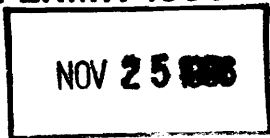


City of Portland, Maine – Building or Use Permit Application 389 Congress Street, 04101, Tel: (207) 874-8703, FAX: 874-8716

Location of Construction: <u>One City Center</u>		Owner: <u>One City Center Associates</u>	Phone: <u>775-4482</u>	Permit No: 961164
Owner Address:		Leasee/Buyer's Name:	Phone:	BusinessName:
Contractor Name: <u>Communications Link</u>		Address: <u>Rear 770 Water Street, Framingtonham, MA</u>		Phone: <u>508-788-0909</u>
Past Use: <u>Office bldg</u>	Proposed Use: <u>Same w/comm-satelite Antenna</u>	COST OF WORK: <u>\$3,000,00</u>	PERMIT FEE: <u>\$35,00</u>	<div style="border: 2px solid black; padding: 5px; text-align: center;"> PERMIT ISSUED  CITY OF PORTLAND Zoning Approval: <u>OK RE: Sec 17-430</u> Special Zone or Reviews: <input type="checkbox"/> Shoreland <input type="checkbox"/> Wetland <input type="checkbox"/> Flood Zone <input type="checkbox"/> Subdivision <input type="checkbox"/> Site Plan maj <input type="checkbox"/> minor <input type="checkbox"/> mm <input type="checkbox"/> 11/20/96 </div>
		FIRE DEPT. <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Denied	INSPECTION: Use Group: <u>CL</u> Type: <u>CL</u>	
Proposed Project Description: <u>Install a a 1.8M Satelite Antenna</u>		PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.) Action: Approved <input type="checkbox"/> Approved with Conditions: <input type="checkbox"/> Denied <input type="checkbox"/>		
Permit Taken By: <u>Vicki Dover</u>		Date Applied For: <u>11/18/96</u>		

- This permit application doesn't preclude the Applicant(s) from meeting applicable State and Federal rules.
- Building permits do not include plumbing, septic or electrical work.
- Building permits are void if work is not started within six (6) months of the date of issuance. False information may invalidate a building permit and stop all work..

MAIL TO: Communications Link
Rear 770 Water Street
Framington, MA 01701

CERTIFICATION

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the application issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provisions of the code(s) applicable to such permit

Michael Burns Rear 770 Water Street, Framingtonham MA 01701
SIGNATURE OF APPLICANT Mike Burns ADDRESS: DATE: PHONE:
Communications Link

RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE PHONE:

White-Permit Desk Green-Assessor's Canary-D.P.W. Pink-Public File Ivory Card-Inspector

Zoning Appeal

Variance
 Miscellaneous
 Conditional Use
 Interpretation
 Approved
 Denied

Historic Preservation

Not in District or Landmark
 Does Not Require Review
 Requires Review

Action:

Approved
 Approved with Conditions
 Denied

Date: 11/20/96

D. Andrews

CEO DISTRICT 2
A. Rowe

COMMENTS

OK AL

	Inspection Record	
	Type	Date
Foundation:	_____	_____
Framing:	_____	_____
Plumbing:	_____	_____
Final:	_____	_____
Other:	_____	_____

3490 Piedmont Road
Atlanta, GA 30305-1743
Telephone: 404/262-1555
800/877-7802 (On-site call-ins only)



EARTHSTATION SITE SURVEY REPORT

A. Site Information

Customer: MCI Survey Date: 8.23.96
Address: CITYCENTER, 4th FLOOR City/State: PORTLAND, ME 04101
Site Contact: PRICILLA SORENSON Phone #: (800) 284-3004

B. Landlord Information

Is building customer owned? Y N If no, advise the following:
Landlord Company Name: CITYCENTER Contact Name: JIM OPENMOLL
Address: CITYCENTER 3RD FLOOR City/State: PORTLAND, ME
Landlord Phone # (207) 775-4482
Name/Ph.# of Landlord contact present during survey? SECURITY
Does landlord approve of all suggested antenna locations? Y N. If no, advise specific objections?
LEFT SURVEY WITH LIL, - THEY WILL REVIEW

C. Building Information

Describe building age/construction material: 10 YEARS, STEEL FRAME
Building height from ground level 156 Ft. Number of floors 12 + penthouse
Building type: Office building Shopping mall Industrial park Other
 Obtain building plans and applicable structural drawings during survey for antenna location(s). If unavailable, name/phone number for person who can provide drawings: _____

D. Network Satellite Information

Network Satellite: _____ Single Pole or Dual Pole.

