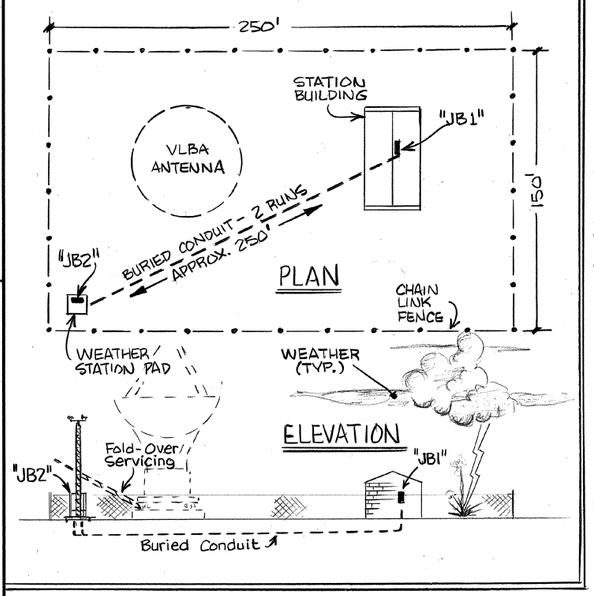
REV.	DATE	DRAWN BY	APPRV'D BY	DESCRIPTION

GENERAL SITE ARRANGEMENT

NOTE: VARIATIONS EXIST BETWEEN SITES FROM THAT DEPICTED.

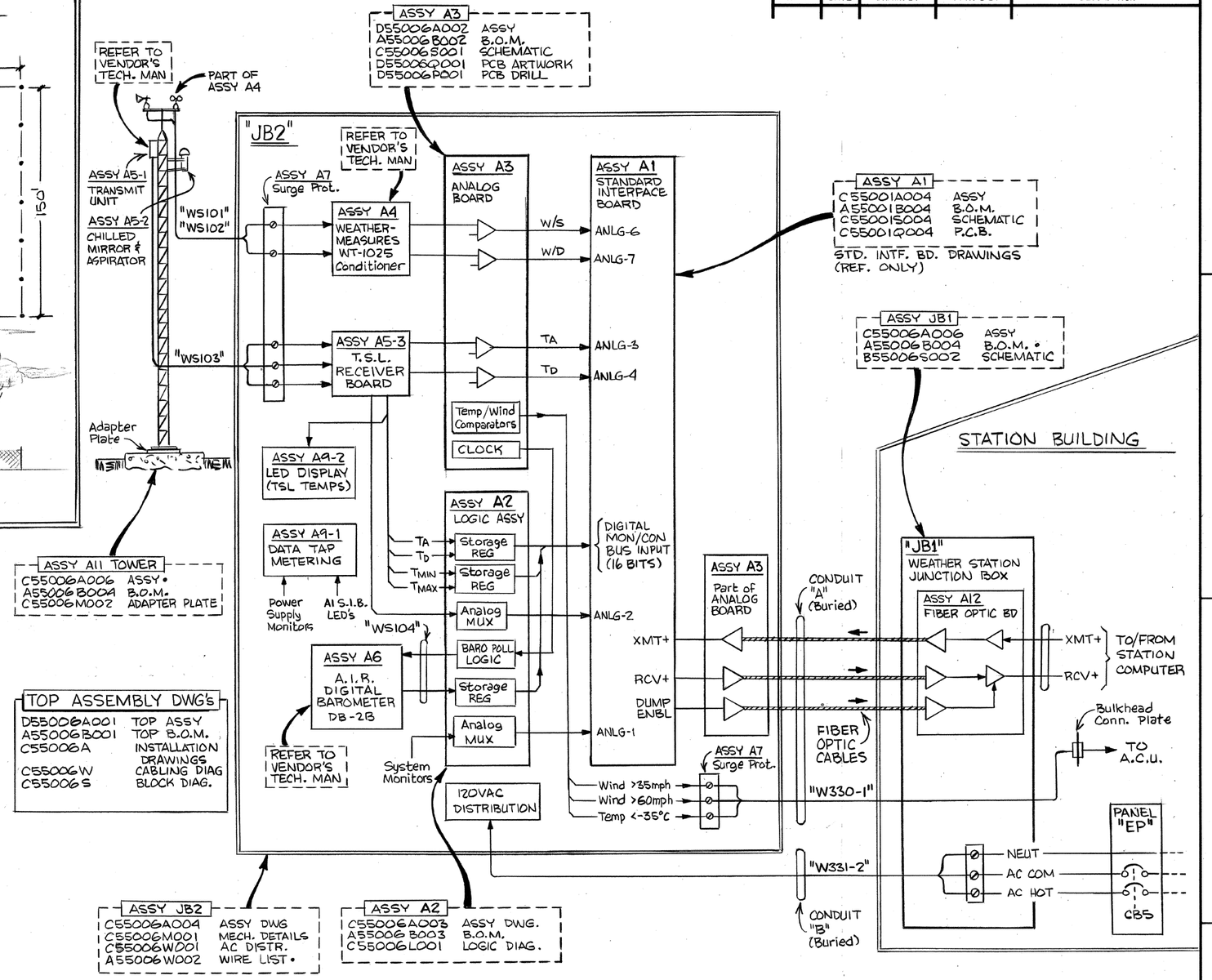


LIST OF MAJOR UNITS

REF. DESIG.	MFR	LOCATION	
ASSY A1	NRAO	JB2	STD. INTFC. BD.
ASSY A2	NRAO	JB2	LOGIC ASSY
ASSY A3	NRAO	JB2	ANALOG BOARD
ASSY A4	WEATHER-MEASURES, INC.	JB2	WIND SIGNAL CONDITIONING
ASSY A5	T.S.L.	JB2/TOWER	TEMP/DEW PT.
A5-1	Technical Services Laboratories	TOWER	TRANSMITTER
A5-2		TOWER	CHILLED MIRROR
A5-3		JB2	RECEIVER BD.
ASSY A6	A.I.R.	JB2	BAROMETER
ASSY A7	(See A4 MFR)	JB2	SURGE PROT.
ASSY A8	NRAO	JB2	HEAT & VENT.
ASSY A9	NRAO	JB2	DATA TAP
ASSY A10	NRAO	JB1+JB2	AC DISTR.
ASSY A11	NRAO/ROHN		TOWER ASSY
ASSY JB1	NRAO/HOFFMAN	STN. BLDG	W.S. JCT. BOX
ASSY JB2	NRAO/HOFFMAN	BY TOWER	EQUIP. ENCL.
ASSY PS1	ACDC ELECT.	JB2	POWER SUPPLY

NOTES

1. Some variations may exist between the 10 VLBA sites
2. Signal paths shown to emphasize function of major units and not intended to be a complete Block Diagram (see C55006S00)
3. Refer to C55006A00 for Installation details.



