a 100-watt low power radio station with call letters of WRFU. The petitioners say that this location is within an area that will meet the technical requirements for placement of a low power radio station antenna to serve the center of town. Antennas must be placed in areas that can transmit effectively to the target service area. A second constraint is that an antenna must be permissible in that zoning district. Third, there must be a landowner willing to lease the property. One of the reasons the IMC chose to purchase and relocate to the old post office was it met all those criteria.

The purpose of Special Use permit review of towers and antennas in the B-4 Central Business district is to ensure they are designed and located with reasonable care. The question for review in this instance is whether the placement of the tower and antenna as proposed in the site plan meets the intent of the Special Use provisions of the zoning code to not “... be unreasonably injurious or detrimental to the district in which it shall be located, or otherwise injurious to the public welfare.”

Structural design of the tower is addressed above. Inasmuch as the Urbana Building Safety Staff review the plans of any structure they accept the seal of a licensed engineer as a statement that the design is sound.

Also of concern is the potential visual impact of the tower and antenna as it may be viewed by pedestrians or occupants of adjacent buildings. Cellular and radio towers and antennas are typical rooftop appurtenances in urban areas and are generally visually compatible with the urban surroundings. This is particularly true if the host structure is itself taller than surrounding structures. However the Post Office building is shorter than some other nearby structures (e.g., Champaign County Courthouse and Historic Lincoln Hotel). This could make the tower/antenna more noticeable than it otherwise would be. In addition, at 35 feet, the tower/antenna will be distinctly taller than other rooftop appurtenances found downtown. It's appearance will be similar to a tower and antenna located behind the municipal building at 400 South Vine Street.

While the tower/antenna will be relatively tall for the host building and surrounding buildings, its visual impact will be substantially mitigated by its very narrow width dimensions. As shown on the attached site plan, the upper 18 feet of the tower/antenna will only be 2.5 inches in width. The lower 17 feet of the tower/antenna will be only 18 inches in width. These narrow dimensions combined with the neutral gray color will make the visible portion of the antenna unobtrusive from most surrounding viewpoints. For those viewpoints where it is visible, the tower/antenna would not be disharmonious with the urban setting. It should be noted that the B-4 zoning district does not have a height restriction so that the height of the structure alone can not be held inconsistent with the district in which it is located.

Impacts of the proposed tower/antenna upon the historic covenants pertaining to the building are subject to review and approval by the State Historic Preservation Officer.

Requirements for a Special Use Permit

According to Section VII-6 of the Urbana Zoning Ordinance, an application for a Special Use Permit shall demonstrate the following:

- 1. That the proposed use is conducive to the public convenience at that location.*

The proposed use is conducive to the public convenience because it would facilitate the operation of low power community radio service to residential and business customers in the area.

- 2. That the proposed use is designed, located, and proposed to be operated so that it will not be unreasonably injurious or detrimental to the district in which it shall be located, or otherwise injurious to the public welfare.*

The proposed use should not pose a detriment to the district in which it is proposed to be located or any adjoining properties. The addition of the tower and antenna would not be visually disharmonious with its urban surroundings and should not have a significant negative visual impact on the surrounding property.

- 3. That the proposed use conforms to the applicable regulations and standards of, and preserves the essential character of, the district in which it shall be located, except where such regulations and standards are modified by Section VII-7.*

Antennae with towers are permitted in the B-4 Central Business zoning district under Special Use Permit review. The proposed facility is designed to meet applicable regulations and standards of the Urbana

Building Code as well as applicable Federal Communications Commission regulations. Should the Special Use Permit be granted, the petitioner will be required to obtain a building permit to erect the tower and antenna. The building permit application will be reviewed to demonstrate complete compliance with the provisions of the Special Use Permit as well as all other applicable codes and ordinances.

Consideration

The Plan Commission shall determine whether the reasons set forth in the application, and the evidence adduced during the public hearing, justify the granting of the special use permit, and whether the proposed use will be in harmony with the general purpose and intent of the Zoning Ordinance, and will not be unreasonably injurious or detrimental to the district in which it shall be located, or otherwise injurious or detrimental to the public welfare.

In addition, the Plan Commission shall make a recommendation to the City Council for or against the proposed special use, and may also recommend such additional conditions and requirements on the operation of the proposed use as are appropriate or necessary for the public health, safety, and welfare, and to carry out the purposes of the Zoning Ordinance, including but not limited to the following:

1. Regulate the location, extent, and intensity of such use;
2. Require adherence to an approved site plan;
3. Require landscaping and the screening of such use by means of fences, walls, or vegetation;
4. Stipulate a required minimum lot size, minimum yards, and maximum height of buildings and structures;
5. Regulate vehicular access and volume, and the design and location of parking and loading areas and structures;
6. Require conformance to health, safety, and sanitation requirements as necessary;
7. Regulate signs and outdoor lighting;
8. Any other conditions deemed necessary to affect the purposes of the Ordinance.

Summary of Findings

1. *Antennae with towers* are permitted in the B-4 Central Business zoning district under Special Use Permit review.
2. The purpose of Special Use permit review of towers and antennas in the B-4 district is to ensure they are designed and located with reasonable care.
3. The proposed use is conducive to the public convenience because it would facilitate the operation of low power community radio service to residential and business customers in the area.
4. The proposed use should not pose a detriment to the district in which it is proposed to be located or any adjoining properties. The addition of the tower and antenna should not have a significant negative visual impact on the surrounding property.
5. The proposed facility is designed to meet applicable regulations and standards of the Urbana Building Safety Division as well as applicable Federal Communications Commission regulations.
6. The proposed use is consistent with the zoning designations of the subject site and the surrounding

area.

