

VLBA ACQUISITION MEMO #291

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

HAYSTACK OBSERVATORY

WESTFORD, MASSACHUSETTS 01886

Telephone: 508-692-4764

Fax: 617-981-0590

29 November 1991

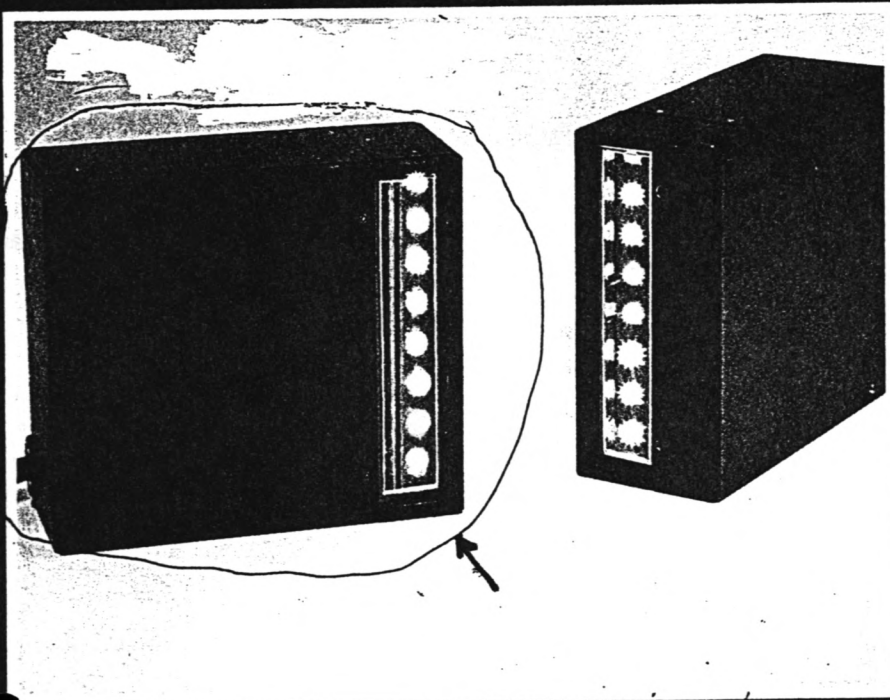
TO: VLBA Tape Drive Users
FROM: Alan R. Whitney
SUBJECT: Bar-code reader on VLBA transport

A prototype bar-code reader system has been installed and tested on a VLBA transport at Haystack. The bar-code reader itself is a small box that attaches to the front plexiglass door and looks at the bar code through a slot cut in the plexiglass. The bar code is attached to the front flange surface of the tape reel, oriented in a radial direction, and is read as it passes in front of the reader; reel rotation speeds up to $\sim .25$ revolutions/sec have proven reliable. In our test, the reader has been highly reliable in reading bar codes of various size and qualities.

This memo contains the mechanical and electrical drawings for the attachment of the reader to the transport. Updated versions of VLBA Acquisition Memos 71 and 238 describing the commands necessary to use the reader with the MCB will be issued soon (drafts are now available). VLBA Acquisition Memo 247 describes in detail the bar-coding system in use by the Mark III world.

FTS-3120

CCD BAR CODE SCANNER



COMPACT, RELIABLE FIXED POSITION SCANNER

3" read window

Fast, accurate data capture rates

No moving mechanical parts

Non-hazardous illumination

Inexpensive alternative
to laser scanning

Application engineering
support

Well Proven Technology

CCD scanners incorporate the same imaging method found in facsimile machines and camcorders. By capturing the bar code image all at once, the user is assured of a fast, accurate read rate. The FTS-3120 is ideal for many applications including medical diagnostic equipment, ticket/badge reading applications, document control and security access.

Excellent Read Rates

Featuring high speed scanning without troublesome mis-reads, the FTS-3120 accurately reads high density and marginal quality labels. CCD imaging technology is the best choice where accuracy is a paramount factor because it is less prone to read errors.

Long Lifetime

There's virtually little that can go wrong with the FTS-3120 because it's built with 100% solid state components and has no moving mechanical parts. You're assured of a reliable, maintenance-free scanner that will provide years of trouble-free service.

No Warning Labels

Safe LEDs (light emitting diodes) are used as the light source in the FTS-3120. No warning labels indicating potential hazards to the eye from an intense laser source are required.

Low Cost Automatic Scanning

CCDs are an inexpensive choice when compared to laser scanners. Because CCDs have no moving mechanical parts, repair and maintenance costs are minimal.

Application Engineering Support

Opticon will work closely with you to make sure we meet your most exacting specifications. Some individual customer requirements include custom shapes and sizes, greater read distances, faster scanning speeds and software modifications. We also provide software upgrade services to make sure your equipment has optimal performance year after year.