NEXT ASSY	USED ON

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ±
3 PLACE DECIMALS (.XXX): ±
2 PLACE DECIMALS (.XX): ±
1 PLACE DECIMALS (.X): ±
MATERIAL:
FINISH:

PROJECT: VLBA WEATHER STATION

TITLE: CONTROL DRAWING

NATIONAL RADIO ASTRONOMY OBSERVATORY
SOCORRO, NEW MEXICO 87801

DRAWN BY	DATE
PAUL HARDEN	8-88
DESIGNED BY	DATE
APPROVED BY	DATE

SHEET NUMBER 1 OF 1 | DRAWING NUMBER C55006Y001 | REV. B | SCALE

BRUNING 44-231 44427-2

ASPIRATOR HOUSING

A5J1

DEW POINT SENSOR P.C.B. A5 J1

T_A PRT — 11, 12 — RTA

LAMP CR1 — "SI" Q2 — "SD" Q1 — 13 — SD

14 — SI

MIRROR

T_D PRT — 5, 6 — RTD

THERMO-ELECTRIC HEAT PUMP — 2, 3, 1, 9

7, 15

ASPIRATOR UNIT A5-2 — FAN

ASSY A5-2 ASPIRATOR

A5-1 TRANSMIT. UNIT

A5J1 INSIDE

A5J2

A5J3

TO JB2

A5-2 T.S.L. TRANSMITTER UNIT

A5J2

RTA H, J

RTD G, F

P

SI E

SD B

-50 0 +50 OPR

CALIBRATOR

TAO 0°C

TA+ GAIN

TA

TD

TDØ 0°C

TD+ GAIN

ANALOG MUX

TA/TD

ANALOG-DIGITAL CONVERTER

13 bits

SEL TA/TD

SERIAL DRIVER

U1 MC68701 µPRO

CONTROL

HEAT PUMP V.

SI GAIN

SD GAIN

OPTICAL BRIDGE & HEATER/ COOLER CONTROL

DISPLAY

U15 MC68701 µPRO

TA

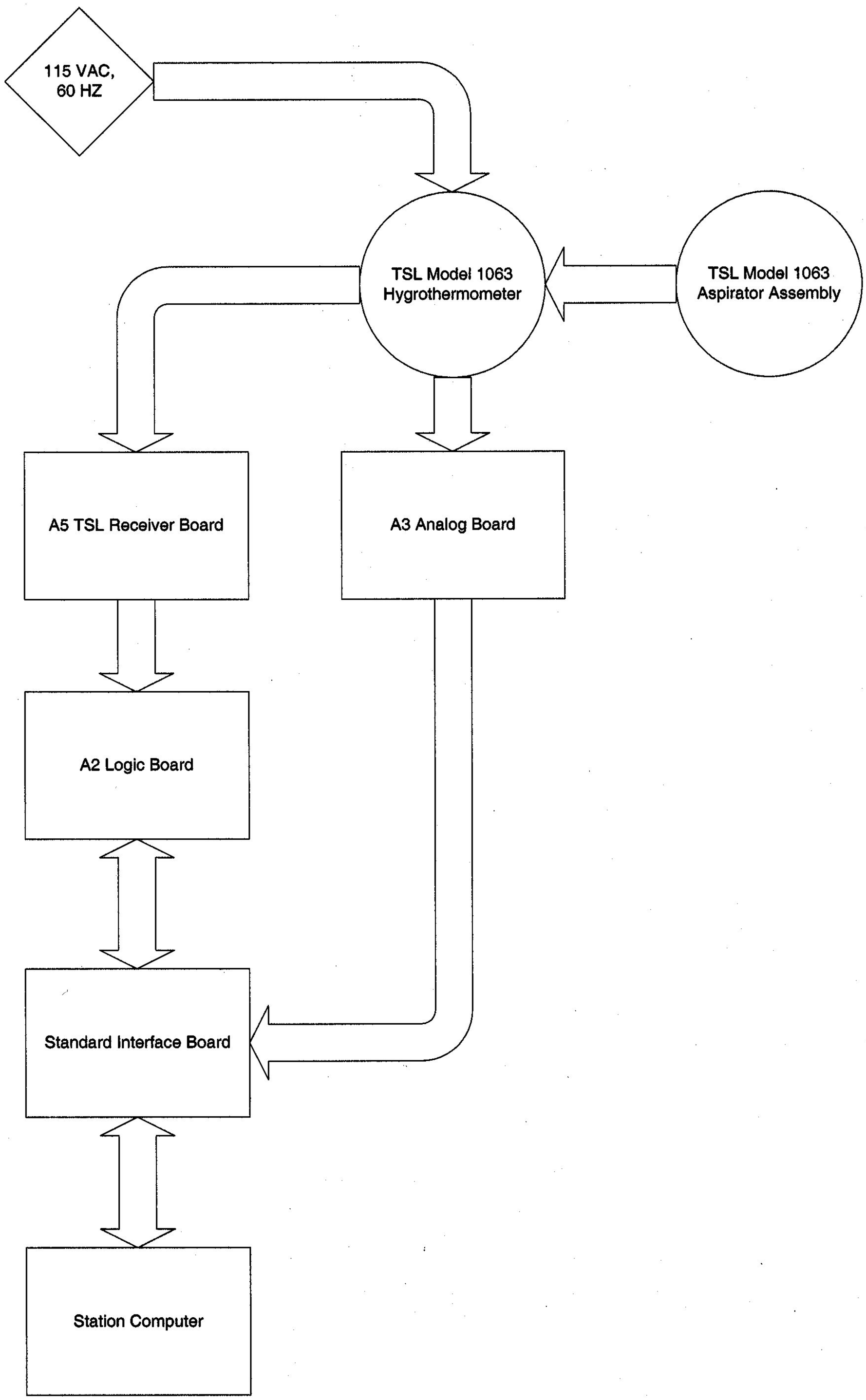
TD

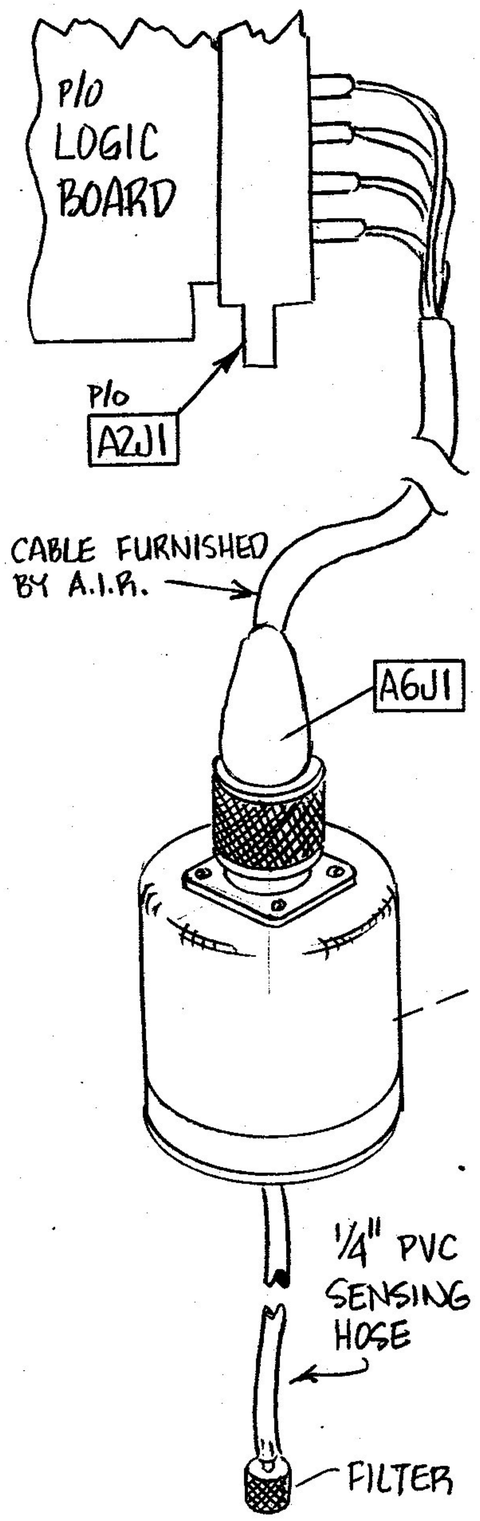
TO RECEIVER BOARD IN JB2 (SEE SHT. 2)

