

**Master Planning Committee
of
University of Alaska Fairbanks**

MEMORANDUM

Date: August 14, 2009

To: Brian Rogers, Chancellor



Approved Date 8/24/09

From: Deb Horner, Vice-Chair 

Re: MPC Recommendation 2009-09 – Bartlett Hall Satellite TV
Antennas

On August 13, 2009, the Master Planning Committee discussed the attached Antenna/Equipment Placement Request. Although the equipment has already been installed for the purpose of improving reception on campus, MPC is formally reviewing the request. Reed Morisky from Facilities Services provided photographs of Bartlett Hall from different vantage points, demonstrating that the new equipment is barely visible. MPC passed the following recommendation (7 – 0):

“The Master Planning Committee approves the satellite TV antenna upgrade installation on Bartlett Hall.”

If you are in agreement with the MPC recommendation as stated above, please indicate your approval at the top portion of this document.

Dlm

Attachments (as stated)

University of Alaska Fairbanks
Facilities Services
Division of Design and Construction

ANTENNA / EQUIPMENT PLACEMENT REQUEST FORM

This request is for placement of a free standing or on-building antenna or other scientific equipment on the UAF campus grounds or buildings in accordance with DD&C UAF campus design standards. Requests must include the approved funding and maintenance sources at time of submission

All matters pertaining to placement of antennas and scientific equipment for the campus are subject to review and consideration by the appropriately designated User organizations or committees, including UAF Master Planning Committee and Facilities Services Division of Design and Construction, and the requesting department, organization, or entity.

Completion of this form should not be construed to imply that antenna or scientific equipment placement is approved. The attached Antenna Placement Approval Flow Chart must be successfully completed prior to any construction or placement.

Building/Facility: Bartlett Hall
Proposed
Location: Roof

Facility Inventory No: FS 732

Date: 7/16/2009

Requested By: REED MORISKY
(FOR LINDA STANLEY)

Depart./Organization: _____

Antenna or Equip. Funded By: ApogeeNet

Account Number: PER FAC MOD

Installation Funded By: Apogee Net

Account Number: _____

Proposed Site Plan:

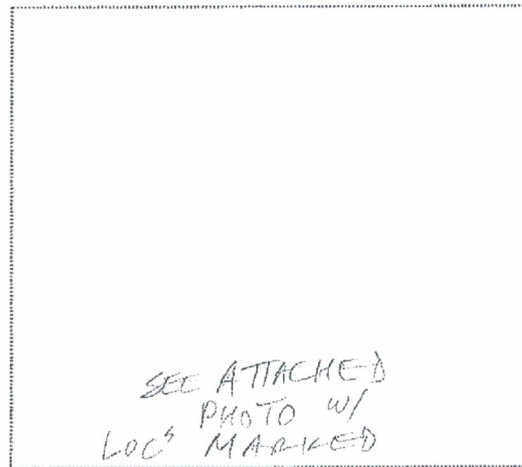
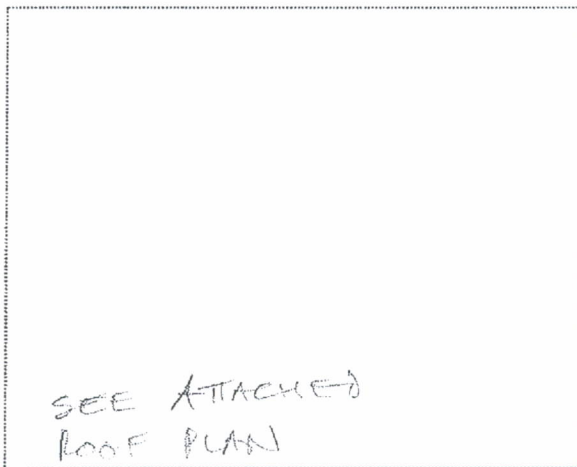
north

west ridge NSF area upper / lower campus campus core

+

south

Location description: Roof Bartlett Hall



(Sketch site plan or attach drawing here or 2nd page)

(Attach site photograph here or 2nd page)

Justification for Antenna/Equipment Placement Request: CATV Upgrade

Description of Demolition/Removal Plan & current Funding for Same: None required

By: RES LIFE Title: — Date: 7-24-09 Phone: _____
for LINDA STANLEY

(BY: FS/DDC R. MORISKY X 5856/CELL 460-6371)

University of Alaska Fairbanks
Facilities Services
Division of Design and Construction

The following components will be installed on the roof of . Technical literature on each is attached.

- a. 1 each Type 120 ASC Signal 1.2M satellite antenna
- b. 1 each Prodelin model 3120 1.2M satellite antenna
- c. 2 each ASC Signal non penetrating roof mount for the above antennas
- d. One Winegard model 7694 VHF/UHF broadcast antenna on an existing mast
- e. 3 runs of dual RG-6 with ground from the antennas through an existing wall penetration into a penthouse.

