

DESIGN REVIEW & PRESERVATION BOARD
1231 "T" Street - SACRAMENTO, CALIFORNIA 95814

APPLICANT	Mark III Engineering Contractors, 5101 Florin Perkins Rd., Sacramento, CA 95826		
OWNER	Panattoni, Oates and Massie, 8413 Jackson Rd., Sacramento, CA 95826		
PLANS BY			
FILING DATE	August 22, 1986	REPORT BY:	RH:tc
NEGATIVE DEC.	EIR	ASSESSOR'S PCL. NO.	006-106-05

APPROVED STAFF RECOMMENDATIONS

LOCATION: 1121 L Street

PROPOSAL: To place a Microwave Antenna on an Essential Structure

BACKGROUND INFORMATION: The applicant proposes to place a microwave receiving and transmitting dish on the roof of an Essential Structure. The structure is also on the National Register of Historic Places. The owners of this building have taken advantage of the tax benefits on the restoration of the Senator Hotel. Staff has contacted the State Office of Historic Preservation in regards to this particular proposed action.

PROJECT ELEVATION: The applicant proposes to place an earth station antenna on the roof of the Senator Hotel. The location would be on the western wing approximately centered on the roof. It would be south of and adjacent to the stairwell penthouse. The antenna when located at full height would be 17 feet above roof level. At the proposed 65 degree to horizon orientation of the dish, the antenna will be 13 1/2 feet above roof level. The parapet height above the roof around the perimeter of the building is five feet. The location of the antenna approximately 25 feet away from the parapet would preclude the unit being viewed from street level. Staff concerns with the antenna is that it should be as inconspicuous as possible when viewed from any structure with a site line above the roof of the Senator Hotel. In discussing the project with the State Office of Historic Preservation they feel that the proposed project is reversible and therefore no additional review by the State Office or the Department of Interior is required. They suggest that painting the exterior of the unit to make as inconspicuous as possible would be the best solution; staff concurs with their recommendation.

STAFF RECOMMENDATION: Staff recommends approval of the project with the following conditions:

1. The antenna unit and support base as well as the roof support are to be painted one color. This color is to be either a light tan to match the exterior color of the Senator Hotel Building, or a neutral gray that would blend into the general color surface of the roof.
2. A paint chip which represents the proposed color for the antenna to be painted is to be submitted to staff for review and approval.

Approval is based on the following findings of fact:

1. The project, as proposed, is in compliance with the Secretary of Interior Standards for Historic Preservation in that project will not cause irreversible damage to a structure listed on the National Register.

2. The project, as proposed, is in compliance with the Design Guidelines of the Preservation Board.
3. The project, as conditioned, would minimize the visual impact of the antenna structure with viewed from any site line above the roof level.