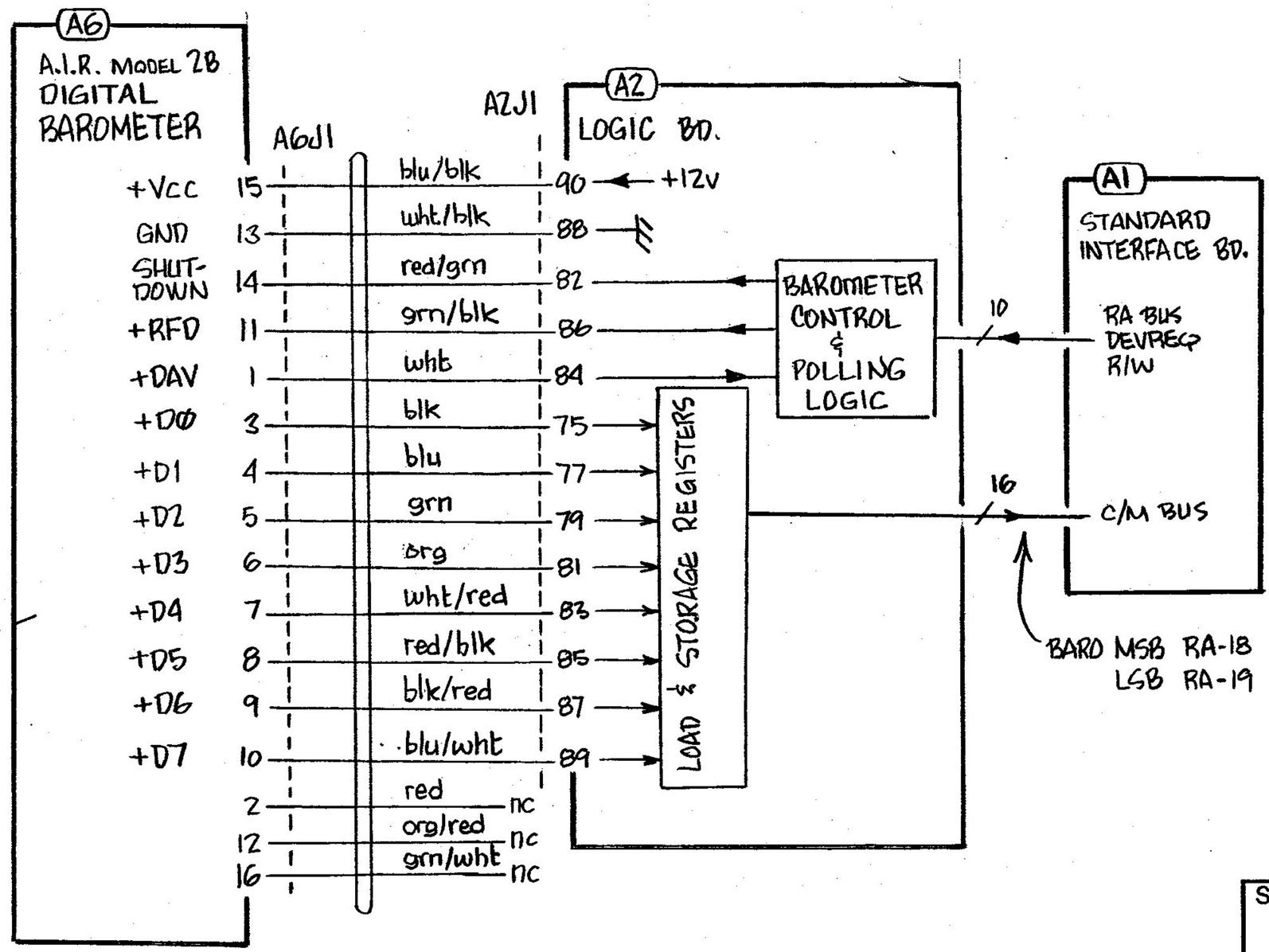
SHEET 1 of 2

VLBA WEATHER STATION	NATIONAL RADIO ASTRONOMY OBSERVATORY, Socorro, New Mexico
Title: TEMP/DEW POINT FUNCTIONAL LOOP DIAGRAM	Drawn by: Paul Harden
DWG. No. A55006W008	Date: SEPT 1988