Each mount for the 1.2M antennas will be ballasted with eighteen (16) 8x8x16 concrete blocks to prevent sliding or overturning in winds up to 125 mph. Each antenna will be grounded as specified in the National Electric Code using a 17 gauge copper ground wire that is attached to the RG-6 cabling using U/L approved ground blocks. The RG-6 transmission lines will then be routed to the basement head end room using existing conduits.

Series 3670, 3980, 3120

Ka Band Specification Sheet

Technical Specifications

Electrical		Series 3670	Series 3980	Series 3120
Antenna Size		67CM	.98 M	1.2 M (120 CM)
Operating Frequency (GHz)	Receive	19.7 - 20.2 GHz	19.7 - 20.2 GHz	19.7 - 20.2 GHz
	Transmit	29.5 - 30.0 GHz	29.5 - 30.0 GHz	29.5 - 30.0 GHz
Midband Gain (± .2dB)	Receive	41.0 dB	44.3 dB	46.3 dB
	Transmit	44.5 dB	47.8 dB	49.9 dB
Sidelobe Envelope Mainbeam				
Mainbeam < θ < 7°		29-25 Log θ dBi	29-25 Log θ dBi	29-25 Log θ dBi
7° < θ < 9.2°		+8 dBi	+8 dBi	+8 dBi
9.2° < θ < 48°		32 -25 Log θ dBi	32 -25 Log θ dBi	32 -25 Log θ dBi
48° < θ < 180°		-10 dBi	-10 dBi	-10 dBi
Antenna Noise Temperature	20°	47° K	45° K	44°K
	30°	44° K	42° K	41° K
Polarization		Circular or Linear	Circular or Linear	Circular or Linear
TX/RX Isolation w/ TRF		85 dB	85 dB	85 dB
Axial Ratio (Circular)		2.3 dB	2.3 dB	2.3 dB
Feed Interface	RX	WR42	WR42	WR42
	TX	WR28	WR28	WR28
Insertion Loss		<0.4dB	<0.4dB	<0.4dB
Cross-Pol Isolation (linear)		>30 dB (on axis)	>30 dB (on axis)	>30 dB (on axis)
VSWR		1.3:1 Max.	1.3:1 Max.	1.3:1 Max.

Mechanical

Reflector Material	Glass Fiber Reinforced Polyester SMC, Ka-Band Formulation
Antenna Optics	Prime Focus, Offset Feed
Mount Type	Elevation over Azimuth
Mast Pipe Size	2.5" SCH 40 Pipe (2.88" OD) 73.2 mm
Elevation Adjustment Range	5° to 90° Continuous
	Fine Adjustment
Azimuth Adjustment Range	360° Continuous, ± 10° Fine

Environmental Performance

Wind Loading	Operational	45 mph (72 km/h)
	Survival	125 mph (201 km/h)
Temperature	Operational	-40° to 140° F (-40° to 60° C)
	Survival	-50° to 160° F (-46° to 71° C)
Rain	Operational	1/2" /hr
	Survival	2" /hr
Ice	Operational	---
	Survival	1/2" radial
Atmospheric Conditions		Salt, Pollutants and Contaminants as Encountered in Coastal and Industrial Areas
Solar Radiation		360 BTU/h/ft²

GENERAL DYNAMICS

C4 Systems

1500 Procline Drive ■ Newton, NC 28658 ■ Tel 828-464-4141 ■ Fax 828-466-0860 ■ www.gdsatcom.com

3670 3980 3120 Ka band.indd



PRODUCT SPECIFICATIONS

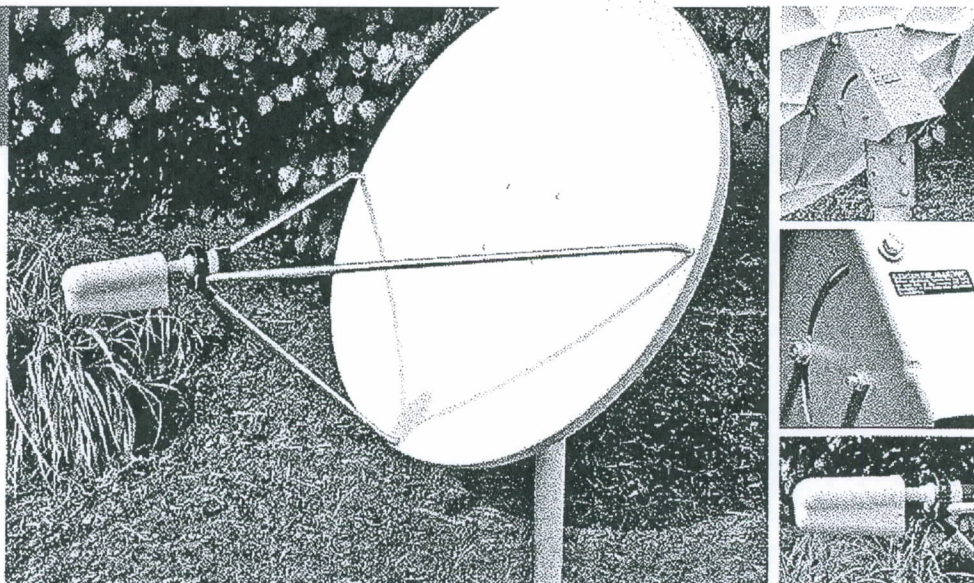
Detail Photos

(on right from top to bottom)

Pre-assembled Az/EI Mount

Fine-elevation adjustment
with stamped degree scale

Ku feed assembly with LNB
cover



1.2 m Receive-Only Antenna System (47.24" ϕ)

TYPE 120

The reflector is thermoset-molded for strength and surface accuracy.