7. The proposed use is compatible with the existing land use pattern of the general area.

Options

The Plan Commission has the following options for recommendations to the City Council regarding Plan Case No. 1961-SU-05:

1. Recommend approval of the Special Use Permit request, without any additional conditions.
2. Recommend approval of the Special Use Permit request, with any conditions deemed appropriate or necessary for the public health, safety, and welfare, and to carry out the purposes of the Zoning Ordinance.
3. Recommend denial of the request for a Special Use Permit.

Staff Recommendation

Based on the evidence presented in the discussion above, and without the benefit of considering additional evidence that may be presented at the public hearing, staff recommends that the Plan Commission recommend **approval** of the proposed special use permit in Plan Case No. 1961-SU-05 to the City Council as presented for the reasons articulated above with the **following conditions**:

- 1. The design, installation, and operation of the equipment enclosure and associated cellular equipment shall be in accordance with all applicable city, state, and federal codes and ordinances.**
- 2. The petitioner will complete the National Historic Preservation (Section 106) review process for the tower/antenna use through the State Historic Preservation Office and will continually update the City with information demonstrating compliance, including copies of correspondence and documentation. The petitioners will adhere to all requirements of the covenants for the historic Federal Post Office subject site.**

Attachments: Exhibit A, Location Map
Exhibit B, Zoning map
Exhibit C, Existing Land Use on Aerial Photo map
Exhibit D, Future Land Use map
Exhibit E, Engineering Diagram
Exhibit F, Special Use Application
Exhibit G, Manufacturers tower and antenna information

Cc:

Independent Media Center

Independent Media Center

Allen Engineering, Corp

Attn: Sascha Meinrath
202 S. Broadway Avenue
Urbana, IL 61801

Attn: Mike Lehman
202 S. Broadway Avenue
Urbana, IL 61801

Attn: Daniel Allen
3848 E. Fulton Ave.
Decatur, IL 62521

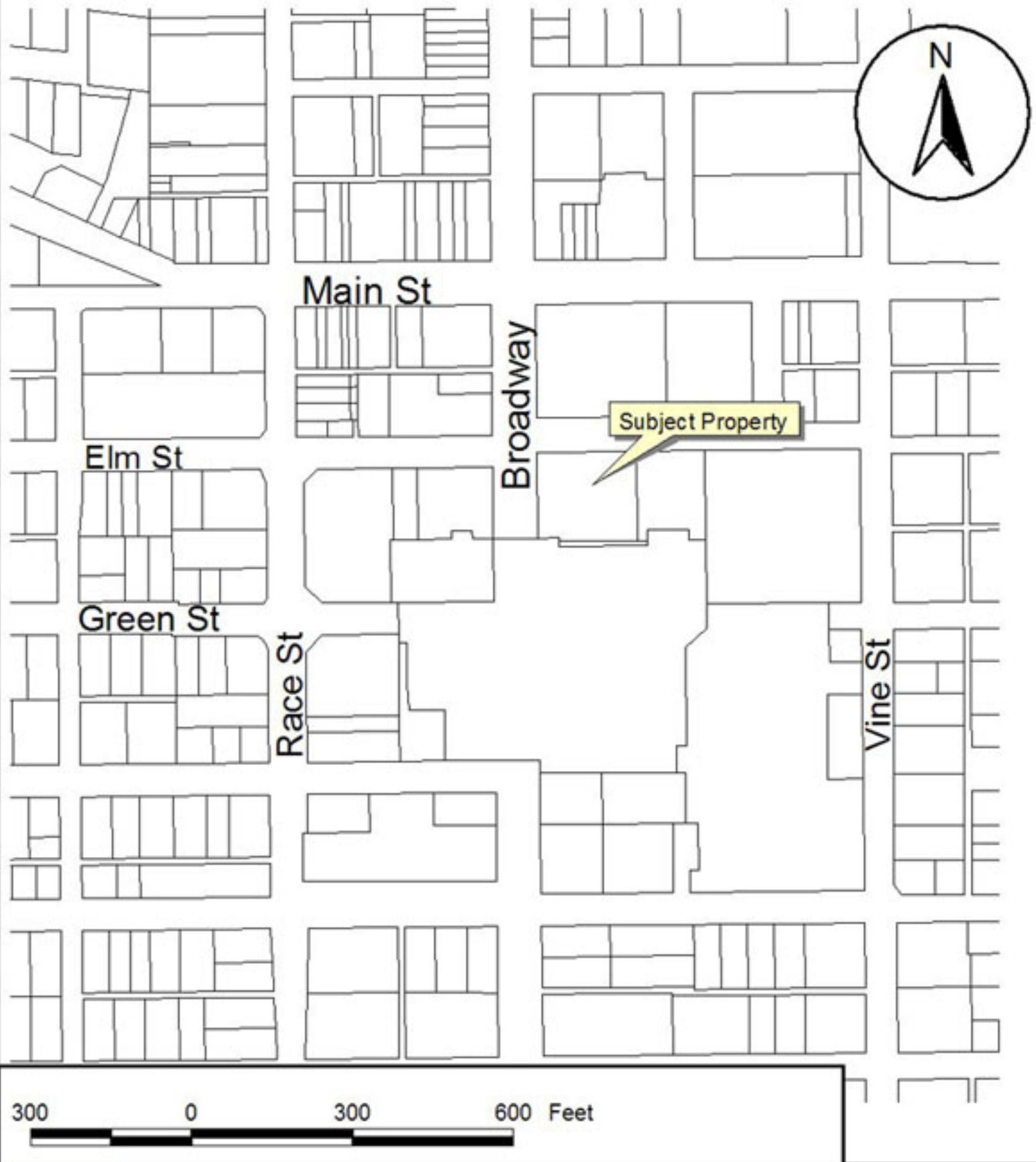
James Webster
104 West University Avenue
Urbana, IL 61801