Dew Point and Ambient Temperature Block Diagram



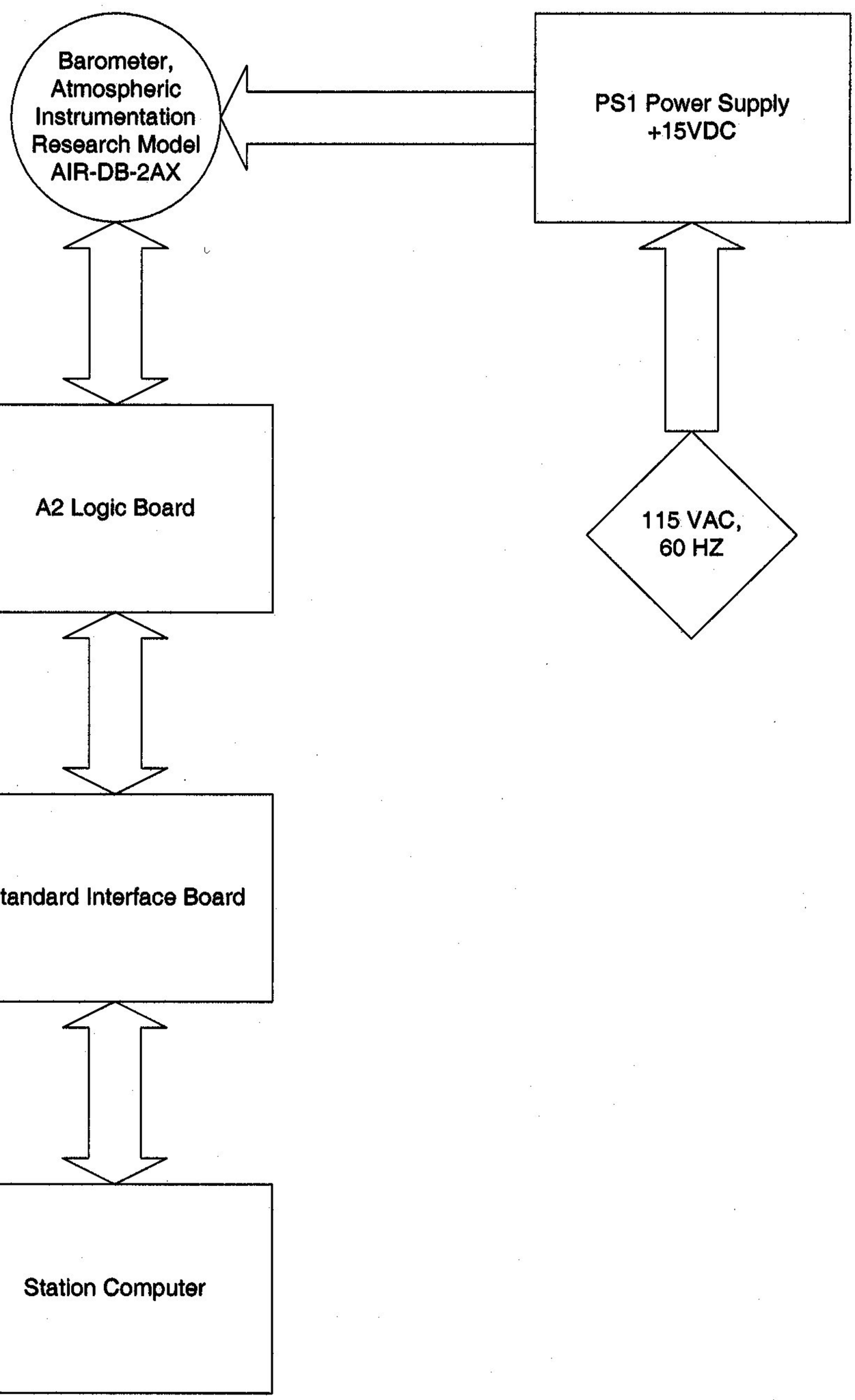


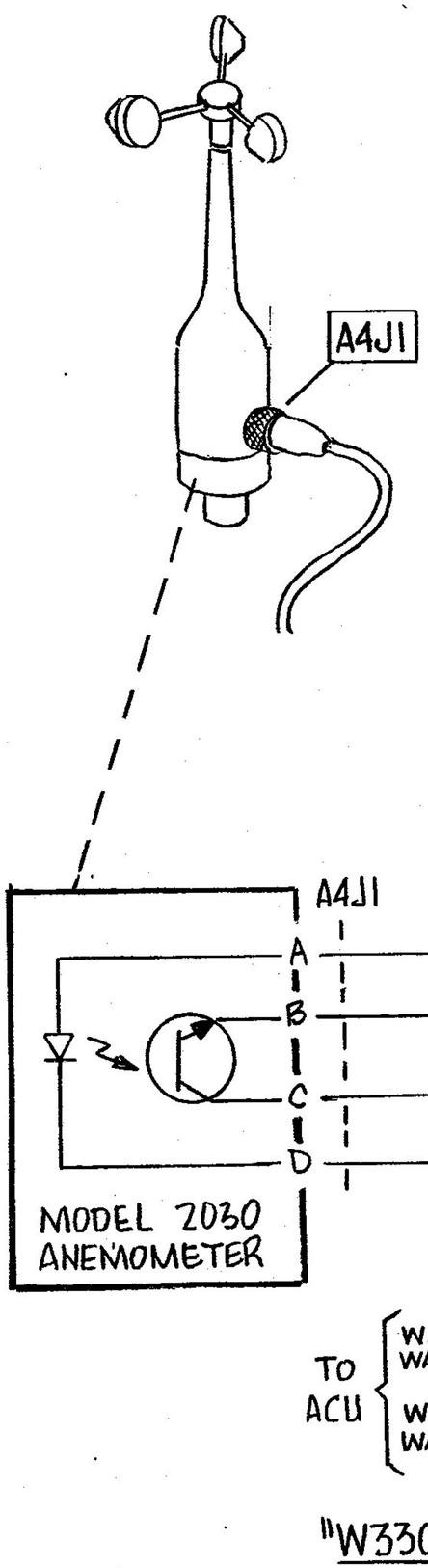


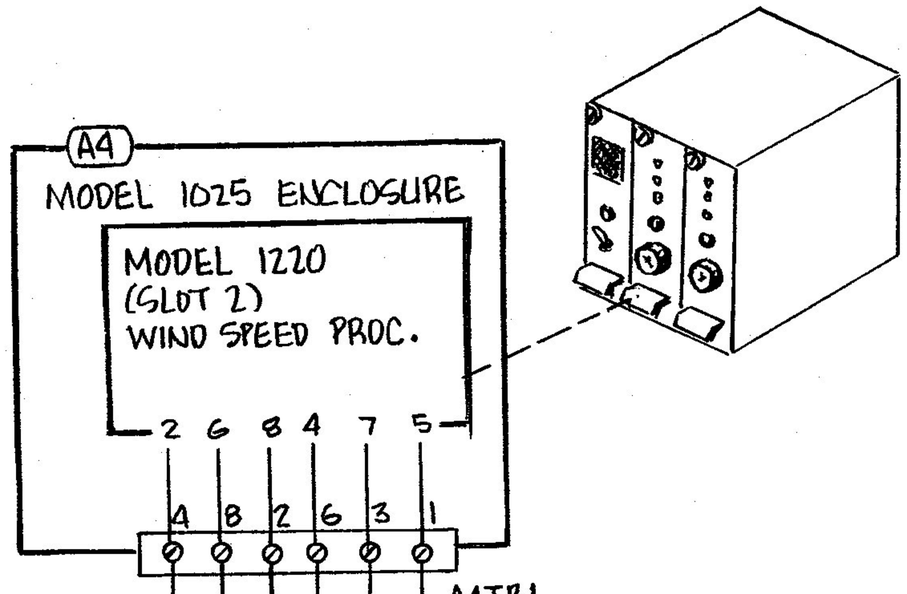
SHEET
of

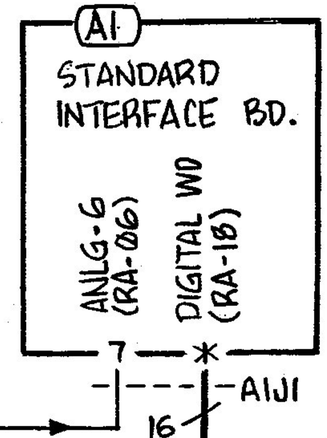
VLBA WEATHER STATION	NATIONAL RADIO ASTRONOMY OBSERVATORY Socorro, New Mexico
Title BAROMETER FUNCTIONAL LOOP DIAGRAM	Drawn by Paul Yardon
DWG. No. A5500GW007	Date SEPT. 1988