The ASC Signal 1.2 m Type 120 Offset Antenna is a rugged commercial grade product suitable for the most demanding applications. The reflector is thermoset-molded for strength and surface accuracy. Molded into the rear of the reflector is a network of support ribs which not only strengthens the antenna, but also helps to sustain its critical parabolic shape.

The Az/EI mount is constructed from heavy-gauge steel to provide a rigid support to the reflector. The Az/EI mount secures the antenna to any 73-76 mm (2.88"-3.00") O.D. mast and prevents slippage in high winds.

A specially formulated powder paint process offers excellent protection from weather-related corrosion.

- All materials comply with EU directive No. 2002/95/EC (RoHS).
- One-piece thermoset-molded offset reflector.
- Single bolt fine elevation adjustment.
- Galvanized 19 mm (.75") O.D. feed support legs.
- Factory pre-assembled Az/EI mount.
- Plated hardware for maximum corrosion resistance.
- Available with a wide variety of C-band or Ku-band feeds.

SPECIFICATIONS

Type 120 1.2 m Receive Only Antenna System

RF Performance

	C-band	Ku-band
Effective Aperture	1.2 m (48 in)	1.2 m (48 in)
Operating Frequency	3.4 - 4.8 GHz	10.95 - 12.75 GHz
Polarization	Linear (Circular Optional) ..	Linear (Circular Optional)
Gain @ 3.95/11.95 GHz...	32.0 dBi	42.0 dBi
3 dB Beamwidth	4.4°	1.6°
Antenna Noise Temperature @ 30° Elevation	32° K	24° K
VSWR	1.3:1	1.4:1
Antenna Cross Polarization	30 dB on Axis (Linear) ..	30 dB on Axis (Linear)
Feed Interface	CPR-229	WR75 Flat Flange

(All specifications typical)

Mechanical Performance

Reflector Material	Glass Fiber Reinforced Polyester
Antenna Optics	One-Piece Offset Feed Prime Focus
Mount Type	Elevation over Azimuth
Elevation Adjustment Range	10° - 70° Continuous Fine Adjustment
Azimuth Adjustment Range	360° Continuous
Mast Pipe Interface	73 - 76 mm (2.88 in - 3.00 in) Diameter
Wind Loading	Operational 80 km/h (50 mph) Survival 200 km/h (125 mph)
Temperature	-50°C to 80°C
Humidity	0 to 100% (Condensing)
Atmosphere	Standard Hardware Meets 500 Hour Salt Spray Test Requirements (ASTM B-117)
Solar Radiation	360 BTU/h/ft ²
Shock and Vibration	As Encountered During Shipping and Handling



ASC Signal Corporation
620 North Greenfield Parkway
Garner, NC 27529 USA

Telephone: +1-919-329-8700
Fax: +1-919-329-8701

Internet: www.ascsignal.com

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[Ask Vincor™](#) [73 mm \(2.88"\) O.D. mast and a 1.6 m x 1.6 m \(63" x 63"\) base when assembled](#)

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[9.1M](#)

Our Price:

Call or submit RFQ for fast pricing!

Qty: 1

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Product Code: ASC-6110063-04

Description [Additional Product Specs](#)

The ASC Signal 6110063-04 commercial non-penetrating roof mount has been specifically designed for our line of antennas from 96 cm to 1.2 m.

Mechanically tested and field proven, this mount provides the performance necessary for demanding transmit applications. The non-penetrating roof mount is designed to be used on a flat roof and has provisions for concrete block ballast. The mount components are pre-galvanized steel with plated, polymer-coated hardware for excellent corrosion resistance.

Vincor's recommended products with this purchase

[Andrew® / ASC Signal™](#)
[SmART-AD™ 1.2 Meter](#)
[Auto Acquisition Satellite](#)
[ESA System](#)

Price: \$25,000.00

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Features

- For installations up to 125 mph survival.
- Includes rubber roof pads.
- Tray type mount. Use cored or solid blocks.
- Ballast tailored to site requirements.
- UPS shippable single carton packaging.
- Pre-galvanized construction.

[Andrew® / ASC Signal™](#)
[1.2 m LFL RxTx Class I](#)
[Antenna System](#)
[Type 123](#)

Our Price:

Configure model in RFQ

- 500 hour salt spray hardware.
- All materials comply with EU directive No. 2002/95/EC (RoHS).