Alice Novak, Chair
Urbana Historic Preservation
Commission

H:\Planning Division\001-ALL CASES(and archive in progress)\02 - PLAN
Cases\2005\1961-SU-05 IMC- Post Office, Tower-Antenne\1961-su-05 pc memo v4
final.doc

Location Map

Exhibit "A"

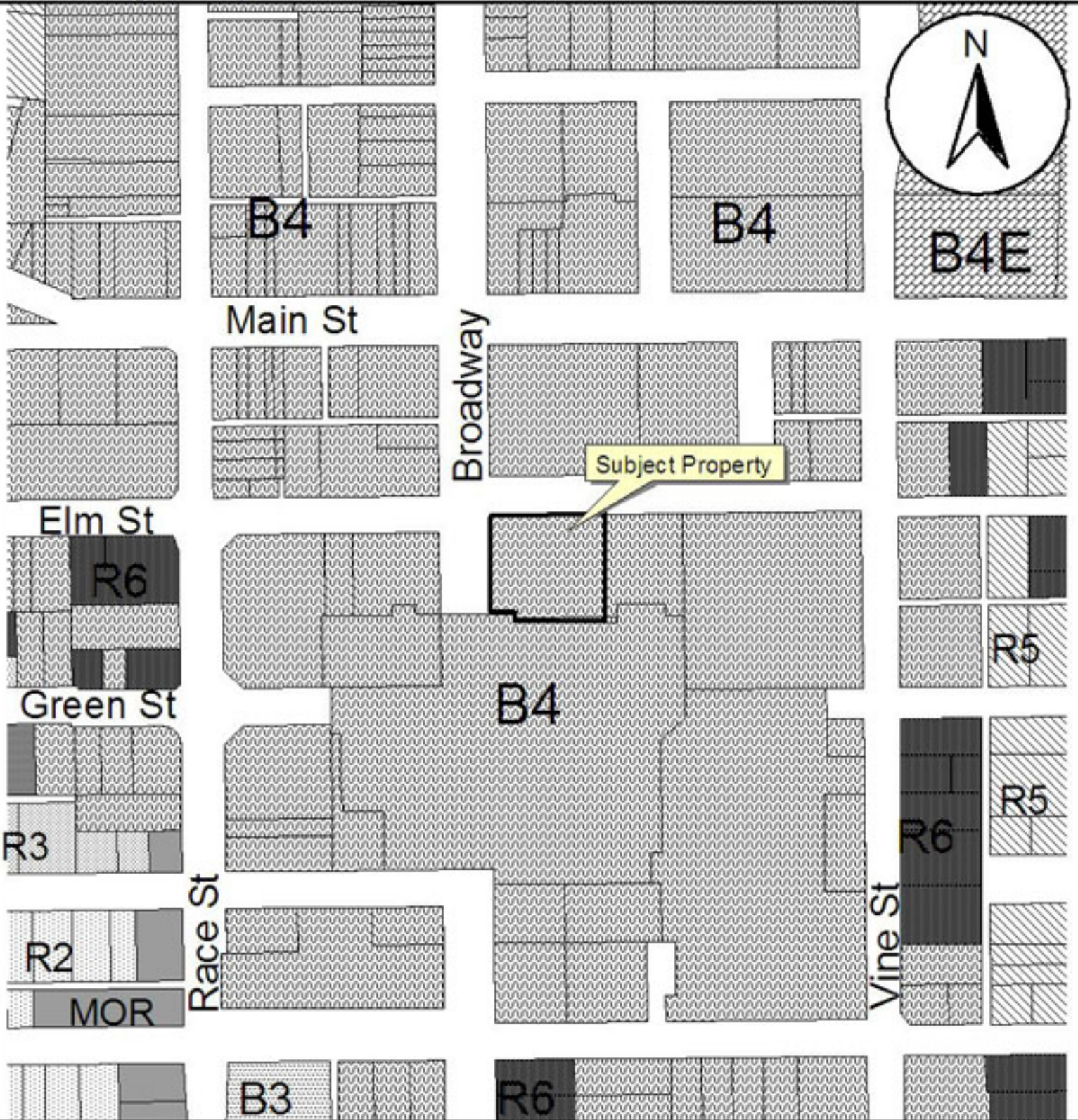


ZBA Case: 1961-SU-05
Petitioner: Independent Media Center
Location: 202 S. Broadway
Zoning: B-4, Central Business
Description:
Allow media tower in B-4 Zoning District

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Zoning Map

Exhibit "B"