Barometer Block Diagram



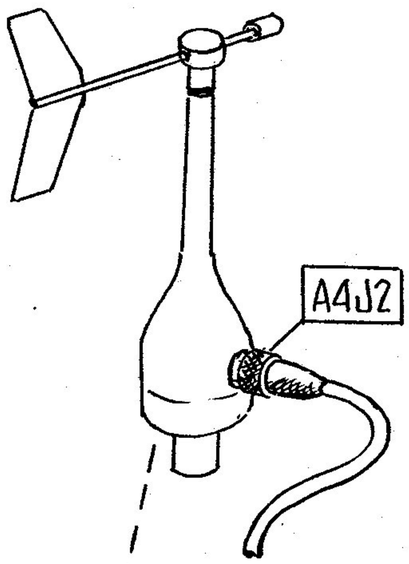


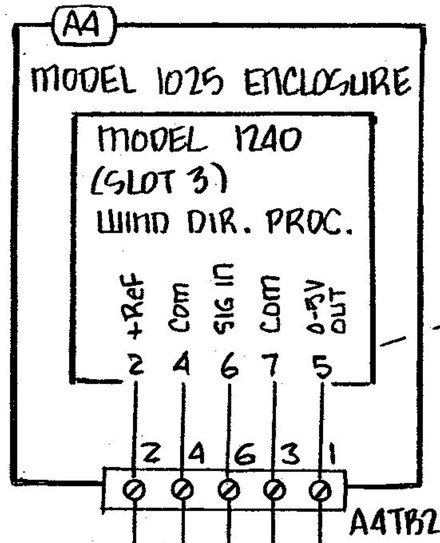


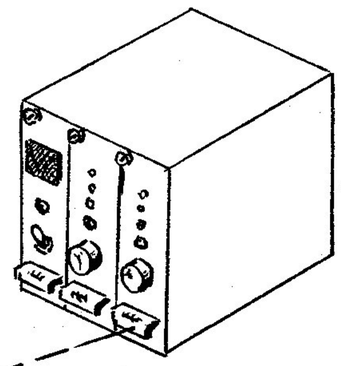


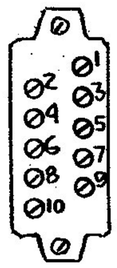
SHEET
of

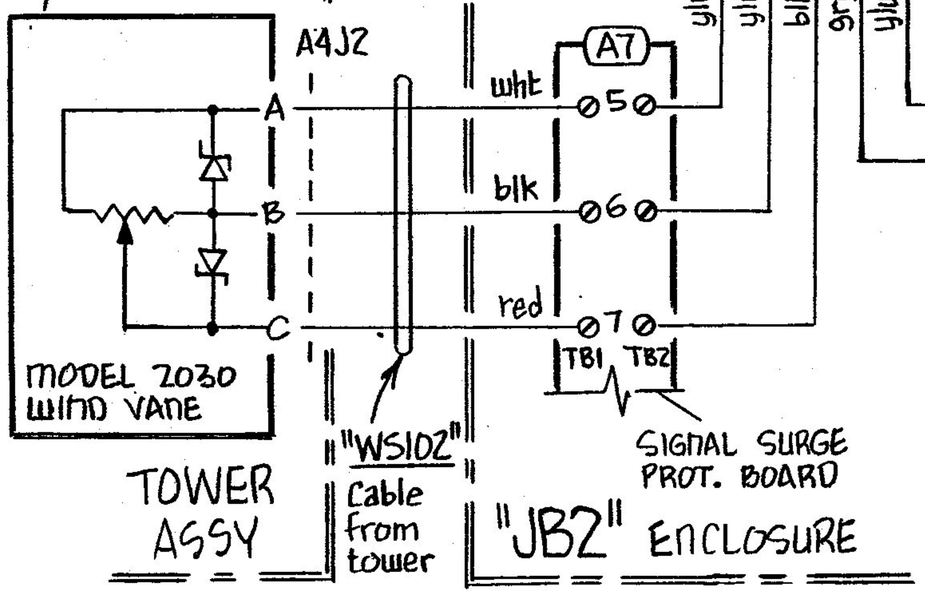
VLBA WEATHER STATION	NATIONAL RADIO ASTRONOMY OBSERVATORY Socorro, New Mexico
Title WIND SPEED FUNCTIONAL LOOP DIAGRAM	Drawn by Paul Harden
DWG. No. A55006WD05	Date SEPT. 1988