OPTICON

FTS-3120 CCD BAR CODE SCANNER

Specifications

(subject to change without notice)

PHYSICAL

Case Material: Steel
Case Color: Black Paint
Dimensions: 3.5 x 3.8 x 1.6"
Weight: 22 oz.
Cable Length: 6 ft. nominal

OPTICAL

Optics Systems: CCD (charged coupled device)
Light Source: 660nm LED
Scan Rate: 50 (200 scans/second optional)
Read Distance: 0 - 1" (up to 3.5" distance optional)
Field Width: 3"
Print Contrast Ratio: 0.50 min.
Standard Element Width: 7.5 mils (5 mil and 6 mil optional)
Ambient Light Rejection: 1500 lux max. (optional notch filters)

ELECTRICAL

Power Requirements: 5VDC +/-10%
Operating Current: 230mA nominal at 5V

ENVIRONMENTAL

Operating: 0 - 40° C
Storage: -20 - 70° C
Relative Humidity: 20 - 85%

INTERFACE OPTIONS

LINKER: Wand Emulation
RS232C: Asynchronous serial output

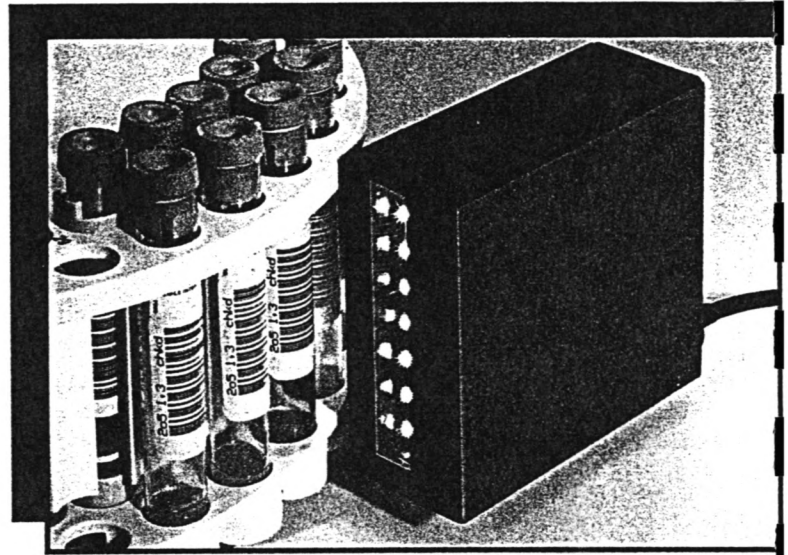
NOTE: Ask about availability of other interface options.

ORDERING INFORMATION

Specify:
Model Number: FTS-3120
View Direction: A = side window, B = front window
Switch: Hardware or software
Interface: See options

WARRANTY

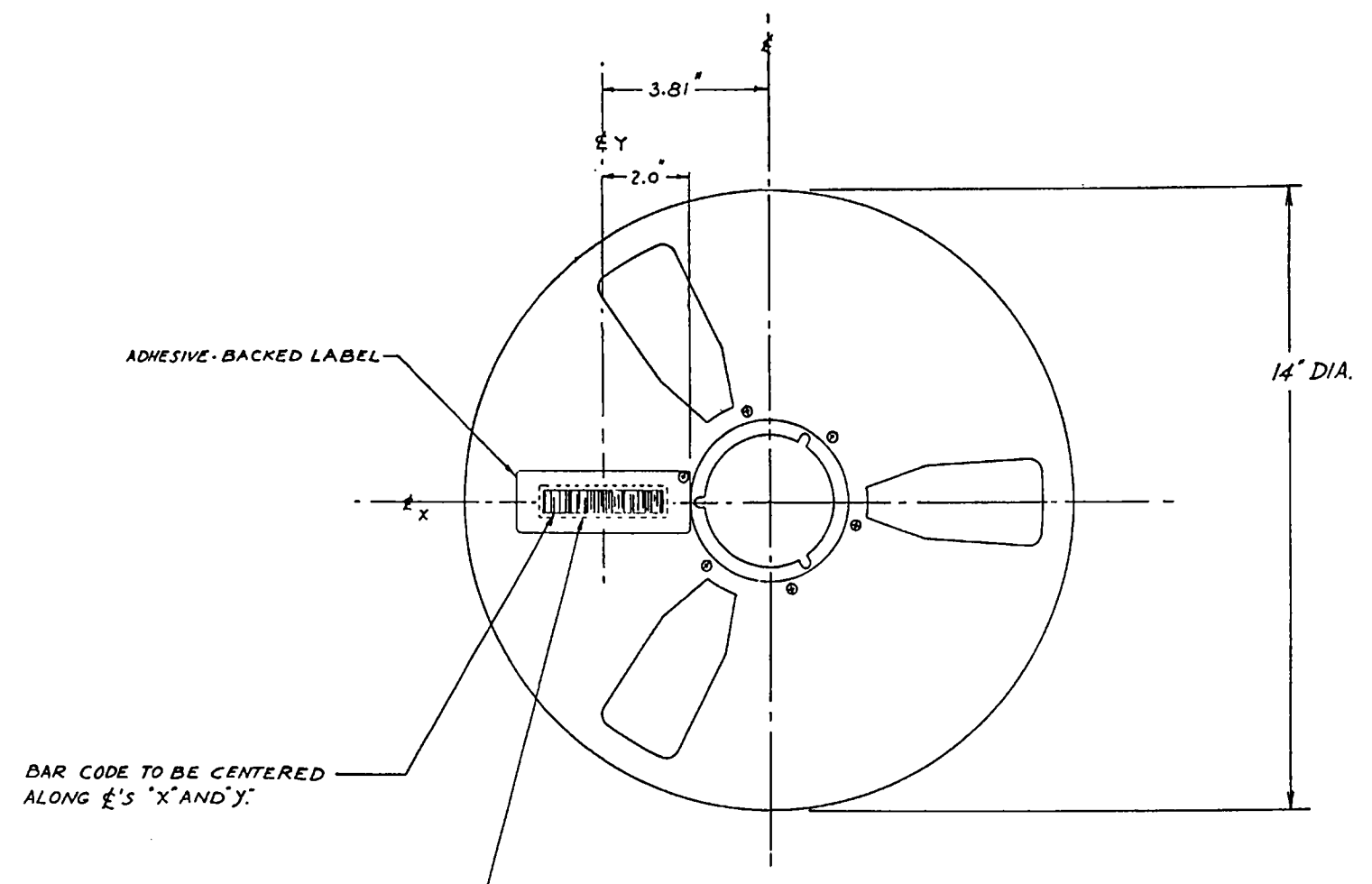
One Year



DISTRIBUTED BY:

Opticon Inc.
8 Olympic Drive
Orangeburg, NY 10962
Tel (914) 365-0090
Fax (914) 365-1251

OPTICON



ADHESIVE-BACKED LABEL

BAR CODE TO BE CENTERED ALONG \hat{x} 'S 'X' AND 'Y'.

DOTTED LINE REPRESENTS THE OUTLINE OF BAR CODE SCANNER READ WINDOW, CENTERED ABOUT THE BAR CODE.

HALF SCALE

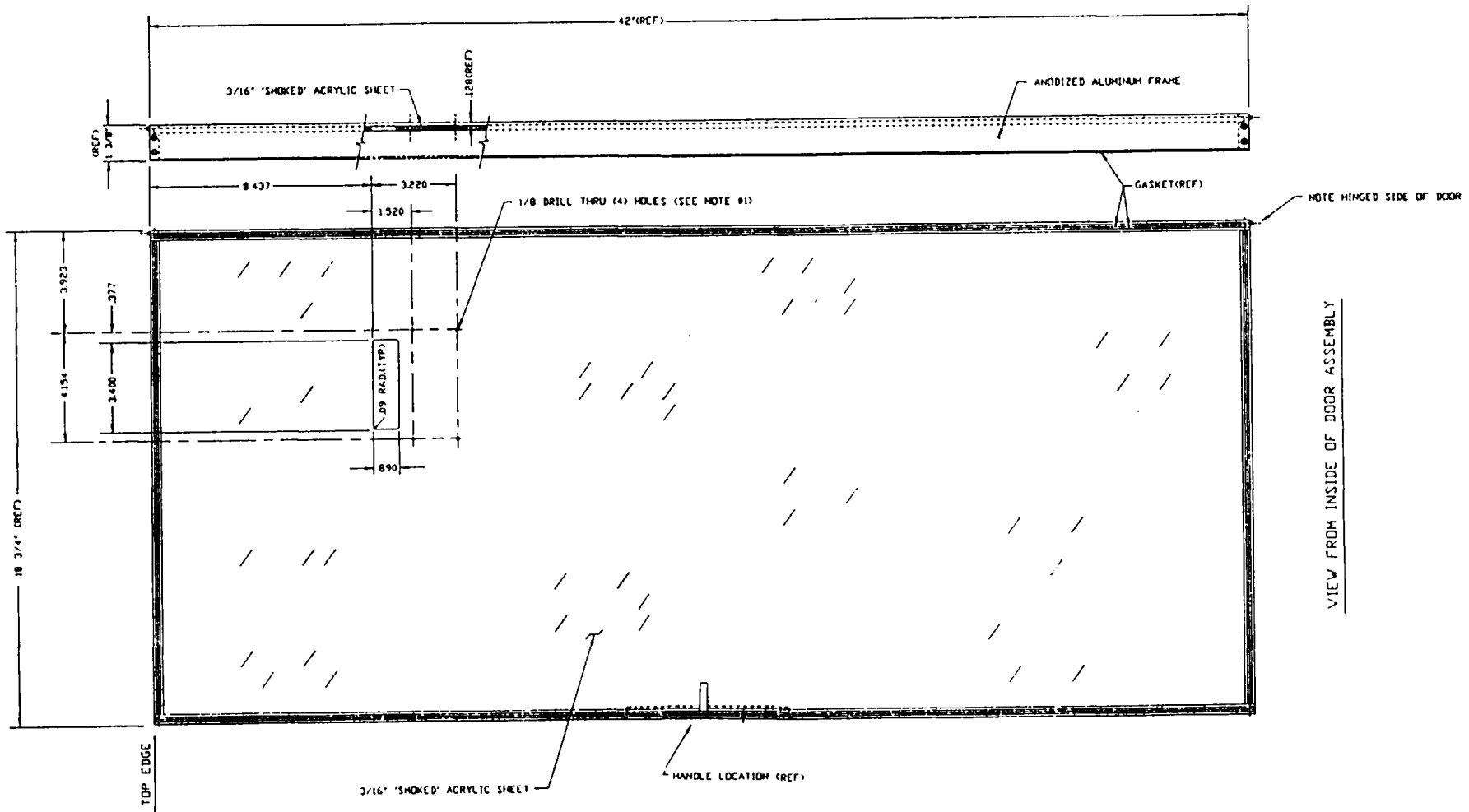
NOTES

C-54300M026

MATERIAL	USED ON	DRAWN FOR A.R. WHITNEY	DATE 8-21-71	NORTHEAST RADIO OBSERVATORY CORPORATION HAYSTACK OBSERVATORY WESTFORD, MASSACHUSETTS
		DRAWN BY R.J. CADY	DATE 8-21-71	
FINISH AND/OR HEAT TREATMENT		CHECKED BY		LOCATION OF BAR CODE LABEL FTS-3120 CCD BAR CODE SCANNER VLBA RECORDER RACK
		PROJECT		
		NEXT ASSEMBLY		
		WEIGHT		