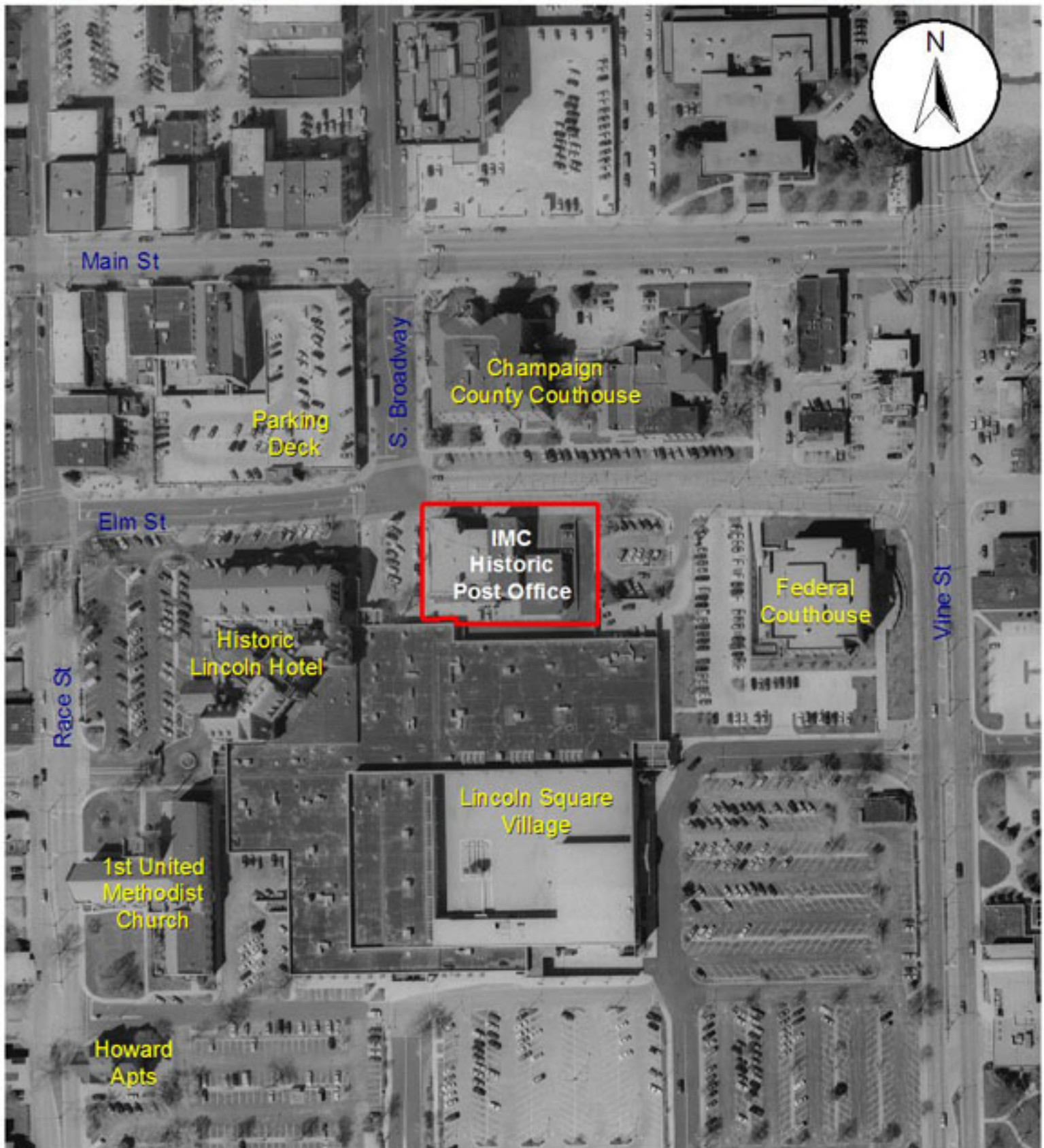
ZBA Case: 1961-SU-05
 Petitioner: Independent Media Center
 Location: 202 S. Broadway
 Zoning: B-4, Central Business
 Description: Allow media tower in B-4 Zoning District

Prepared 10/04/05 by Community Development Services - rkg

R2 - Single Family
 R3 - Single- and Two-Family
 R4 - Medium Density Multiple-Family
 R5 - Medium High Density Multiple-Family
 R6 - High Density Multiple Family Residential
 MOR - Mixed Office Residential
 B3 - General Business
 B4 - Central Business
 B4 E - Central Business - Expansion

Existing Land Use - Aerial Photo

Exhibit "C"



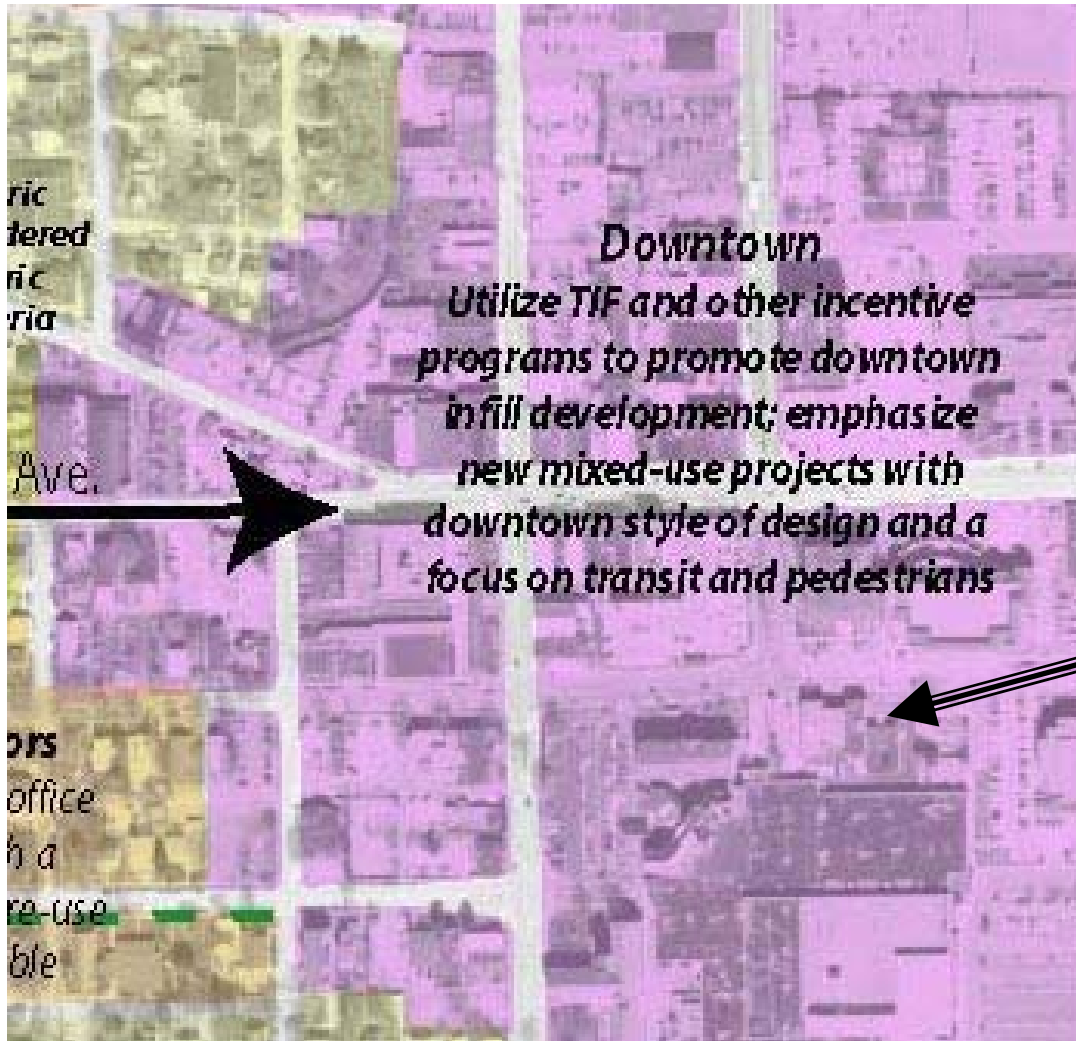
ZBA Case: 1961-SU-05
Petitioner: Independent Media Center
Location: 202 S. Broadway
Zoning: B-4, Central Business
Description:
Allow media tower in B-4 Zoning District