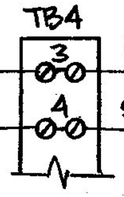


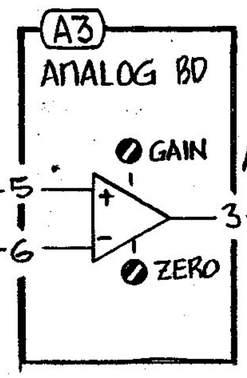


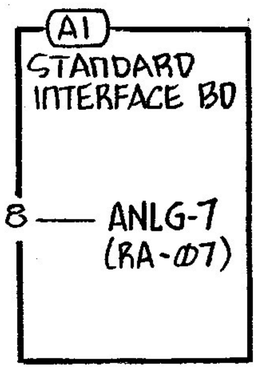








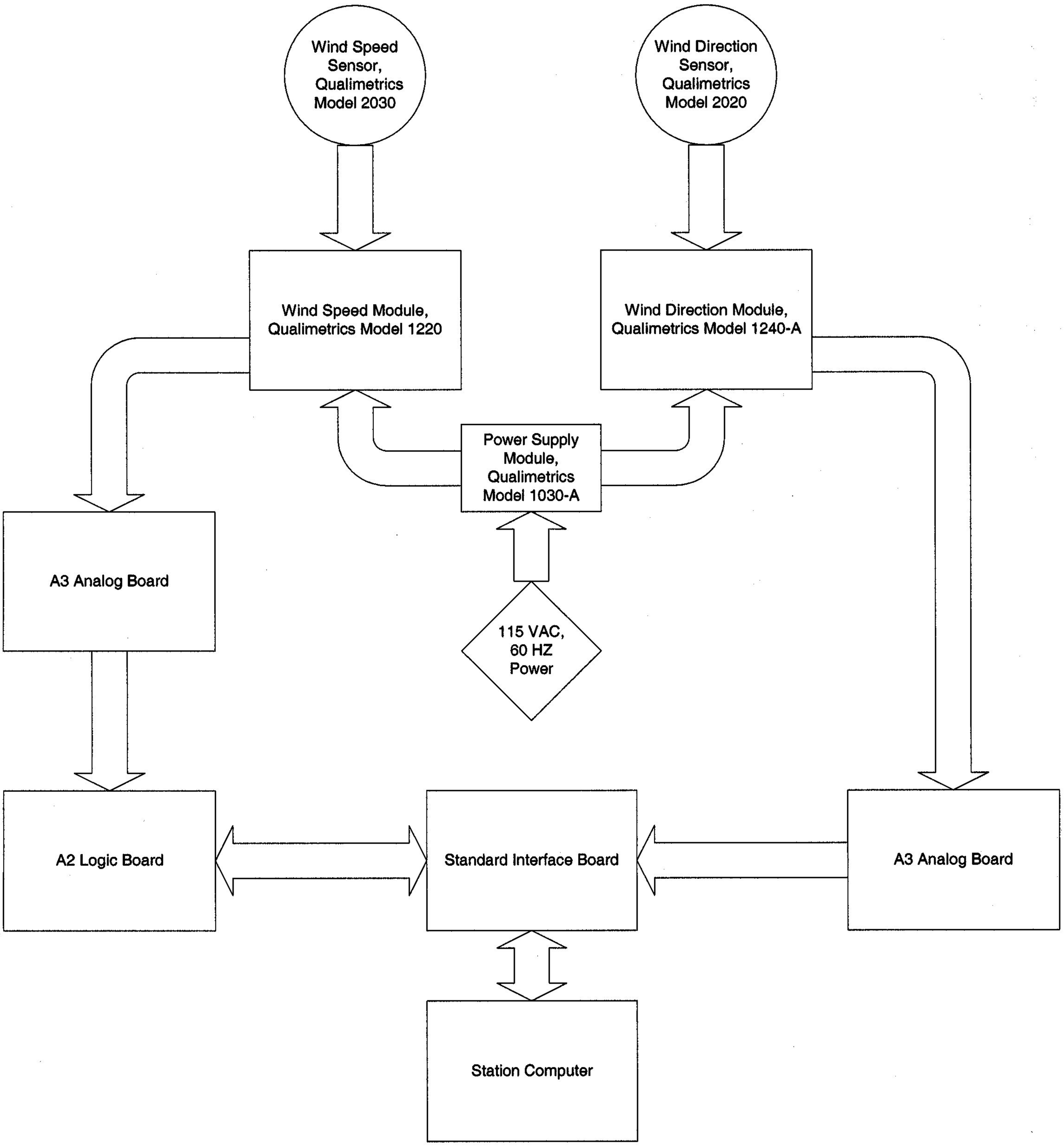




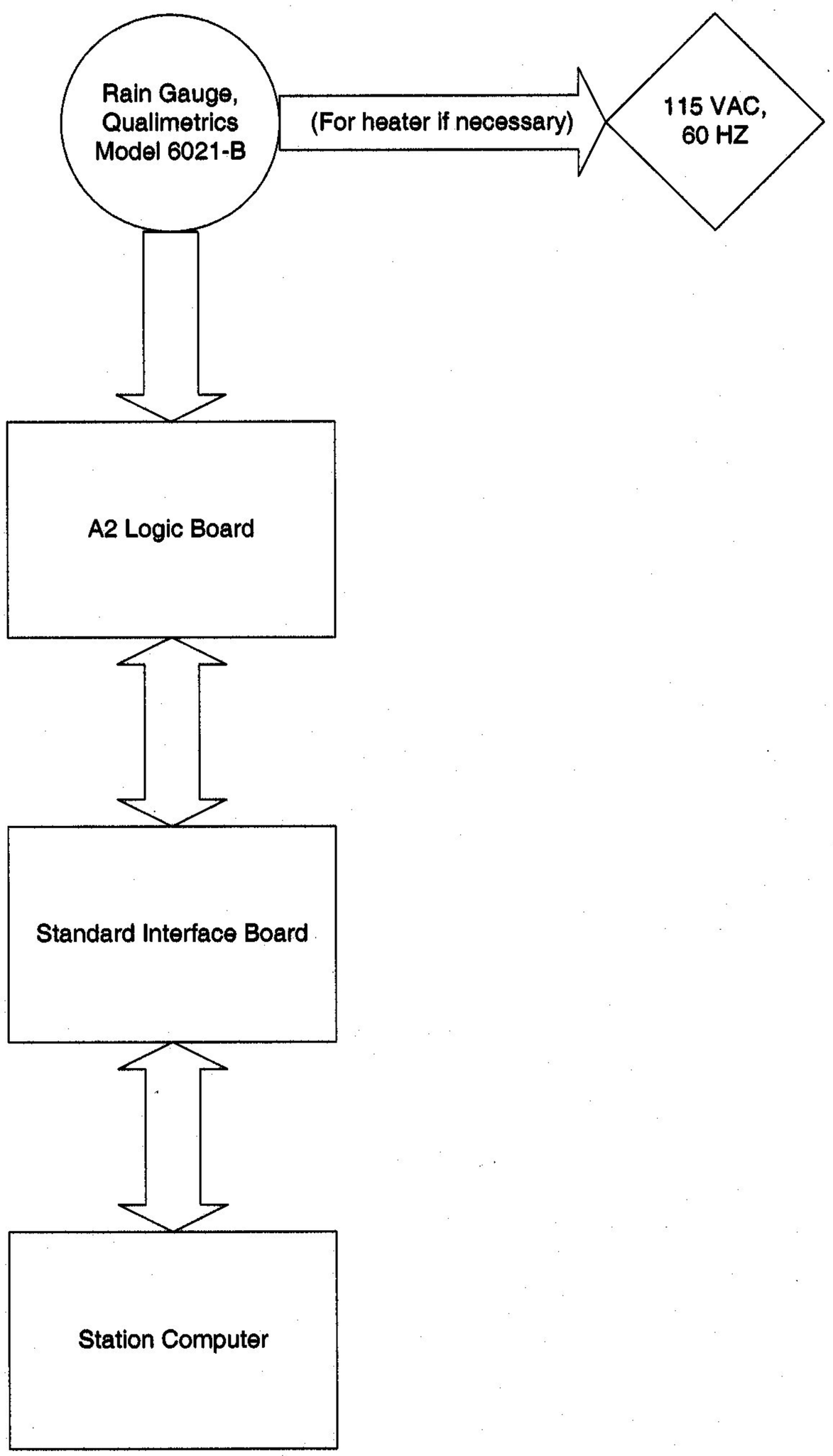
SHEET
of

VLBA WEATHER STATION	NATIONAL RADIO ASTRONOMY OBSERVATORY Socorro, New Mexico
Title WIND DIRECTION FUNCTIONAL LOOP DIAGRAM	Drawn by Paul Harden
DWG. No. A55006W006	Date SEPT. 1988