SHIP WEIGHT UNLESS OTHERWISE SPECIFIED 1 DIMENSIONS ARE IN INCHES 2 DIMENSIONS SHOWN ARE BREAK 3 DIMENSIONS ON DIMENSIONS 4 DIMENSIONS 1/16" DIA. FRACTIONAL 1/16" 5 DIMENSIONS ARE DECIMALS TO 2 PL 6 ALL DIMENSIONS TO UNLESS OTHERWISE NOTED 7 DIMENSIONS ON DIA.		SCALE HALF		
		CLASSIFICATION		THERMAL

C-54300M026

CHANGE LETTER	BY	CHK'D BY	APP'D BY	DATE	COM. & DESCRIPTION



VIEW FROM INSIDE OF DOOR ASSEMBLY

D - 54300M024

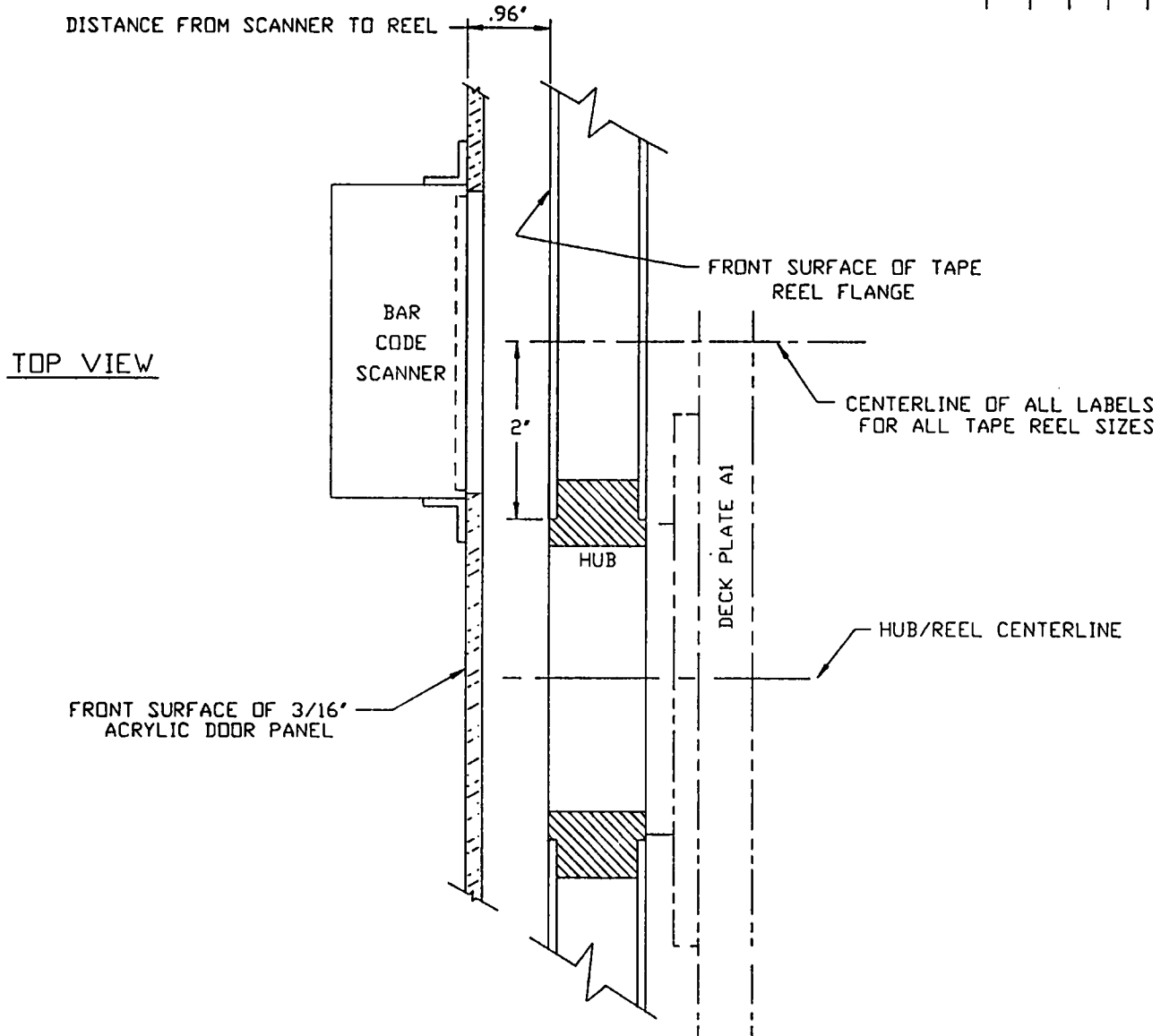
- NOTES:**
- USE SPECIALLY GROUND POINTS (60° INCLUDED TIP ANGLE, 0° RAKE, SHOULDER RELIEVED) FOR DRILLING.
 - DOOR MUST BE MASKED TO PROTECT AGAINST DISCOLORATIONS AND SCRATCHES. CLAMP ASSEMBLY CAREFULLY TO AVOID CRACKING AND DEFORMATIONS.