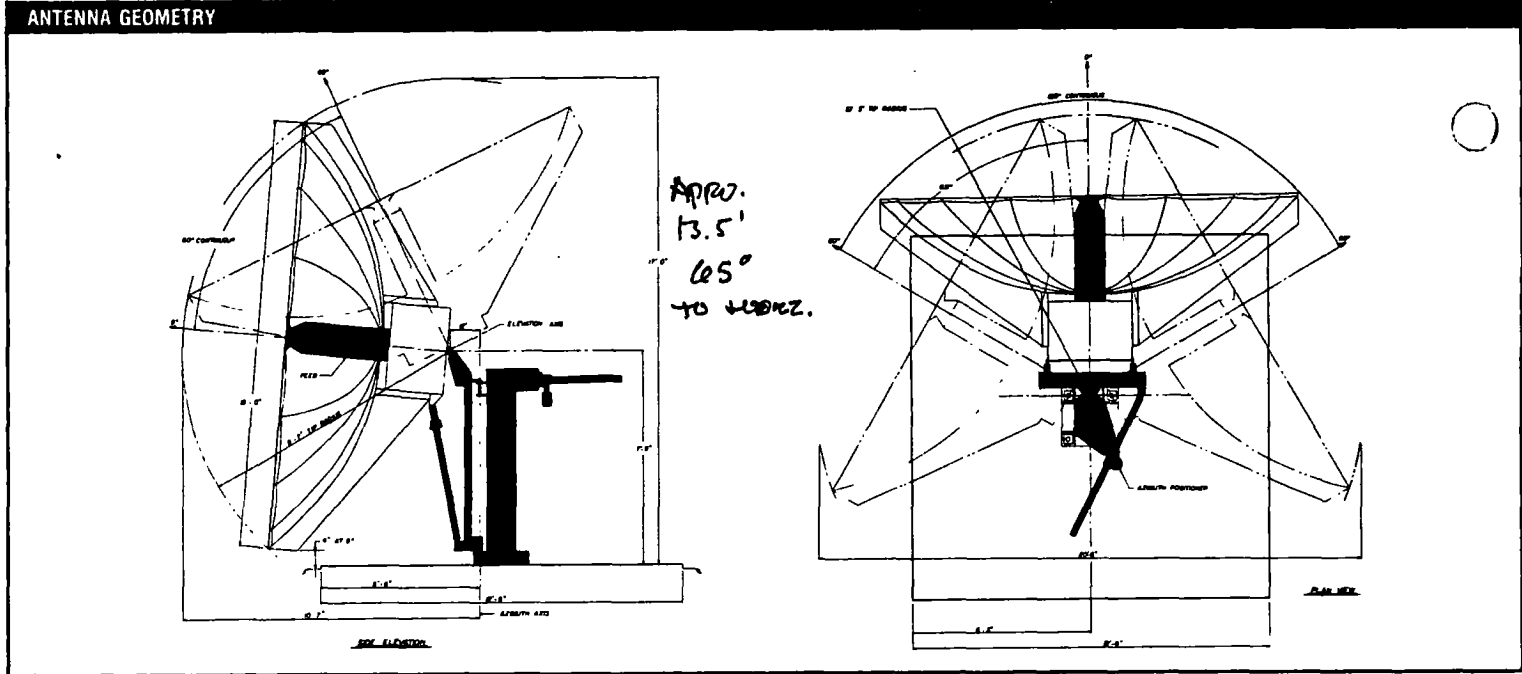
APPROVAL BY THE DESIGN REVIEW/PRESERVATION BOARD DOES NOT RELIEVE THE APPLICANT OF THE RESPONSIBILITIES TO MEET REQUIREMENTS OF ALL ZONING ORDINANCES AND BUILDING CODES.

THE APPLICANT IS RESPONSIBLE FOR ANY DELAYS RESULTING FROM NONCOMPLIANCE WITH CONDITIONS OF APPROVAL.