Windspeed and Wind Direction Block Diagram



Rain Gauge Block Diagram



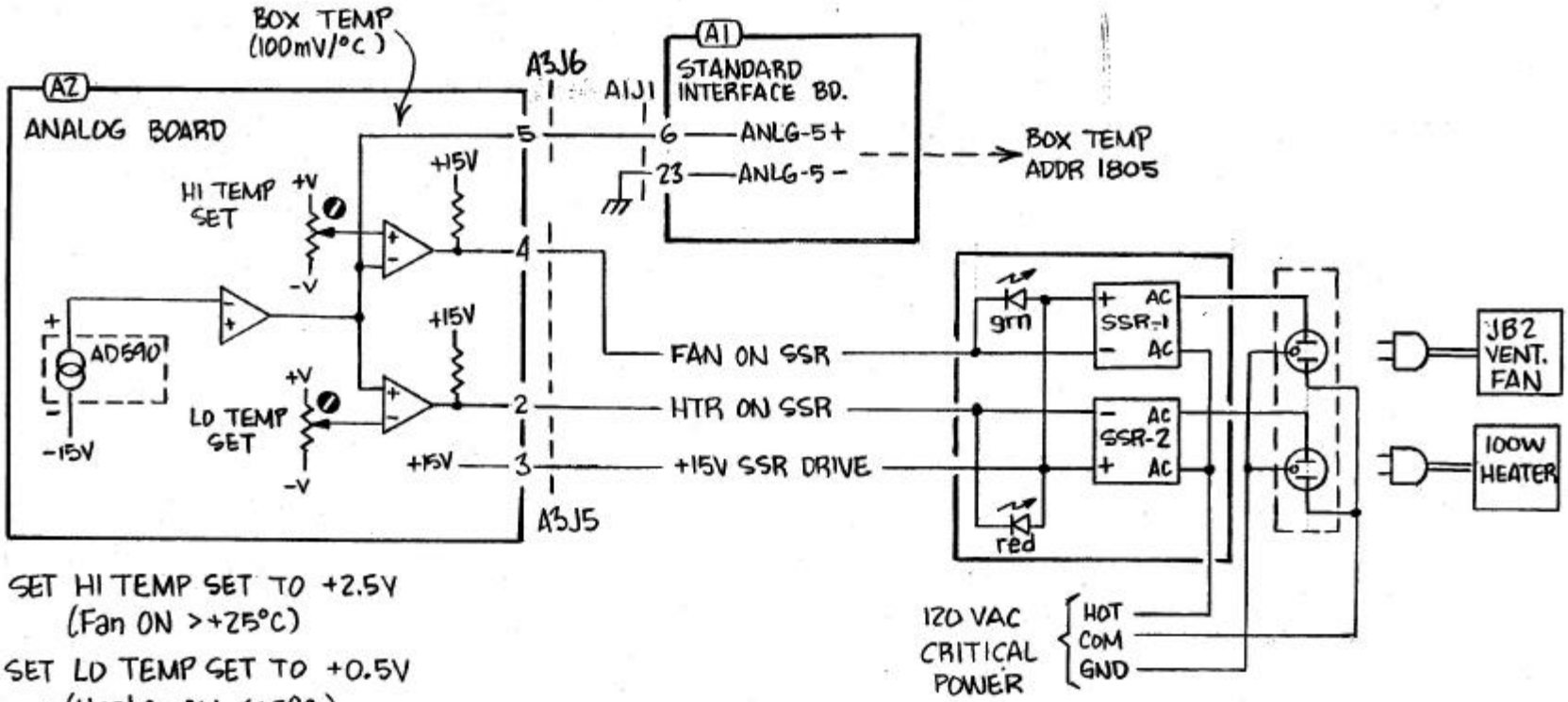
MCB ADDRESS ASSIGNMENTS

SET-ADDRESS DATA
ID = #18
1ST ADDRESS = # 1800
BLOCK SIZE = #40

HEX ADDR		
ANALOG MONITOR	1800	Ground Ref.
	1801	EXTERNAL MUX PORTS
	1802	
	1803	TA (Backup only)
	1804	TD (Backup only)
	1805	Box Temp.
	1806	Wind SPEED
	1807	Wind DIRECTION
	1808	+5V Mon (PS1)
	1809	-15V Mon (PS1)
	180A	+15V Mon (PS1)
	180B	+12V Mon (Wind)
	180C	Baro. +15V Mon.
	180D	
	180E	
	180F	
	1810	TSL heat/cool V.
	1811	TSL -12V Mon.
	1812	TSL +12V Mon.
	1813	TSL +5V Mon.
	1814	
	1815	
	1816	
	1817	
DIGITAL MONITOR	1818	Barometer WD-1
	1819	Barometer WD-2
	181A	TA (TSL Ambient)
	181B	TD (TSL Dew Point)
	181C	Serial Number
	181D	Min./Max. Temp
	181E	Wind Gust latch
	181F	
DIGITAL COMMANDS	1820	
	1821	RESET Barometer
	1822	RESET Temps (Min.-Max.)
	1823	RESET Peak Wind Gust
	1824	
	1825	
	1826	
	1827	

SHEET
of

VLBA WEATHER STATION	NATIONAL RADIO ASTRONOMY OBSERVATORY Socorro, New Mexico
Title: MCB ADDRESSING	Drawn by: P. HARDEN
DWG. No. A55006W010	Date 8/1989



SET HI TEMP SET TO +2.5V
(Fan ON >+25°C)

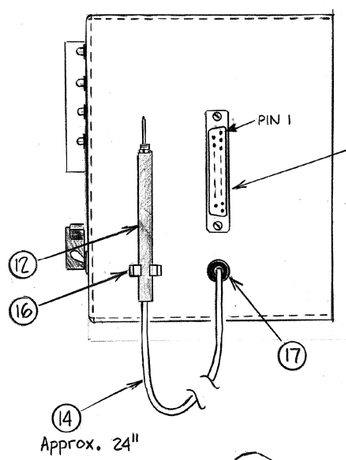
SET LD TEMP SET TO +0.5V
(Heater ON <+5°C)

SHEET
of

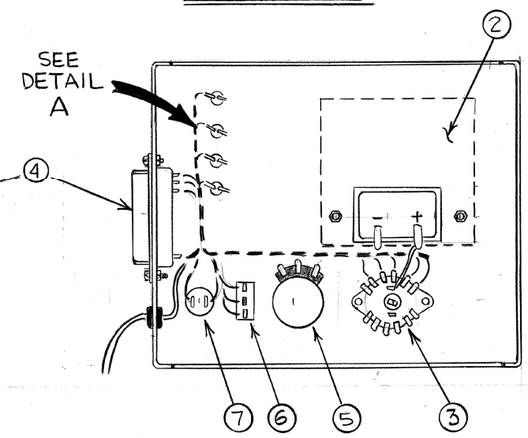
VLBA WEATHER STATION	NATIONAL RADIO ASTRONOMY OBSERVATORY Socorro, New Mexico
Title "JB2" TEMPERATURE CONTROL CIRCUITS	
FUNCTIONAL DIAGRAM	Drawn by Paul Harden
DWG. No. A55006W009	Date AUG. 1989