E. Antenna Mount Alternatives

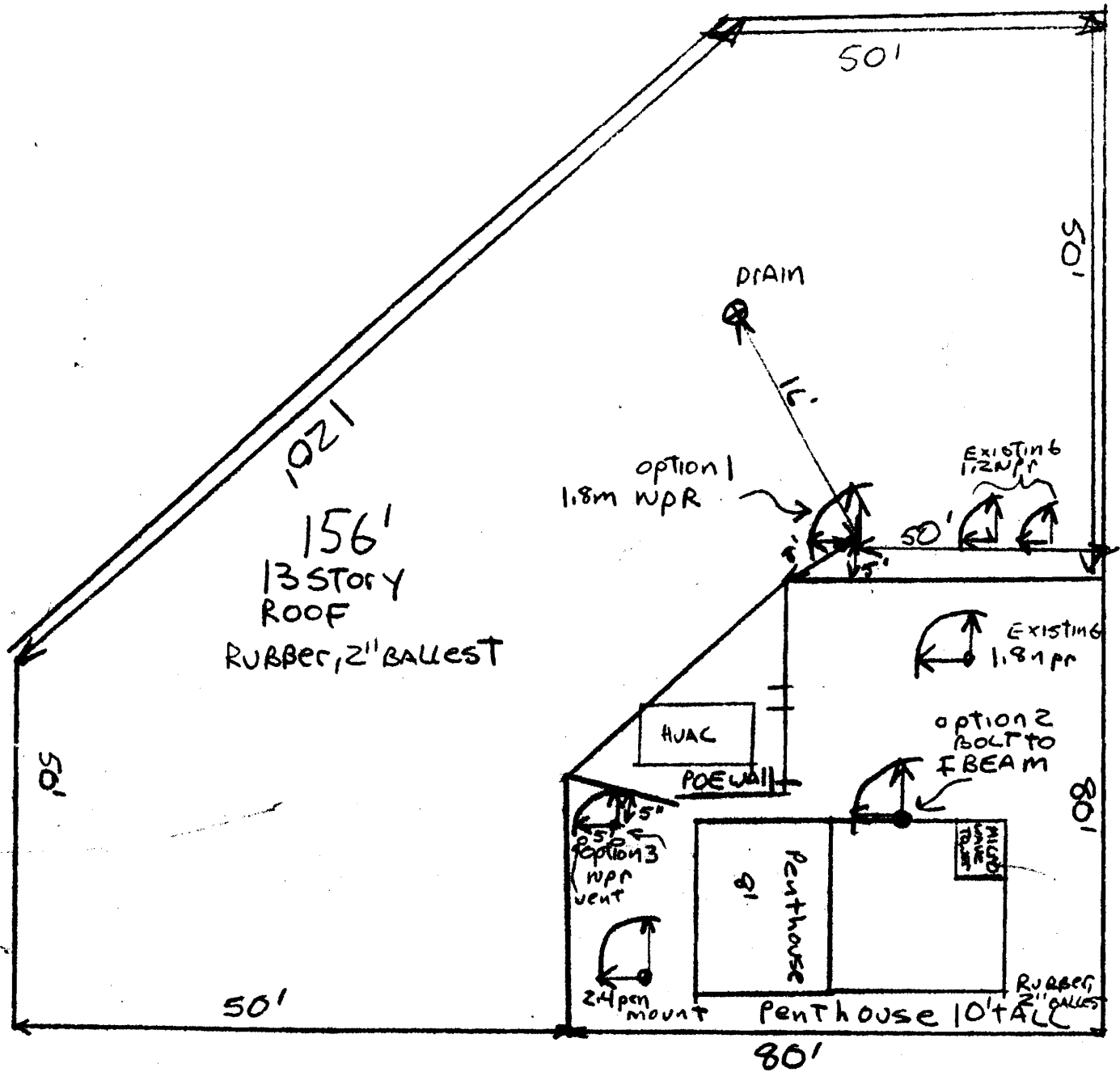
NPR MOUNT Rank landlord preference for mount & location? 1 2 3 4
Height of roof from ground level? 156 Ft.
Roof construction? Membrane Built-up (tar/gravel) Concrete slab
 Other, describe _____
Support structure under roof mount location? Wood frame
 Steel I-beam Steel joist construction Other, describe _____
Is Bonded Roofer required? Y N. If yes, name/ph. # of building's Bonded Roofer? _____
CAN USE EXISTING POE IN WALL