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Future Land Use

EXHIBIT "D"

Source: *Comprehensive Plan Future Land Use Map # 89, p.79 – Detailed Section*

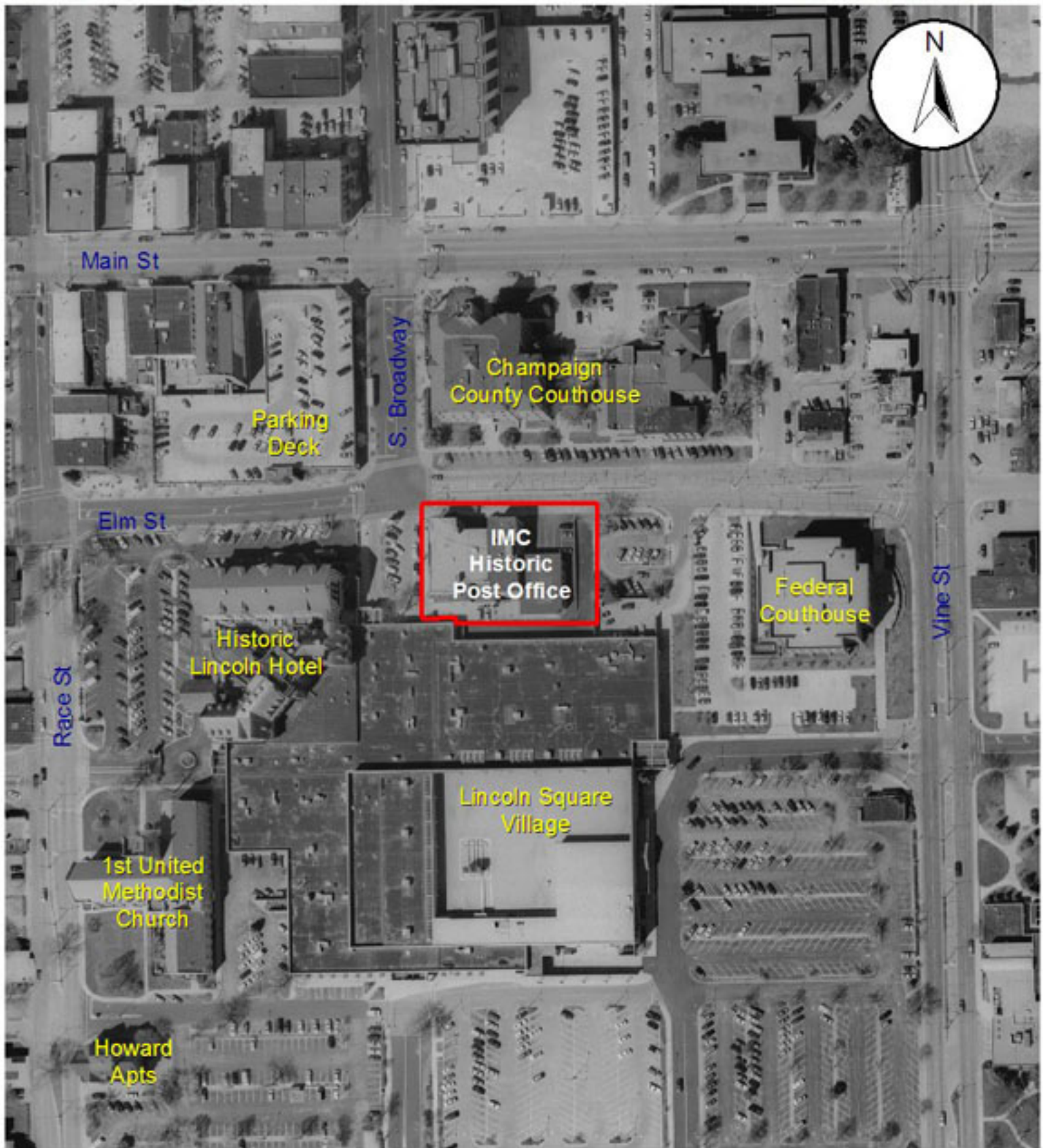


ZBA Case: 1961-SU-05
Petitioner: Independent Media Center
Location: 202 S. Broadway
Zoning: B-4, Central Business
Description:
Allow media tower in B-4 Zoning District