HALF SCALE

MATERIAL
 TRANSPORT ACCESS DOOR - HONEYWELL
 MODEL 96 MAGNETIC TAPE RECORDER /
 REPRODUCER SYSTEM

ELECTRONICS NOTES: UNLESS OTHERWISE NOTED: RESISTORS: INDUCTORS: CAPACITORS:	USED ON	DRAWN FOR	DATE	NORTHEAST RADIO OBSERVATORY CORPORATION HAYSTACK OBSERVATORY WESTFORD, MASSACHUSETTS
		A.R. WHITNEY	12/78	
		R. J. CADDY	11/78	
	SCALE: HALF	CHECKED BY:		ACRYLIC DOOR MODIFICATION
	CLASSIFICATION	ENGINEER		FTS-3000 BAR CODE SCANNER
		PROJECT:		RECORDER RACK
				D300M024
				D 54300M024

CHANGE LETTER	BY	CHK'D BY	APP'D BY	DATE	D.C.A. & DESCRIPTION



C- 54300M028

NOTES

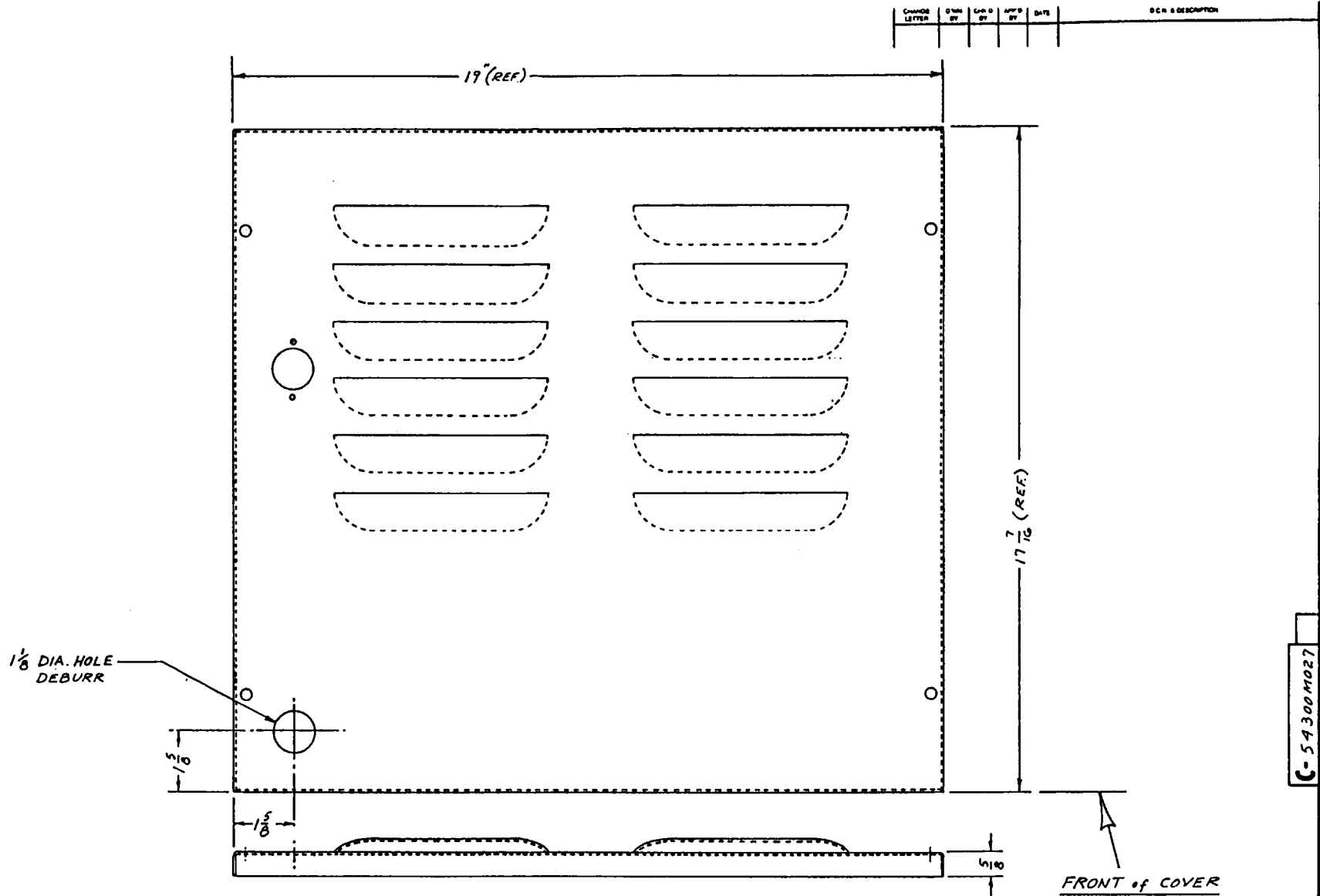
MATERIAL	
FINISH AND/OR HEAT TREATMENT	

SHOP NOTES: UNLESS OTHERWISE SPECIFIED

1. DIMENSIONS ARE IN INCHES
2. TOLERANCE ON DIMENSIONS
 FRACTIONAL $\pm 1/64$
 DECIMAL $\pm .01$
 ANGULAR $\pm 0'30''$
3. SURFACE ROUGHNESS PER MIL-STD-111 ✓
4. REMOVE BURRS AND BREAK SHARP EDGES 1/64 MAX.
5. SCREW THREADS PER MIL-STD-9
6. ALL DIMENSIONS TO APPLY BEFORE PLATING OR CONVERSION COATING.