Will antenna/mount fit through all entry doorways to roof? Y N. Describe access and method of getting equipment to roof: FOR 1 - ELEVATOR, CARRY UP FLIGHT THRU 6' DOOR -
OPTION 2+3 - MUST ROPE PISH UP 10' TO PENTHOUSE ROOF



TRIPLE STREET

TRIPLE STREET



TEMPLE STREET

SITE SURVEY REPORT		EDS Video Services	
SHEET 5 OF 5		3490 Piedmont Road	
PROJECT (CUSTOMER)		Atlanta, Georgia 30305	
MCF		SCALE: 1/4" = 5 FEET	
SITE ADDRESS		DRAWN BY, DATE	
Citycenter, 4th Floor		M. BURNS 8.23.96	
CITY, STATE			
Portland, ME			

Sketch of site plan showing antenna installation alternatives, cable routing and true North arrow. (Also, use this form for mounting photos.) ENG 6-91

ROBINSON ASSOCIATES
CONSULTING ENGINEERS

4126 Pleasantdale Road
Suite 210
Atlanta, Georgia
30340

Telephone
770 448-6627
Telecopier
770 448-6425

October 30, 1996

Ms. Nancy Wilson
Convergent Media Systems
3490 Piedmont Road
Atlanta, GA 30305

RE: 1.8M Antenna and Non-penetrating Mount
MCI Telecommunications
One City Center
Portland, ME

Dear Ms. Wilson:

ROBINSON ASSOCIATES CONSULTING ENGINEERS has evaluated the use the 1.8M Prodelin Non-penetrating Roof Mount for the above referenced project. The loading criteria used for our evaluation is as follows:

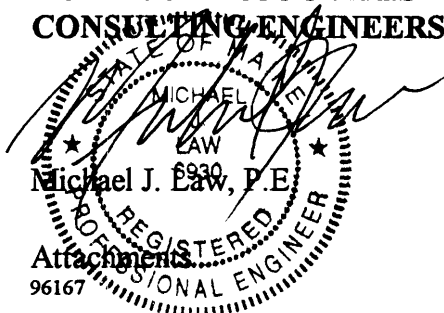
Building Code:	ASCE 7-93
Wind Speed:	90 mph Exposure "B"
Snow Load:	60 psf Ground Snow

Based on the above criteria this mount will provide the appropriate safety factors of 1.25 against sliding and 1.5 against overturning at a height of 160 feet above grade when configured with 1440 pounds of ballast equally distributed on all sides. The mount should be located as indicated on the attached partial roof framing plan.

If you should have any questions please do not hesitate to contact me.

Sincerely,

ROBINSON ASSOCIATES
CONSULTING ENGINEERS, INC.


Michael J. Law, P.E.
9930
Attachments
96167

**ROBINSON ASSOCIATES
CONSULTING ENGINEERS**

JOB 1.8 M/MCI PORTLAND, ME
 PREPARED BY JWR DATE 10-30-91
 CHECKED BY DLW DATE 10-30-91

1.8 M NPMMM

ASCE 7-93	EXP 'B'
WIND SPEED (V)	90 MPH
ANTENNA HGT (H)	160 FT
WGT ANT & MT (W _{AM})	436 #
MT BASE WIDTH (b)	10 FT
MT BASE AREA (A _b)	100 FT ²
TOP OF MAST CLSU (h)	4.5 FT
ANTENNA AREA (A)	29.6 FT ²
ANTENNA SHAPE FACTOR (C _F)	1.2
COEFF OF FRICTION (μ)	0.64
IMPORTANCE FACTOR (I)	1.00