Prepared 8/01/05 by Community Development Services - pal

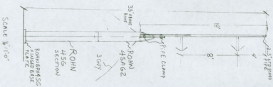
Aerial Photo

Exhibit "E"



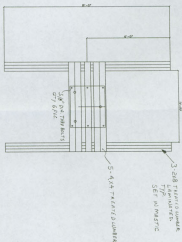
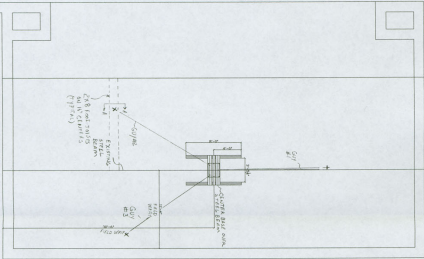
ZBA Case: 1961-SU-05
Petitioner: Independent Media Center
Location: 202 S. Broadway
Zoning: B-4, Central Business
Description:
Allow media tower in B-4 Zoning District

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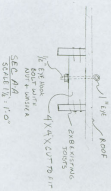


SCALE 1/2" = 1'-0"

TOWER PLACEMENT
15' x 15' BUILDING, 10' x 10' EXTERIOR



SCALE 1/2" = 1'-0"
TOWER BASE



SEC. A-A
SCALE 1/2" = 1'-0"

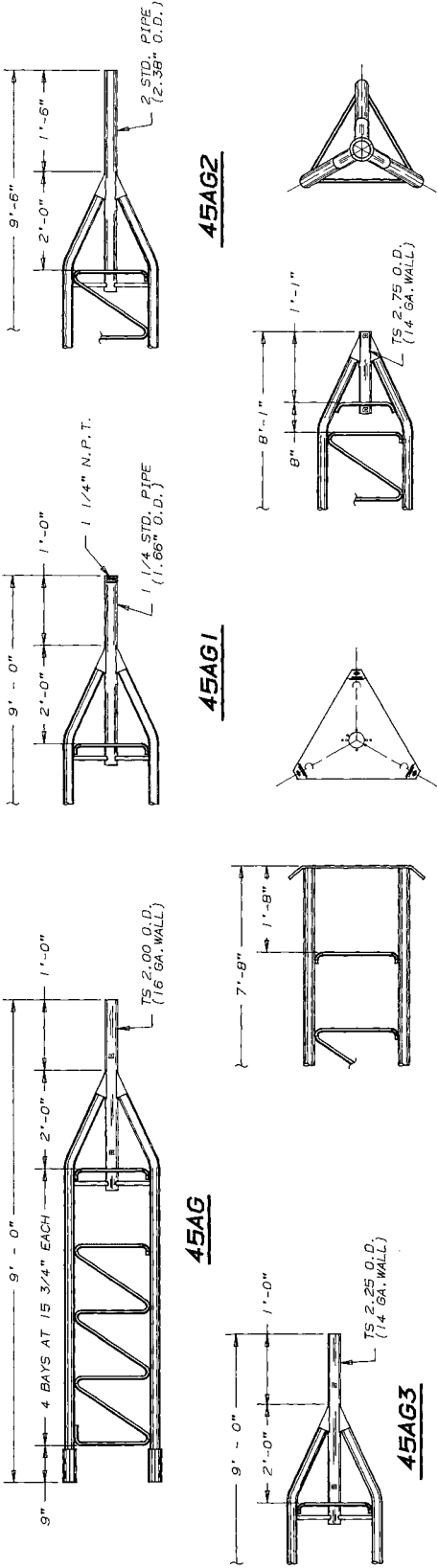
NOTES:

- DESIGN LOAD FOR TOWER LOAD
- LOAD SET. AND REDUCE ALLOWED
- TOWER SHALL BE CONCRETE IN PLACE WITH LOCAL AND APPROX. CRCS.
- A STEEL TOWER IS STRUCTURE SHALL TO MANUFACTURE ELEMENTS



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San Jose, CA 95128
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45AG

45AG1

45AG2

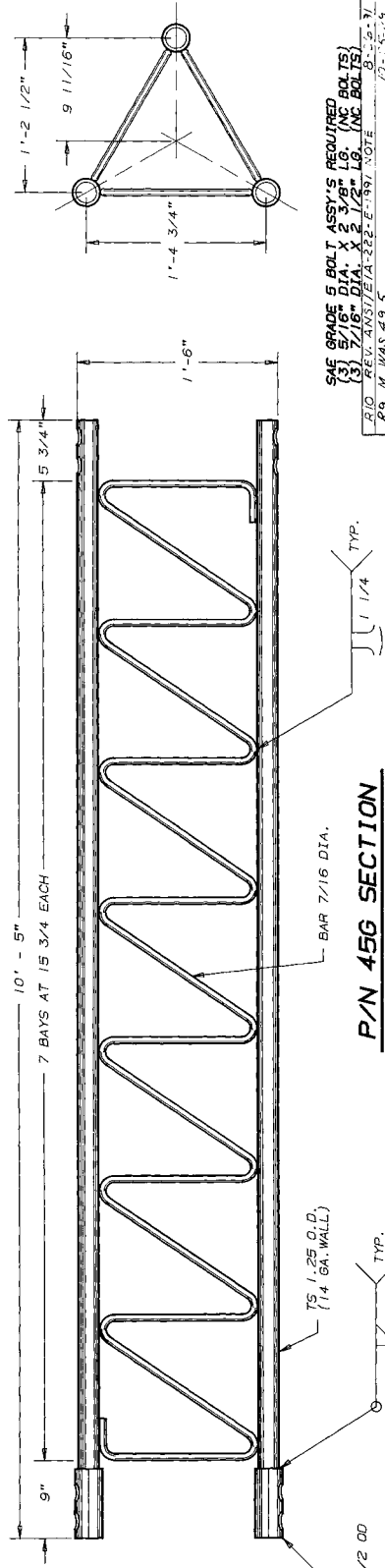
45AG3

45AG4

45AG5

NOTE: SPECIFICATIONS OF TOP SECTIONS ARE THE SAME AS SECTION NO. 45G EXCEPT AS NOTED ABOVE.