USED ON	
NEXT ASSEMBLY	
WEIGHT	
SCALE	FULL
CLASSIFICATION	

DRAWN FOR	A.R. WHITNEY	DATE	11/91	NORTHEAST RADIO OBSERVATORY CORPORATION HAYSTACK OBSERVATORY WESTFORD, MASSACHUSETTS
DRAWN BY	R.J. CADY	DATE	11/91	
CHECKED BY				ORIENTATION DISTANCE FTS-3120 CCD BAR CODE SCANNER TO TAPE REEL FLANGE VLBA RECORDER RACK
PROJECT				
ENGINEER				
NAT'L. & PROCESS				
STRUCTURES				
THERMAL				
Mech. ANALYSIS				
	C300M028	C	54300M028	
	DWG. SIZE		DWG. NO.	REV.

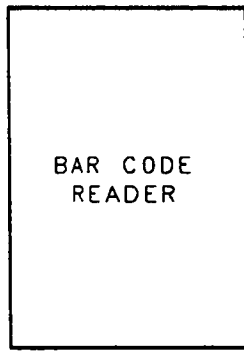


C-54300M027

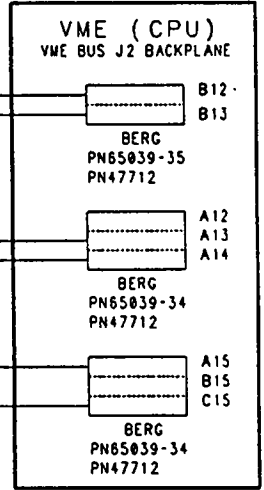
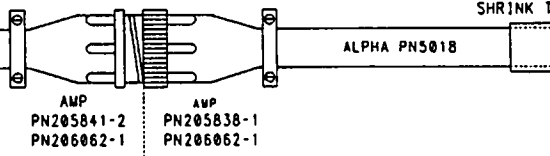
NOTES

1. MASK PAINTED SURFACES TO MINIMIZE SCRATCHES.

MATERIAL EXISTING CABINET COVER (06 STEEL) FINISH AND/OR HEAT TREATMENT EXISTING BLUE PAINT	USED ON	DRAWN BY T. R. WHITNEY 8-21-91 CHECKED BY R. J. CADY 8-21-91	PROJECT ENGINEER MATERIALS PROCESS STRUCTURES
SHOP NOTES UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCE ON DIMENSIONS FINISH AND/OR HEAT TREATMENT	WEIGHT NEXT ASSEMBLY SCALE HALF	DATE 8-21-91	PROJECT ENGINEER MATERIALS PROCESS STRUCTURES
1. REMOVE BURRS AND BREAK SHARP EDGES TO 1/16" RADIUS 2. SCREW DRILL PEA 3. ALL DIMENSIONS UNLESS OTHERWISE SPECIFIED 4. SURFACE FINISH	5. SURFACE FINISH	NORTHEAST RADIO OBSERVATORY CORPORATION HAYSTACK OBSERVATORY WESTFORD, MASSACHUSETTS	
		MODIFICATION TO TOP COVER OF HONEYWELL 96 RECORDER VLBA RECORDER RACK	
		54-102	



BLACK	PIN #1	FG	BLACK
WHITE	PIN #2	RD(A13)	RED
GREEN	PIN #3	SD(A14)	GREEN
BLUE	PIN #4	CS(C15)	BLUE
GRAY	PIN #5	RS(A15)	VIOLET
BROWN	PIN #6	-V(B12)	BROWN
ORANGE	PIN #7	-V(B12)	ORANGE
YELLOW	PIN #8	+S(B13)	YELLOW