CartAdd Andrew® / ASC Signal™SMART-AD™ 1.2 MeterAuto Acquisition SatelliteESA System including 3watt BUC**Price: \$25,000.00**Add Andrew® / ASC Signal™1.2 m LFL RxTx Class IIAntenna SystemType 123**Our Price:****Configure model in RFQ****Cart**Add Andrew® / ASC Signal™1.2 m Receive-OnlyAntenna SystemType 120**Our Price:****Configure model in RFQ****cart**Add Andrew® / ASC Signal™1.2 m SFL RxTx Class IAntenna SystemType 120**Our Price:****Configure model in RFQ****Cart**Add 

Jonathan T. Shambare

From: Terry Rahlfs [fntlr@uaf.edu]
Sent: Friday, July 17, 2009 1:13 PM
To: Jonathan T. Shambare
Subject: FW: Antenna request information
Attachments: antenna request.doc; 3670 3980 3120 Ka Band.pdf; Type120RXO.pdf; UAF NPR Specs.pdf; IMG_1462.JPG; IMG_1463.JPG; IMG_1465.JPG; IMG_1466.JPG; IMG_1467.JPG

FYI

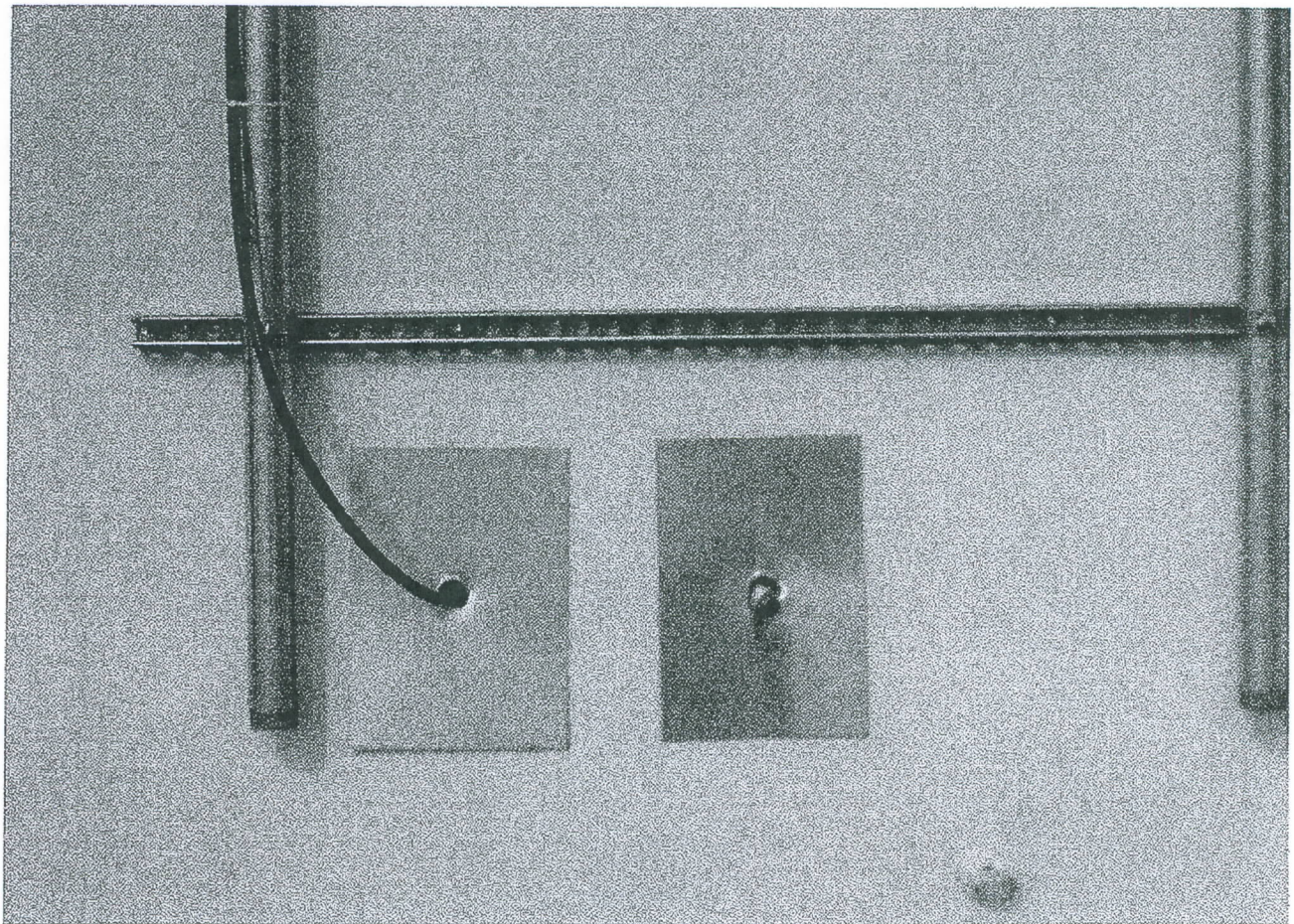
Terry Rahlfs
Procurement Officer - UAF
Ph: 907.474.6471
Fax: 907.474.7720
Email: fntlr@uaf.edu