TYPICAL PLAN VIEW
(FOR ALL SECTIONS EXCEPT 45AG4)



P/N 45G SECTION

SAE GRADE 5 BOLT ASSY'S REQUIRED
(3) 5/16" DIA. X 3/8" LG. (NC BOL TS)
REV. 2/15/78 A-222-E-197 NOTE
R9 M WAS 4.9.5
RB REDRAWN AND REVISED SPEC. 02-13-88 GPW

ROHN

45G SECTION ASSEMBLY

Scale: NONE
 Drawn by: GPW
 Checked by: J.D.S.
 Approved by: Engineering
 Approved by: Production

Date: 2-24-88
 Date: 2-24-88
 Date: 2-24-88

Finish: NONE
 Material: NONE
 Weight: NONE

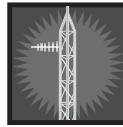
File Number: C630645 R 10

NOMENCLATURE

A = CROSS SECTIONAL AREA (SQUARE INCHES)
 C = COMPRESSION CAPACITY WITH 1/3 INCREASE IN ALLOWABLE STRESS (KIPS)
 I = MOMENT OF INERTIA ABOUT CENTROIDAL AXIS (INCHES⁴)
 F_y = MINIMUM YIELD STRENGTH (KSI)
 K = EFFECTIVE LENGTH FACTOR (DIMENSIONLESS)
 L = UNBRACED LENGTH (INCHES)
 N/A = NOT APPLICABLE
 S = ELASTIC SECTION MODULUS (INCHES³)
 T = TENSION CAPACITY WITH 1/3 INCREASE IN ALLOWABLE STRESS (KIPS)
 r = RADIUS OF GYRATION (INCHES)
 W = WEIGHT PER FOOT (POUNDS)
 W_s = WEIGHT PER SECTION (POUNDS)

NOTE: CAPACITIES SHOWN ARE BASED ON ANS1/EIA-222-E-1991.

ITEM	LEGS	BRACES	SECTION
SIZE	TS 1.25 O.D. 0.83 WALL	BAR 7/16 DIA.	N/A
F _y	50.0	36.0	N/A
A	0.3043	0.1503	.913
S	0.0833	0.0082	4.15
I	0.0521	0.0018	42.7
r	0.4136	0.1094	6.84
L	15.75	22.1	VARIES
K	1.0	0.70	1.0
K _L /r	38.0	14.14	VARIES
C	10.6	1.90	N/A
T	5.46	N/A	N/A
M	N/A	N/A	1.4
W	1.035	0.512	7.000
W _s	35.0	35.0	70.0



<p>P/N 456900040</p>	<p>P/N 456900050</p>	<p>P/N 456900060</p>	<p>P/N 456900070</p>	<p>P/N 456900080</p>	<p>P/N 456900090</p>	<p>P/N 45690D100</p>
						<p>P/N 45690D160</p>
<p>P/N 45690D110</p>	<p>P/N 45690D120</p>	<p>P/N 45690D130</p>	<p>P/N 45690D140</p>	<p>P/N 45690D150</p>	<p>P/N 45690D160</p>	

GENERAL NOTES

- TOWER DESIGN IN ACCORDANCE WITH APPROVED NATIONAL STANDARD ANSI/EIA-222-E-1991 (NO ICE)
- ALLOWABLE PROJ. AREA (50 FT.) FOR ROUND MEMBER ANTENNAS. EQUIVALENT FLAT-PLATE ANTENNA AREAS, BASED ON EIA RS-222-C. MUST NOT EXCEED THE AREAS SHOWN FOR FLAT MEMBER ANTENNAS. HAVING A TOTAL EFFECTIVE PROJECTED AREA EQUAL TO 8.0 SQUARE FEET. FOR SLOPE ARM DETAILS (P/N SA253UA). SEE DWG. C621662
- DESIGN ASSUMES ONE 1/2" & 7/8" DIA. LINES ON EACH TOWER FACE OF TOWER. DISTANCE 250 FEET AND 3 QUARTERS FROM TOWER FACE OF EFFECTIVE PROJECTED AREA FOR A BEACON (DEDUCT ONE 7/8" LINE FOR BEACON.)
- ANCHOR RADIUS IS FROM TOWER BASE TO INTERSECTION OF ROD WITH GROUND. TOWER DESIGNS AND GUY CHORD LENGTHS SHOWN ARE BASED ON LEVEL GROUND. ADD 6 PERCENT TO CHORD LENGTHS (FOR SAG AND CONNECTIONS) FOR FINAL AT 60 DEGREES FAHRENHEIT INITIAL TENSION FOR GUY WIRES IN POUNDS
- DO NOT INSTALL OR DISMANTLE TOWERS WITHIN FALLING DISTANCE OF ELECTRICAL AND/OR TELEPHONE LINES.
- TOWER ERECTION AND DISMANTLING MUST BE BY QUALIFIED AND EXPERIENCED TEMPORARY STEEL GUYS WHEN REQUIRED DURING ERECTION OR DISMANTLING.
- ALL ANTENNA INSTALLATIONS MUST BE GROUNDED IN ACCORDANCE WITH LOCAL AND NATIONAL CODES.
- INSTALL WARNING PLATE (P/N ACWS) IN A HIGHLY VISIBLE LOCATION.
- EXTRA CABLE CLAMPS HAVE BEEN PROVIDED FOR TURNBUCKLE SAFETY AND TO BE USED FOR INSTALLATION DETAILS SEE DWG. A87136E.
- FOR GUY HARDWARE INSTALLATION DETAILS SEE DWG. A87136E.