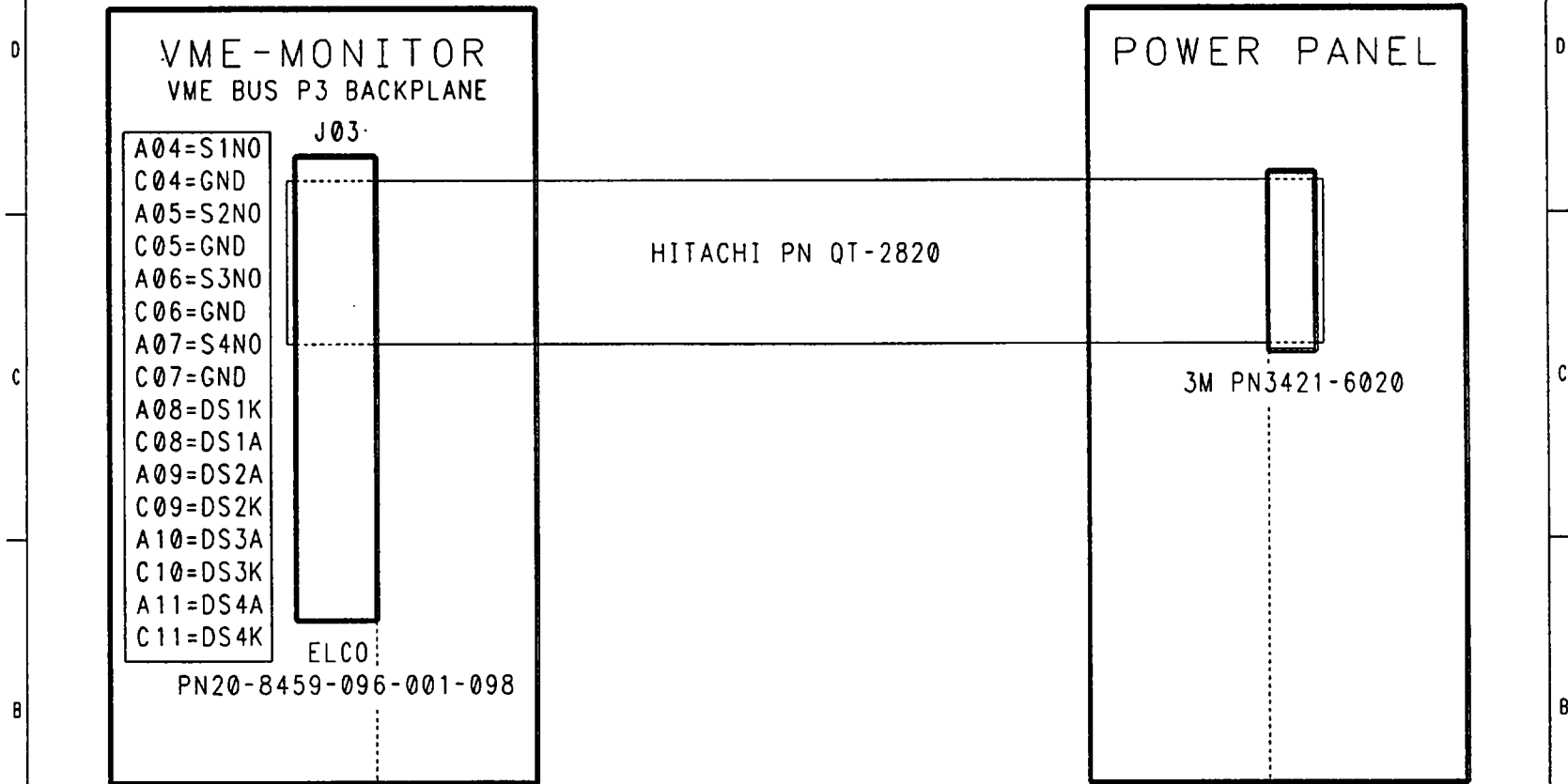


80 INCHES 40 INCHES

NOV 27 1991
Preliminary

NEROC - HAYSTACK OBSERVATORY WESTFORD, MA 01886			
VLBA RECORDER RACK BAR CODE READER UNIT VME-CPU & BAR CODE READER CABLE			
WDDULL	SIZE	DWG. NO.	REV.
BAR CODE	C	C54300A004	A
DATE	26-NOV-91		SHEET 01 OF 02

DR.	V. A. Iron	25-NOV-91
CHK.	Kenneth M. Wilson	26-NOV-91
APP.	V. A. Iron	27-NOV-91
DES.	Alan K. Ballouy	27-NOV-91
DRG.		