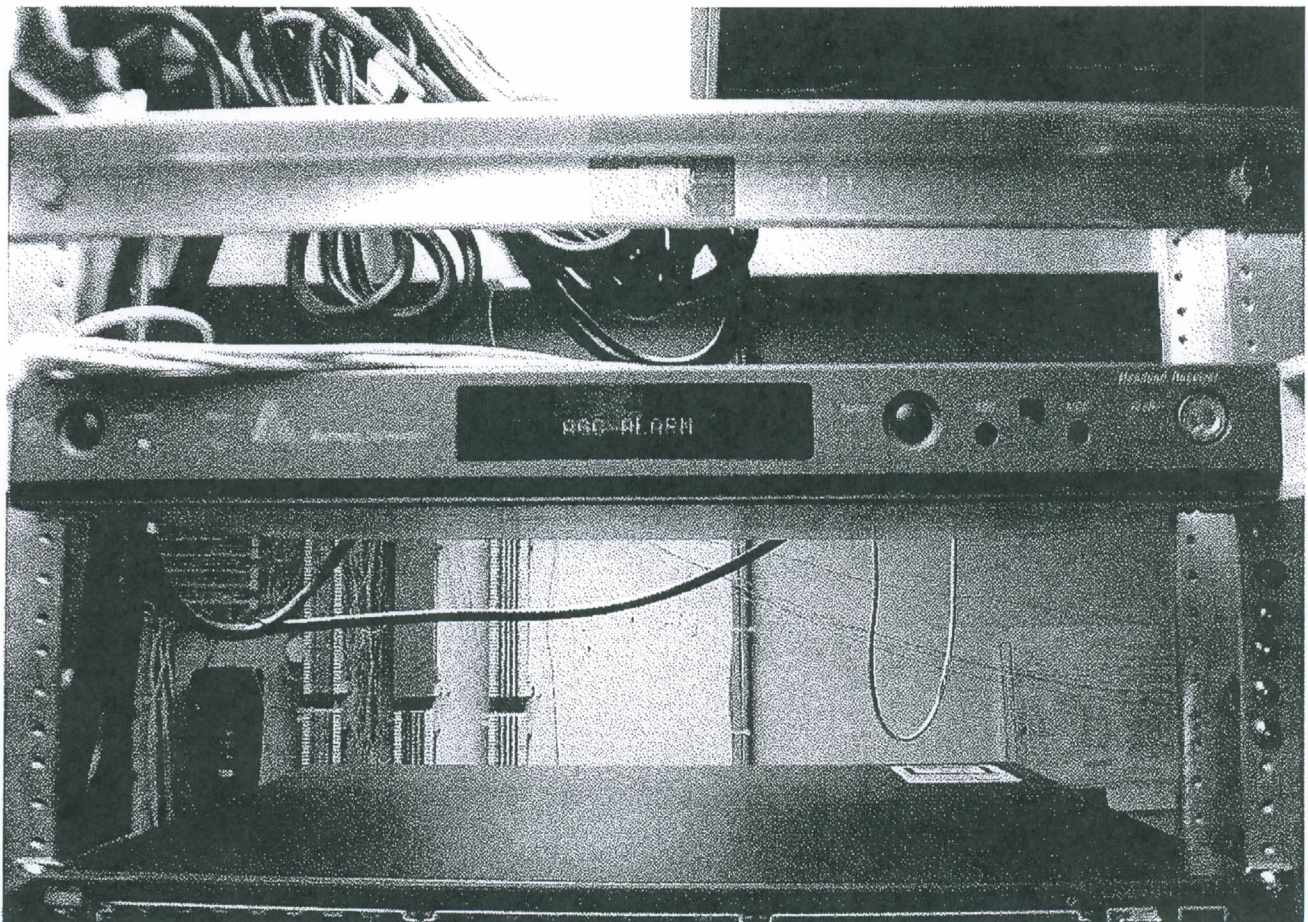
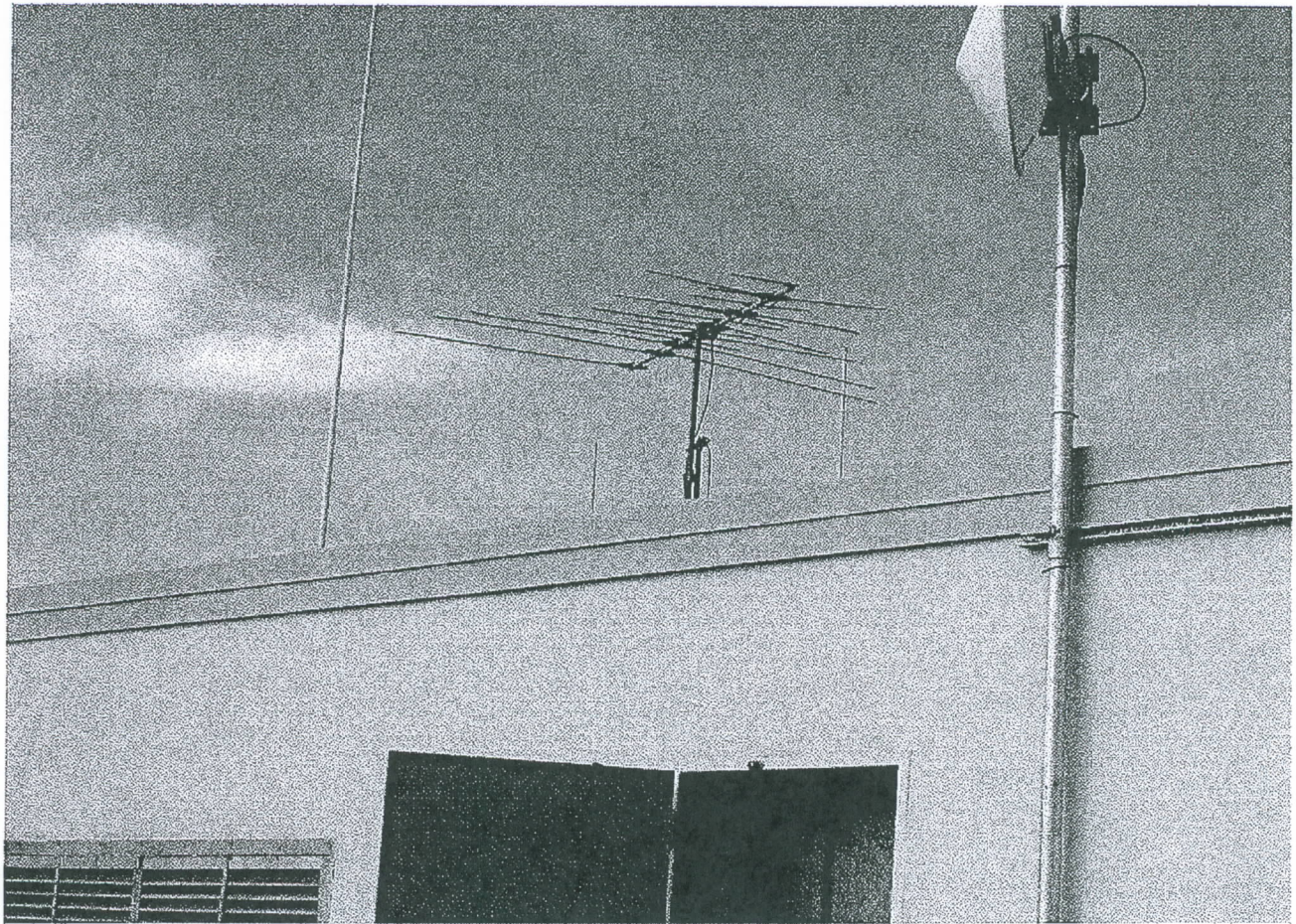
From: Dungan, Robert [mailto:rdungan@apogeenet.net]
Sent: Thursday, July 16, 2009 5:38 PM
To: Terry Rahlfs
Cc: Dungan, Robert
Subject: Antenna request information