BASIC WIND PRESSURE

$$\begin{aligned}
 q_z &= 0.00256 (K_z) (1V)^2 \\
 &= 0.00256 (1.05) (90)^2 \\
 &= 21.77 \text{ PSF}
 \end{aligned}$$

FORCE $F = q_z (G_z) C_F (A)$

$$\begin{aligned}
 &= 21.77 (1.24) 1.2 (29.6) \\
 &= 959 \#
 \end{aligned}$$

SLIDING

FACTOR OF SAFETY F.S. ≥ 1.25

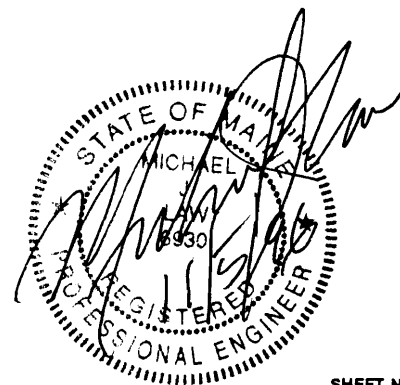
$$\begin{aligned}
 \text{WGT REQ'D} &= \text{F.S.} \times F/\mu \\
 &= 1.25 (959) / 0.64 \\
 &= 1877 \#
 \end{aligned}$$

OVERTURNING

FACTOR OF SAFETY F.S. ≥ 1.50

OVERTURNING MOMENT $M_o = F(h)$

$$\begin{aligned}
 M_o &= 959 (4.5) \\
 M_o &= 4316 \text{ FT}\#
 \end{aligned}$$



**ROBINSON ASSOCIATES
CONSULTING ENGINEERS**

JOB 1.8 M/MCI PORTLAND, ME
 PREPARED BY JDR DATE 10-30-96
 CHECKED BY DLL DATE 10-30-96

RESISTING MOMENT $M_R \geq F.S. (M_o)$
 $\geq 1.5(4316)$
 $\geq 6473 \text{ FT}\cdot\text{#}$

WGT REQ'D = $W_o = M_R / (b/2)$
 $= 6473 / 5$
 $= 1295 *$

BALLAST REQ'D

BALLAST = $W_s - W_{Am}$
 $= 1873\# - 436\#$
 $= 1437 *$

ROOF PRESSURE

STATIC ROOF PRESSURE $q_o = W_m / A_s$
 $= 1873\# / 100$
 $= 18.73 \text{ PSF}$

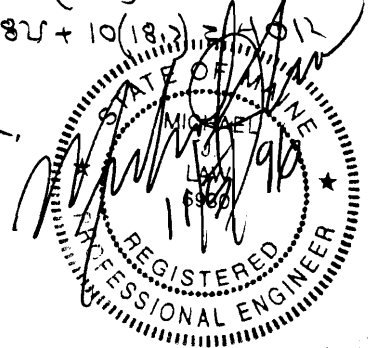
CHANGE COMPARISON

EXISTING ROOF LOAD	$W_e = 12 \text{ PSF}$	- BALLASTED ROOF
	94 PSF	- 3/4" SLAB
	5 PSF	- CURT MESH
	92 PSF	- SNOW LOAD
	<u>153 PSF</u>	