4.5 FEET

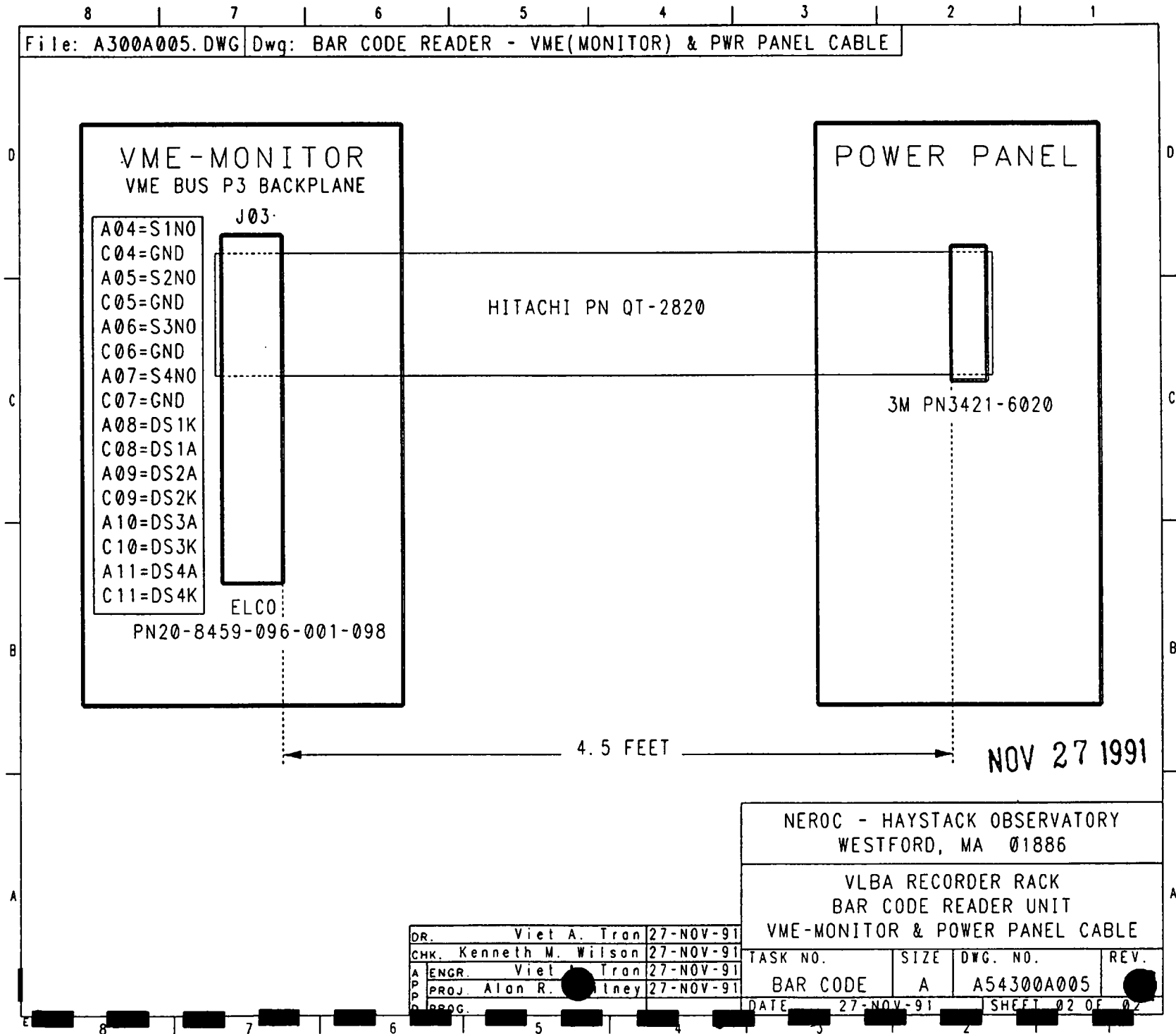
NOV 27 1991

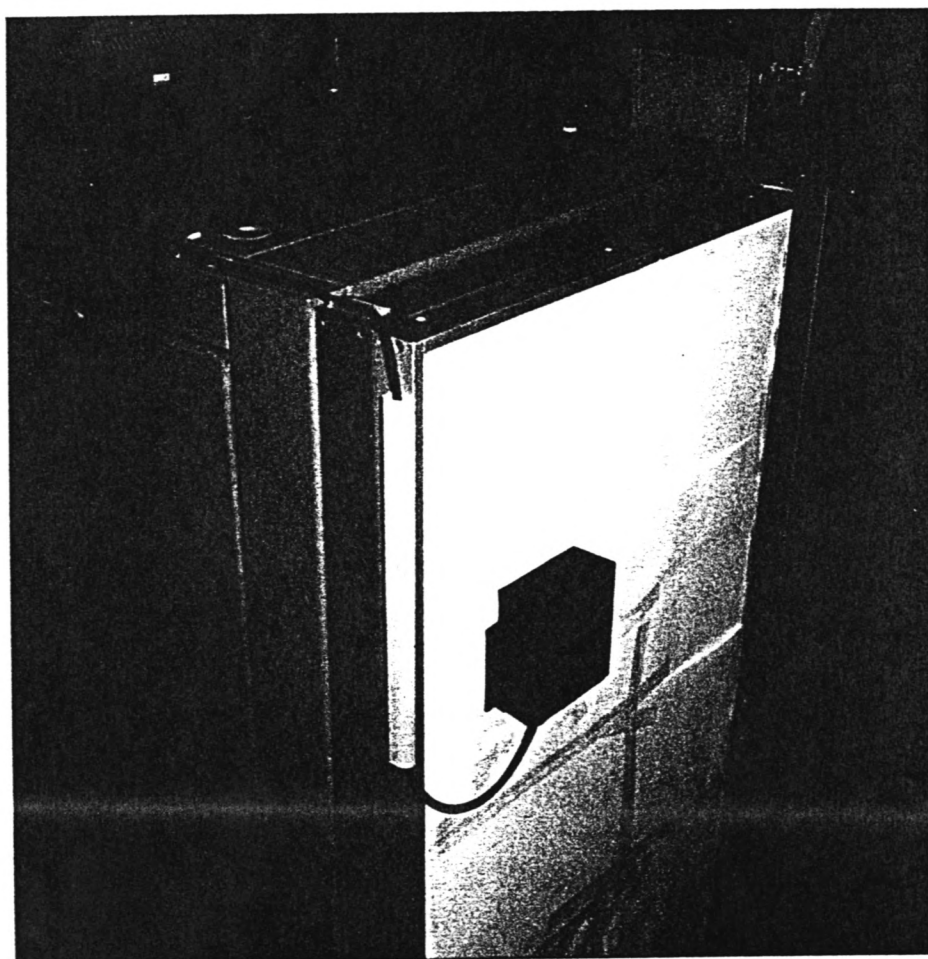
NEROC - HAYSTACK OBSERVATORY
WESTFORD, MA 01886

VLBA RECORDER RACK
BAR CODE READER UNIT
VME-MONITOR & POWER PANEL CABLE

DR.	Viet A. Tran	27-NOV-91	TASK NO.	SIZE	DWG. NO.	REV.
CHK.	Kenneth M. Wilson	27-NOV-91	BAR CODE	A	A54300A005	
A ENGR.	Viet Tran	27-NOV-91	DATE	27-NOV-91	SHEET	02 OF 02
P PROJ.	Alan R. Wilney	27-NOV-91				

DR.	Viet A. Tran	27-NOV-91
CHK.	Kenneth M. Wilson	27-NOV-91
A ENGR.	Viet Tran	27-NOV-91
P PROJ.	Alan R. Wilney	27-NOV-91





*Photo showing bar-code reader mounted
on transport*