PERFORMANCE SPECIFICATIONS

R.F. SPECIFICATIONS	C-BAND			Ku-BAND			ENVIRONMENTAL SPECIFICATIONS
	RECEIVE	TRANSMIT		RECEIVE	TRANSMIT		
Frequency	3.7-4.2 GHz	5.925-6.425 GHz		11.7-12.2 GHz	14.0-14.5 GHz		Operational Winds
Typical Gain at Midband	44.0 dBi	47.1 dBi		53.2 dBi	54.5 dBi		45 mi/h (72 km/h) gusts to 60 mi/h (97 km/h)
VSWR	1.25:1	1.25:1		1.25:1	1.25:1		Survival Winds (Any Position)
Beamwidth	-3 dB	1.17°		0.37°	0.32°		125 mi/h (200 km/h) @ 50°F (15°C)
	-15 dB	2.36°		0.76°	0.64°		Ambient Temperature (Survival)
Antenna Noise Temperature at Midband	2 Port Feed	4 Port Feed		2 Port Feed	4 Port Feed		-20° to 60°C (-20° to 140°F)
5° Elevation	46°K	53°K		72°K	82°K		Rain (Operational and Survival)
10° Elevation	29°K	36°K		56°K	66°K		Up to 4 in/h (10 cm/h)
20° Elevation	23°K	30°K		47°K	56°K		Relative Humidity (Operational and Survival)
40° Elevation	19°K	26°K		43°K	53°K		0% to 100% with condensation
Typical G/T at 20° Elevation, Clear Horizon, 4 GHz							Solar Radiation
With 40°K LNA, dB/°K	25.5	25.2					360 BTU/h/ft² (1000 Kcal/h/m²)
With 100°K LNA, dB/°K	22.9	22.6					Radial Ice (Survival)
Typical G/T at 20° Elevation, Clear Horizon, 12 GHz							1 inch (2.5 cm) on all surfaces or 1/2 inch (1.3 cm) on all surfaces with 80 mi/h (130 km/h) wind gusts
With 250°K LNA, dB/°K				28.3	28.1		Shock and Vibration
With 190°K LNA, dB/°K				29.3	29.1		As encountered during shipment by commercial air, rail or truck
Power Handling Capability		5 kW/Port			1 kW**		Corrosive Atmosphere
Feed Interface	CPR-229G	CPR-229G	CPR-159G	WR-75 Choke	WR-75 Choke	WR-75 Flat	As encountered in coastal regions and/or heavily industrialized areas
Feed Insertion Loss	0.10 dB	0.15 dB	0.15 dB	0.3 dB	0.4 dB	0.3 dB	Seismic (Survival)
Port-to-Port Isolation: Tx to Rx	30 dB	30 dB	30 dB	30 dB	30 dB	30 dB	Mercalli X
Rx to Rx, Tx to Rx Linear (4 Port Feed)		30 dB	30 dB		30 dB	30 dB	
Rx to Rx, Tx to Rx Circular (4 Port Feed)		19 dB	19 dB		35 dB	35 dB	
Cross Polarization Isolation: On Axis	35 dB	35 dB	35 dB	35 dB	35 dB	35 dB	
Within 1 dB Beamwidth	30 dB	30 dB	30 dB	30 dB	30 dB	30 dB	
Axial Ratio (Circular Polarization): 2 Port Tx/Rx	2.2 dB						
4 Port Frequency Reuse		0.5 dB					
SideLobes: 1st SideLobe		-14 dB			-14 dB		
From 1st SideLobe to 7°		32-25 Log θ dBi			29-25 Log θ dBi		
1° to 7°					+ 8 dBi		
7° to 9.2°		32-25 Log θ dBi			32-25 Log θ dBi		
9.2° to 48°		32-25 Log θ dBi			-10 dBi		
48° to 180°		-10 dBi					

* Other Frequencies available
** Higher power optional



MECHANICAL SPECIFICATIONS

Azimuth Travel	120° continuous	Finishes:	
Azimuth Travel Rate	2.0°/second, variable	Reflector Surface	Aluminum panels with heat-diffusing white paint
Elevation Travel	5° to 65° continuous	Pedestal	Red oxide primer, and two coats of enamel
Elevation Travel Rate	1.0°/second, variable	Surface Accuracy	0.020 inch (.5 mm) Static
Polarization Travel	± 90°	Foundation Size	12.5 ft x 12.5 ft x 15 in (3.81 m x 3.81 m x 0.38 m)
Polarization Travel Rate	1.5°/second	Concrete Volume	7.25 cubic yards (5.5 m³)
Weight - Reflector	600 pounds (272 kg)	Reinforcing Steel	500 pounds (227 kg)
Weight - Pedestal	500 pounds (227 kg)	Soil Bearing Pressure	2,000 PSF (10,000 kg/m²)
Shipping Weight (Typical)	1,500 pounds (681 kg)		
Shipping Volume	250 cubic feet (7.1 m³)		



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VIEW WEST FROM 12TH E L



VIEW NORTH from
ROOF

ROOF



VIEW: EAST FROM
ROOF



VIEW. NORTH FROM
NORTH STEPS OF CAPITOL



VIEW: NORTH EAST FROM
ROOF