Please see attached and let me know if I can be of any assistance.

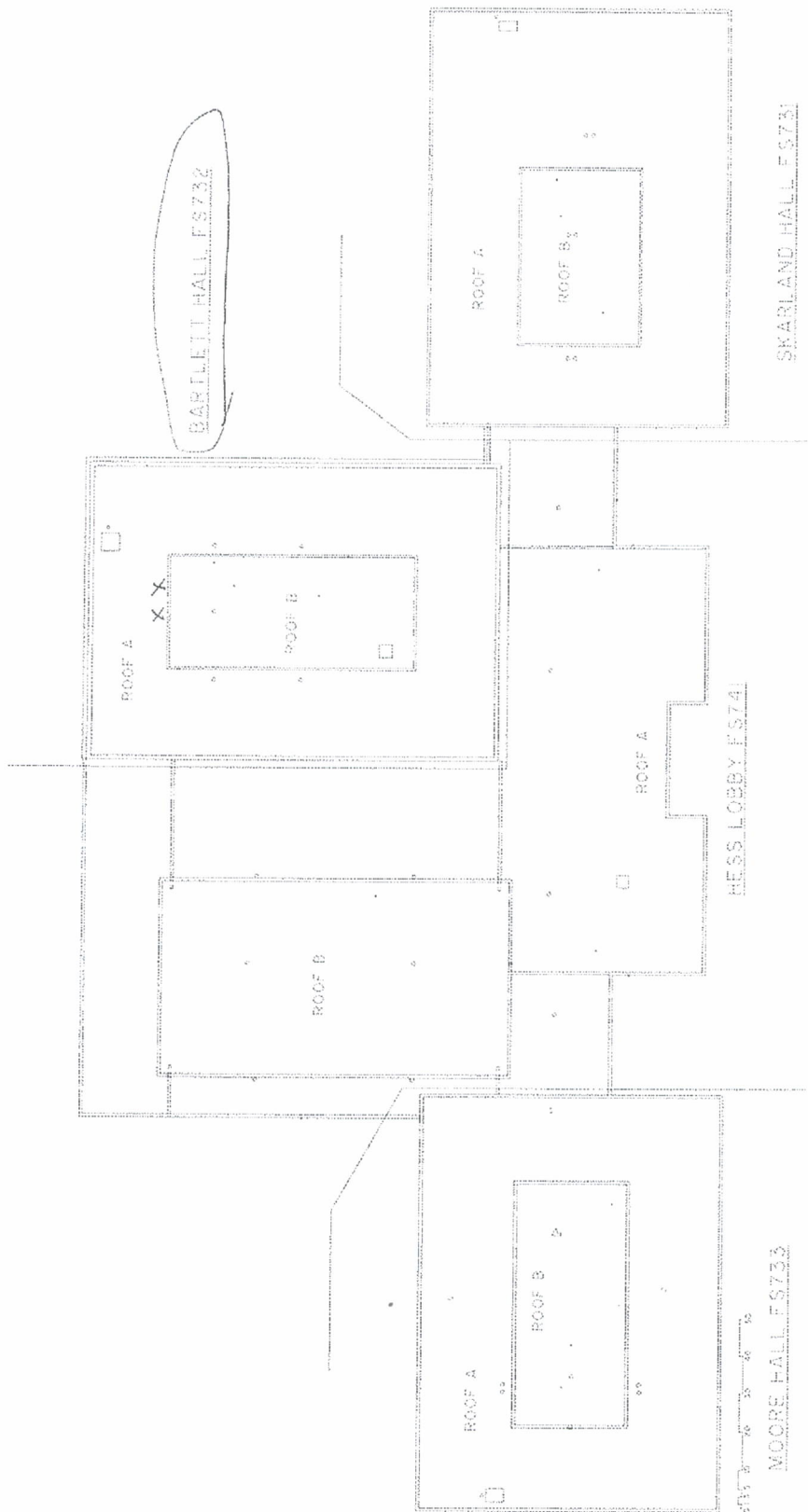
Thank you,
Robert Dungan
877-478-8858 Ext 176