$W_e = 153 \text{ PSF}$

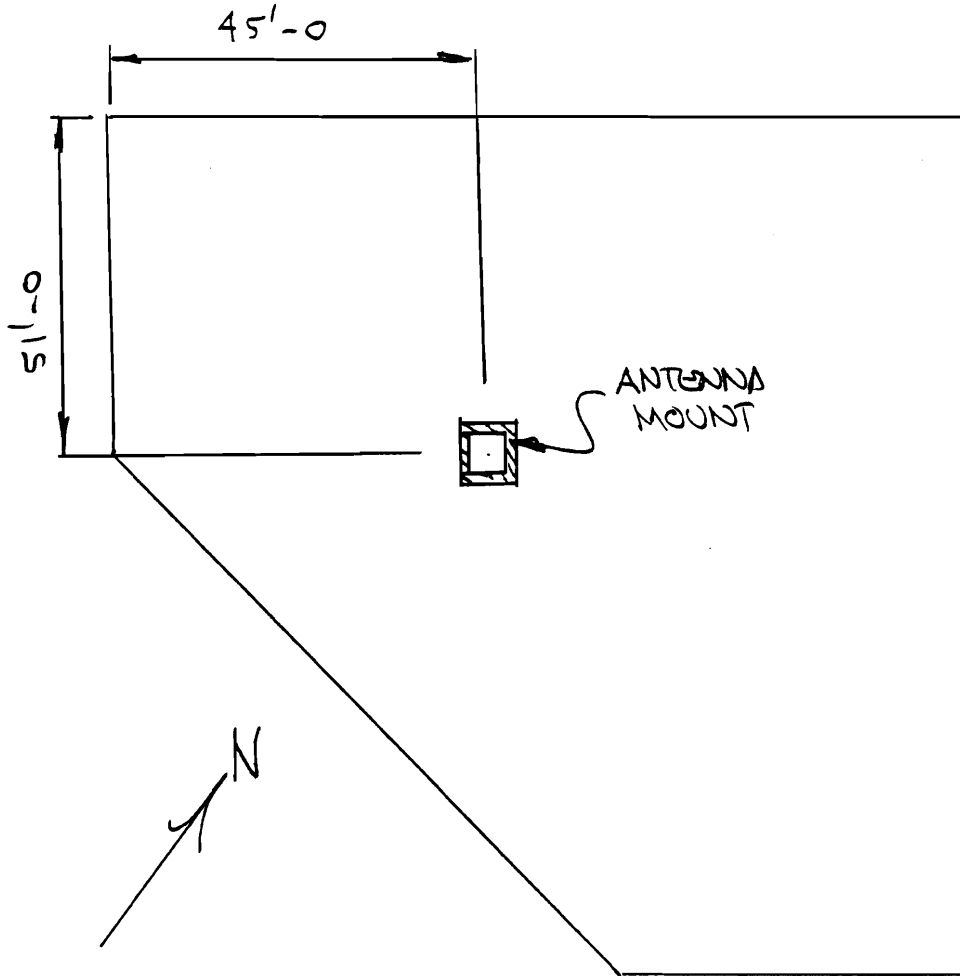
COLUMN STRIP LOADING EXISTING = $25(153) = 3825$
 NEW = $3825 + 10(18.73) = 3992$

9% CHANGE $\leq 5\%$ \therefore O.K.