ANCHOR ROD SLOPE

ROD ANGLE IN DEGREES
 GROUND LINE
 FOR GUY CORN. DETAILS SEE DWG. NO. B620511
 SLOPE VERT. HOR.
 SLOPE HOR. VERT.

ANCHOR DATA
 REF. DWG.: BLOCK-C620643; ROD-C660415

TOWER HT.	REAC. LBS.	BLOCK NO.	ROD NO.	ROD ANGLE HOR.	SLOPE HOR. VERT.	REAC. LBS. VERT.
40'	3,730	4A	GAR30	44.5	12	11.9
50'	4,070	4A	GAR30	45.9	11.6	12.0
60'	4,590	4A	GAC303	42.5	12	11.0
70'	4,940	4A	GAC303	42.8	12	11.1
80'	5,360	4A	GAC303	43.1	12	11.2
90'	5,740	4A	GAC303	43.0	12	10.1
100'	6,490	4A	GAC303	40.8	12	10.4
110'	6,930	4A	GAC303	40.7	12	10.3
120'	7,260	4A	GAC345501	40.3	12	10.2
130'	7,690	4A	GAC345501	39.8	12	10.0
140'	8,140	4B	GAC345501	39.0	12	9.7
150'	8,560	4B	GAC345501	39.0	12	9.7
160'	9,490	4B	GAC345501	39.0	12	9.7

9-10-91 RKG
 Date Rev. By Ctd By Asgd By
 Revision Description
 THIS DRAWING IS THE PROPERTY OF ROHN, IT IS NOT TO BE REPRODUCED, COPIED OR TRACED IN WHOLE OR IN PART WITHOUT OUR WRITTEN CONSENT.
 Title: **R O H N**
 GUYING DETAILS FOR 40'-160' 45G TOWERS
 90 MPH BASIC WIND SPEED (NO ICE)
 Drawn: GRW 9-1-97
 Checked: WRF 9-30-97
 App. Eng.: RAM 10-1-97
 Scale: NONE
 By Date
 App. Sales: AE 2-12-98 ENG. FILE: CB7047B RI
 DRAWING NO.: CB7047B RI

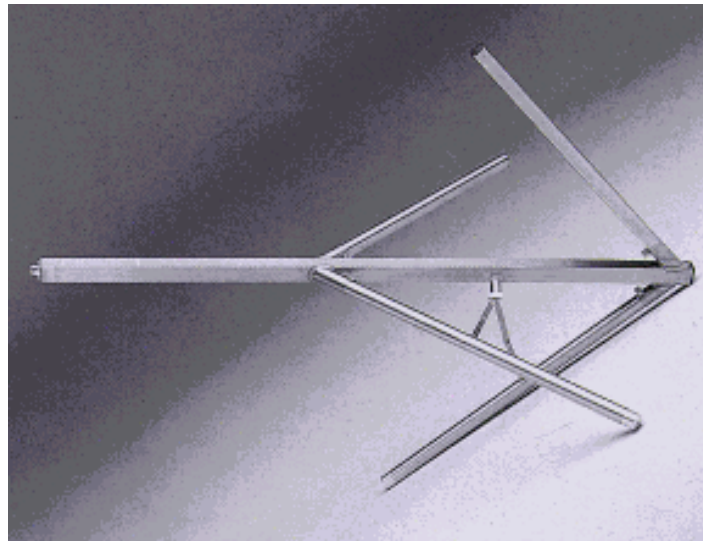


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Broadband FM Circular Polarization Antenna

Antena de FM Banda Ancha Polarizacion Circular

Model BKG/77



This antenna constructed completely of stainless steel offers the possibility of simultaneously utilizing vertical and horizontal polarization for better coverage especially in urban areas. In order to facilitate and decrease shipping costs this model is simple to break down and reassemble when ready to be installed. It is insulated with teflon and with the appropriate connector has a maximum input of 2 kW.

Esta antena fabricada completamente de acero inoxidable le ofrece la posibilidad de usar la polarización vertical y horizontal al mismo tiempo para mejor alcance, especialmente en zonas urbanas. Para facilitar y disminuir los costos de transportación este modelo es fácil de desarmar y volver a montar tan pronto que la quiera instalar. Está aislada con teflon, y con el conector apropiado tiene una entrada máxima de 2 kW.

TECHNICAL SPECIFICATIONS:

Antenna type	circular polarization dipole
Frequency Range	87.5 - 108 MHz
Bandwidth	16 MHz
Impedance	50 Ohms
Connectors	N type (1 kw) - 7/8 type (2 kw)
Power Rating	2000 Watts max
VSWR	< 1.3
Polarization	Vertical and Horizontal
Power Gain	0.47
H plane	omni-directional ± 1.5 dB (with a 4" mast)
V plane	omni-directional ± 3 dB (with a 4" mast)
Front-to-back ratio	3 dB
Lightning protection	all parts grounded
Max wind velocity	119 mph (190 km/h)
Wind load	53 Lbs (24 kg)
Wind Surface	0.11 yd ² (0.10 m ²)
Materials (external)	stainless steel
Mounting	from 2" to 4"
Weight	23.1 Lbs (10.5 kg)
Dimensions	58"x32"x32" (1450x800x800 mm)
Packing	72"x6"x6" (1500x152x152 mm)

BKG77 Antenna	Horizontal Pattern	Vertical Pattern	Value Table
Single Bay	Horizontal	Vertical	Table

2-Bay System	Horizontal	Vertical	Table
4-Bay System	Horizontal	Vertical	Table
6-Bay System	Horizontal	Vertical	Table
8-Bay System	Horizontal	Vertical	Table

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