www.Apogeenet.net

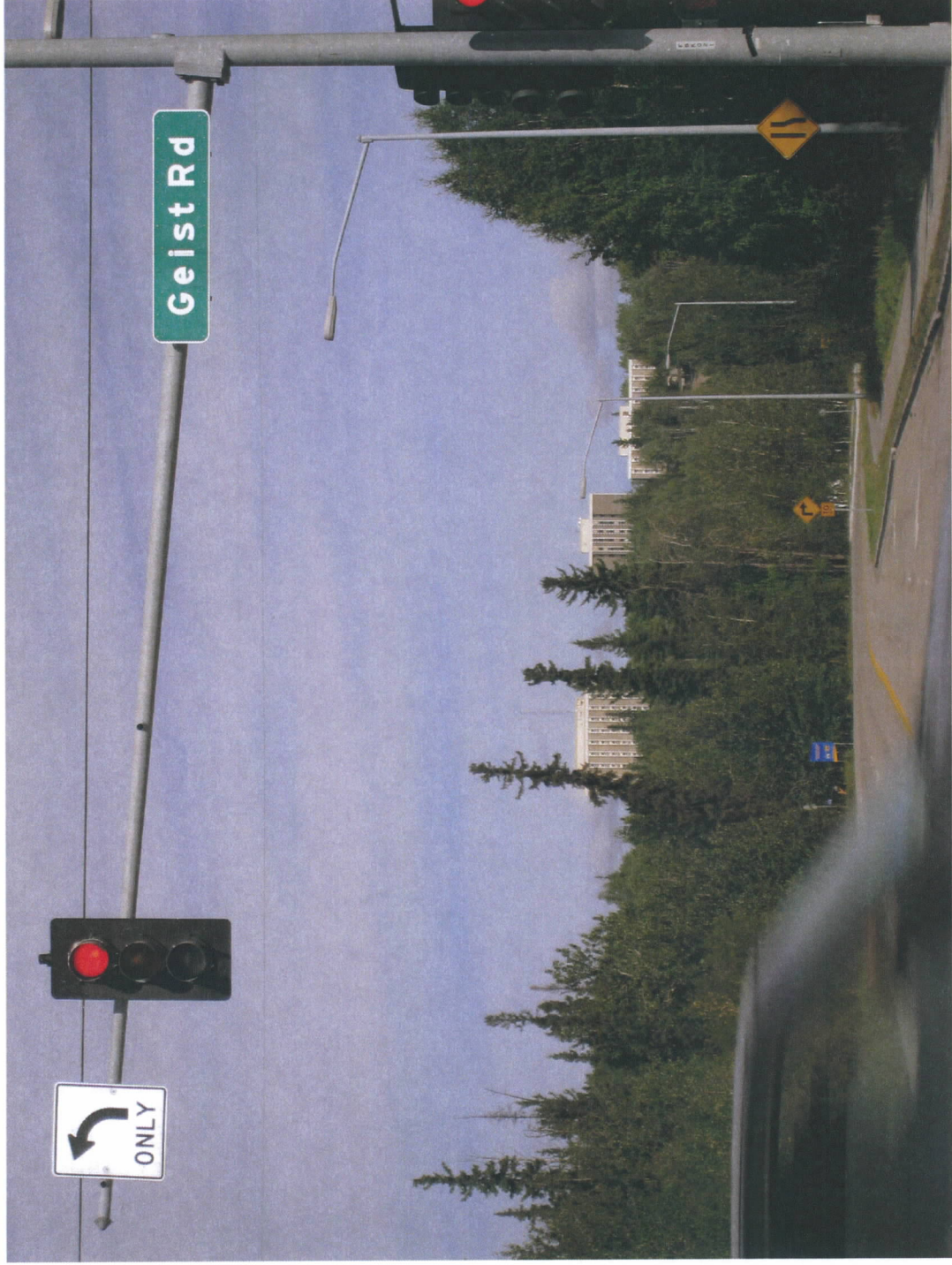




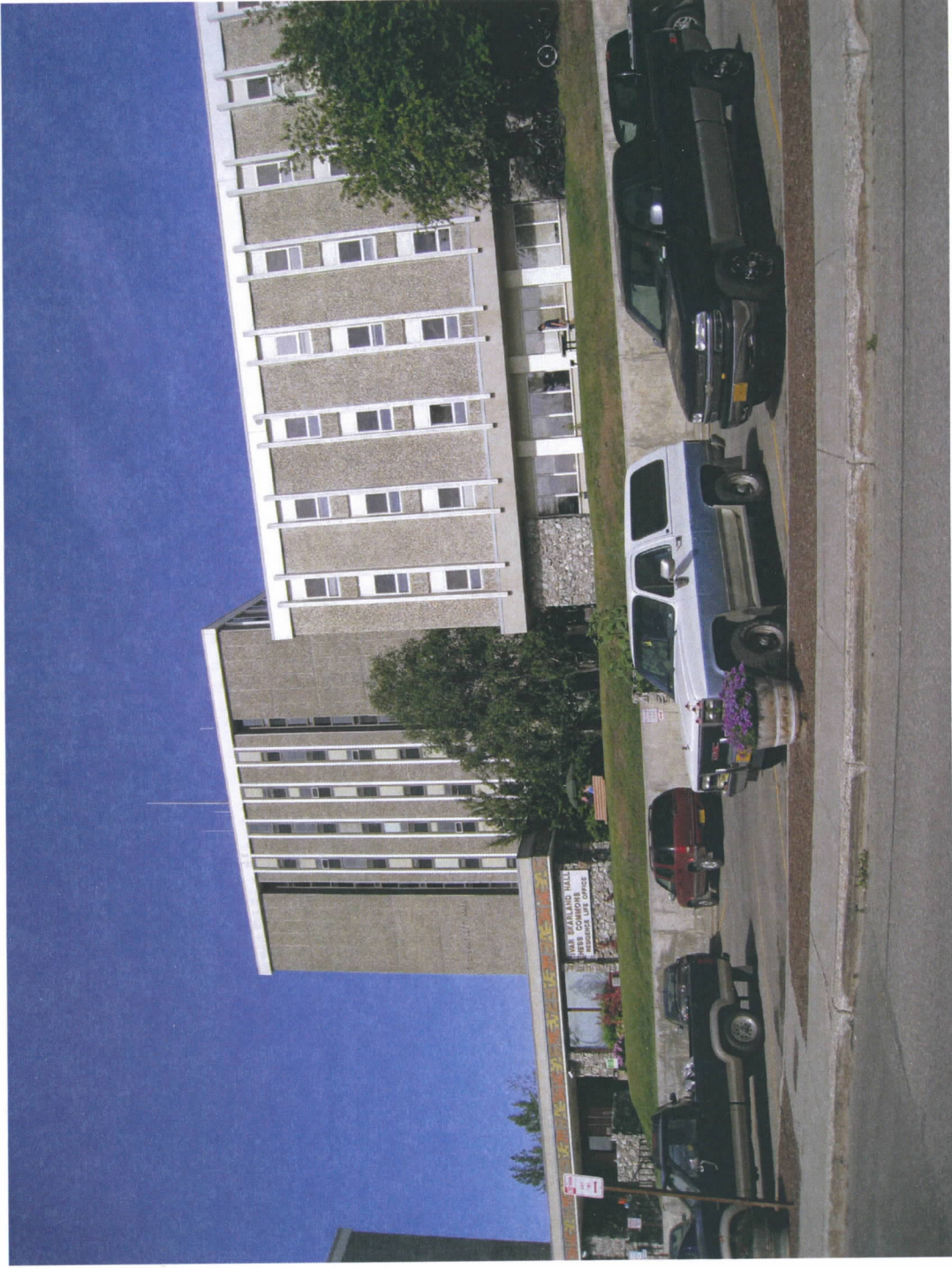
X = Dish Location



ROOF PLAN



From Geist and Fairbanks St. Intersection



View from Yukon Drive



View from Tanana Loop



From lot 4A, adjacent to Tanana Loop