**ROBINSON ASSOCIATES
CONSULTING ENGINEERS**

JOB 1.8 M/MCI PORTLAND, MS
PREPARED BY JAR DATE 10-30-96
CHECKED BY DLW DATE 10-30-96



ANTENNA LOCATION PLAN

NTJ

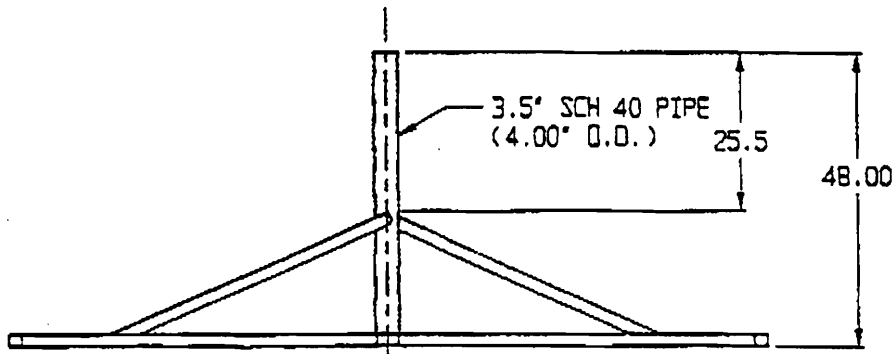
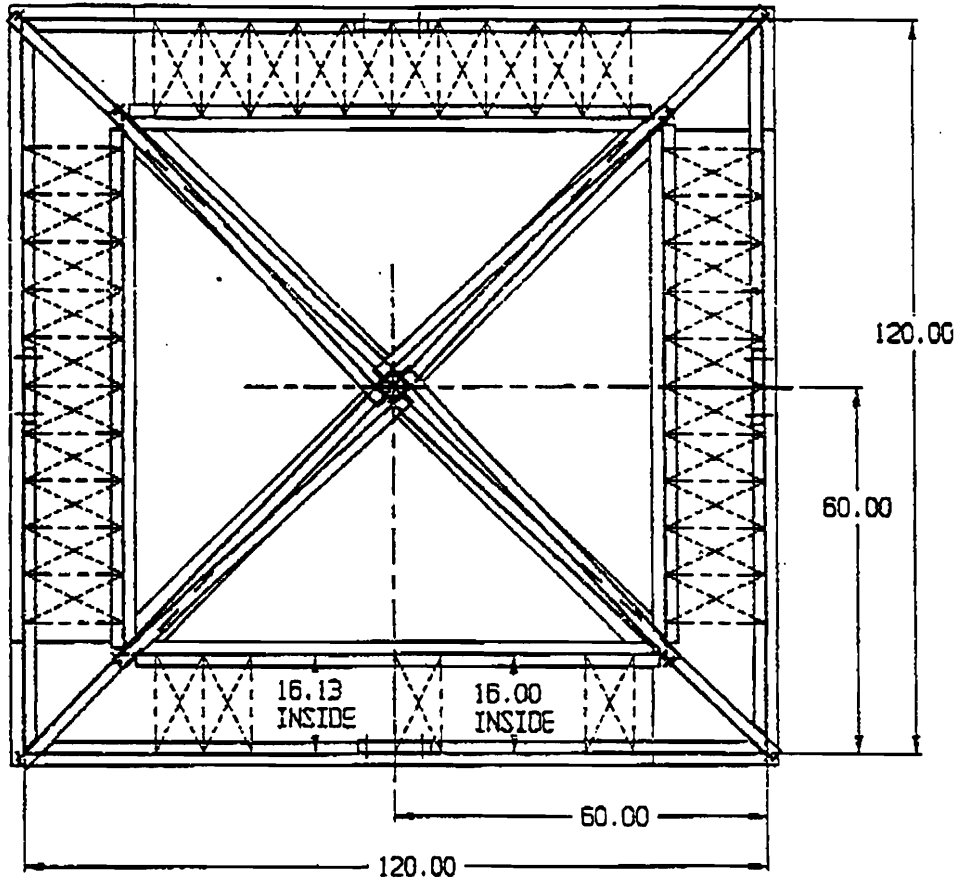


SHEET NO.

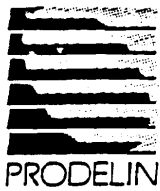
OF

10' x 10' NPMW

0800-1114



PART NUMBER INCLUDES RUBBER ROOF PADS
4.00" O.D. MAST PIPE
USED WITH 1.8M (.6) Rx/Tx ANTENNA SYSTEMS
125 MPH SURVIVAL BASED ON 30 FT. ABOVE GROUND, EXPOSURE B



SPECIFICATIONS

1.8M KU-BAND RECEIVE/TRANSMIT OFFSET ANTENNA SYSTEM SERIES 1181 - 1184

ELECTRICAL

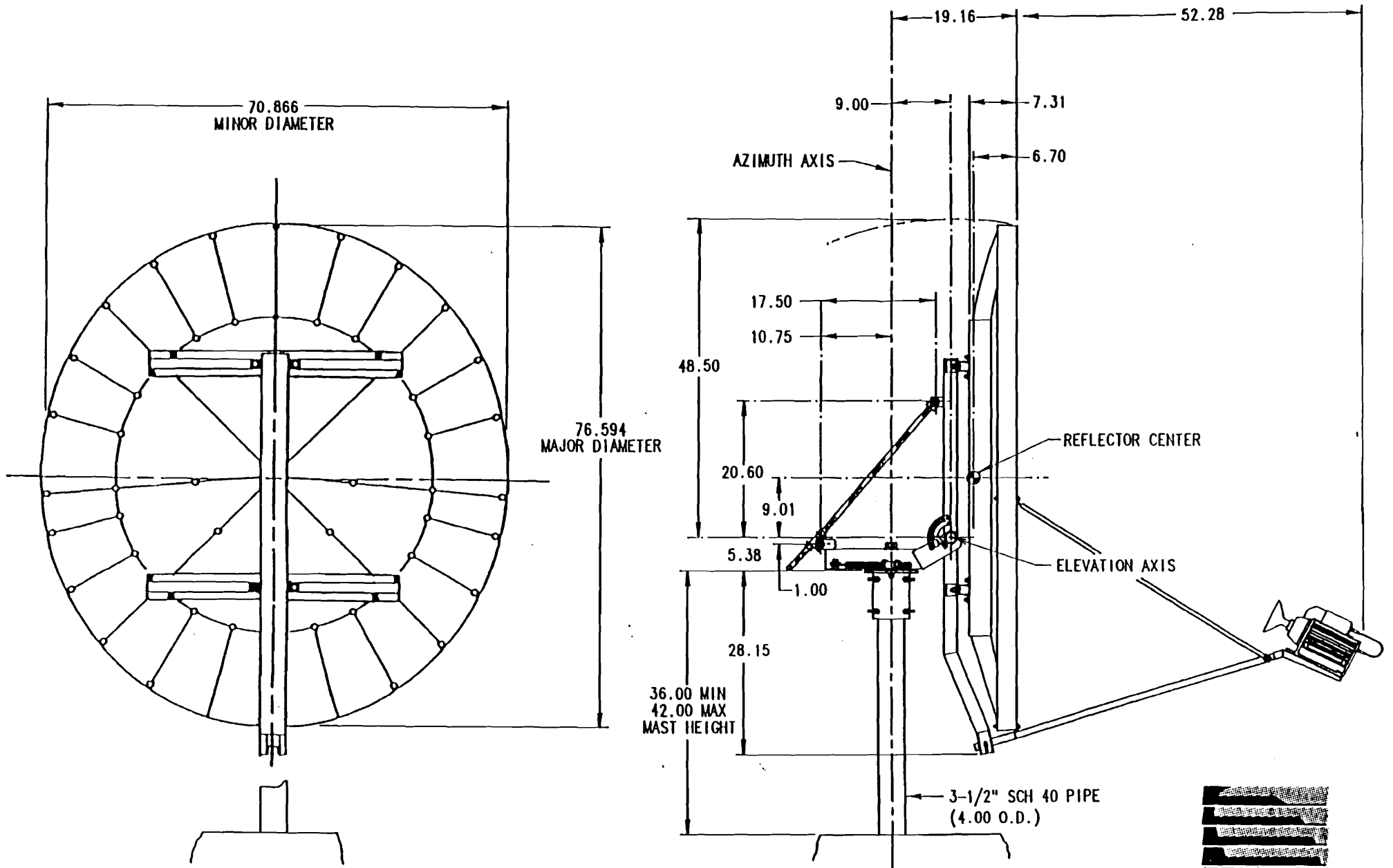
Effective Aperture		1.8M	71 in.
Operating Frequency	Receive	10.95 - 12.75 GHz	
	Transmit	14.0 - 14.5 GHz	
Midband Gain (± 2 dBi)	Receive	45.0 dBi	
	Transmit	46.5 dBi	
Sidelobe Envelope, Co-Pol	Mainbeam $\angle \Theta < 7^\circ$	29-25 Log Θ	
	$7^\circ < \Theta < 9.2^\circ$	+8 dBi	
	$9.2^\circ < \Theta < 48^\circ$	32-25 Log Θ	
	$48^\circ < \Theta < 180^\circ$	-10 dBi	
Cross-Pol Isolation		>30 dB (on axis)	
VSWR		1.3:1 Max.	
Insertion Loss		0.2 dBi max.	
	Antenna Noise Temperature		
	20° elevation	38° K	
	30° elevation	35° K	
RF Interface		Available in a variety of designs	

MECHANICAL

Reflector Material	Glass Fiber Reinforced Polyester SMC
Antenna Optics	Prime Focus, Offset Feed
Mount Type	Elevation over Azimuth
Elevation Adjustment Range	Series 1181 - 10° to 70°, Continuous Fine Adjustment
	Series 1184 - 5° to 90°, Continuous Fine Adjustment
Azimuth Adjustment Range	Series 1181 - 360° Continuous
	Series 1184 - $\pm 45^\circ$ Fine, 360° Continuous

ENVIRONMENTAL PERFORMANCE

Wind Loading	Operational	50 mph	80 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/ft ²	
Shipping Specifications		Weight	235 lbs. 106 kg.



1.8M OFFSET Az/EI ANTENNA GEOMETRY
Ku-BAND RECEIVE/TRANSMIT