REV.	DATE	DRAWN BY	APPRV'D BY	DESCRIPTION

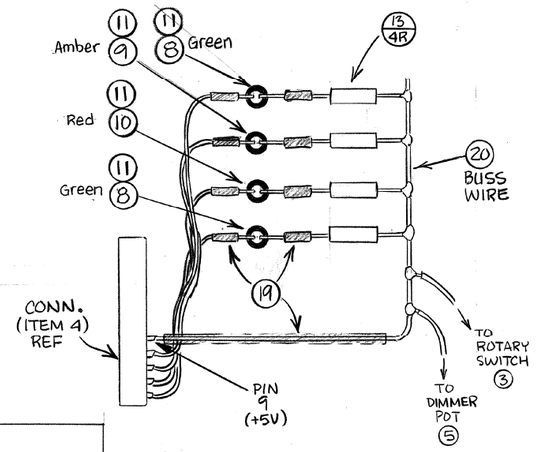
R.H. SIDE

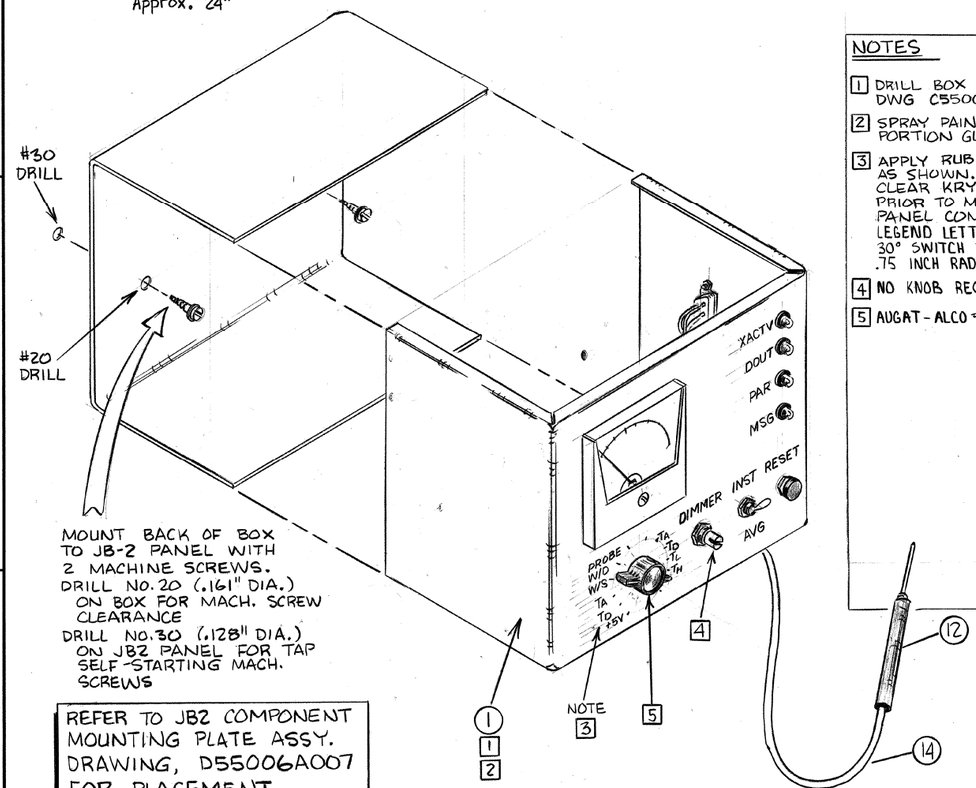


BACK SIDE



DETAIL A - L.E.D.'s





REFER TO JB2 COMPONENT MOUNTING PLATE ASSY. DRAWING, D55006A007 FOR PLACEMENT

NOTES

1. DRILL BOX AS PER NRAO DWG C55006M004
2. SPRAY PAINT FRONT PANEL PORTION GLOSS WHITE
3. APPLY RUB-OFF LETTERS AS SHOWN. PROTECT WITH CLEAR KRYLON SPRAY PRIOR TO MOUNTING FRONT PANEL COMPONENTS. LEGEND LETTERING IS 8 PNT., 30° SWITCH INDEX AND ARE .75 INCH RADIUS AROUND SWITCH.
4. NO KNOB REQUIRED.
5. AUGAT - ALCO # PKP-1948-1/4 KNOB

ITEM	MFR	PART NUMBER		DESCRIPTION / NOTES	QTY
20		AWG20 SOLID		Buss Wire	A/R
19				PVC Sleeve	A/R
18		#6 x 5/8		Self tapping mach. screw	2
17	H.H. SMITH	2170		Grommet, rubber, 3/8" hole	1
16	H.H. SMITH	4084		Component Clip, 3/8" dia.	1
15	H.H. SMITH	2885		Knob, 1/4" shaft	1
14	BELDEN			Wire, #22 str. white	A/R
13	A-B or sim	RN55D-221J		Resistor, 220Ω 1/4W	4
12	H.H. SMITH	317-102		Test Probe, 4" red	1
11	DIALIGHT	515-0005		L.E.D. Mounting Clip	4
10	DIALIGHT	521-9183		L.E.D., Red	1
9	DIALIGHT	521-9176		L.E.D., Amber	1
8	DIALIGHT	521-9175		L.E.D., Green, T-1 3/4	2
7	ALCO	MSPS-103C-2		Switch, push-button, N.O.	1
6	ALCO	MTA-104		Switch, toggle SPST	1
5	A-B or Sim.	RV4N-253A		Potentiometer, 25K, 1" shaft	1
4	TRW/CINCH	DB25P		Connector Plug, D-type, 25 pins	1
3	ALPHA/MOUSER	10YX026	me	Switch, 2 Pole, 6 pos.	1
2	MODUTEC	MSQ-DVV-15U15	me	Panel Meter, -15V-0-+15VDC 2½" sq.	1
1	LMB	No.881 Jiffy Box	dk	Chassis Box, 6"x5"x4" (LWD)	1

BILL OF MATERIALS

ASSY A9

C55006M004	Drill Dwg.
B55006S004	Schematic
NEXT ASSY	USED ON

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ±
3 PLACE DECIMALS (.XXX): ±
2 PLACE DECIMALS (.XX): ±
1 PLACE DECIMALS (.X): ±

MATERIAL:

FINISH:

PROJECT: VLBA WEATHER STATION

TITLE: DATA TAP ASSY A9-1 ASSEMBLY

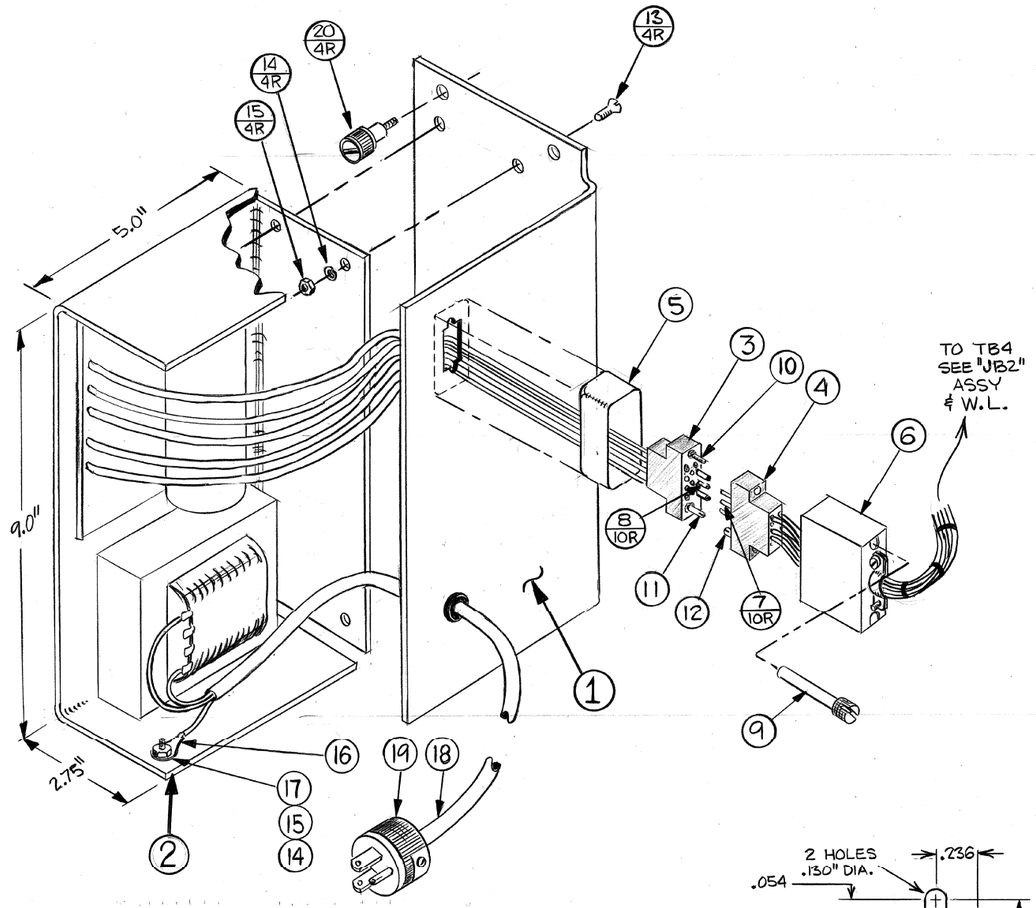
SHEET NUMBER 1/1 | DRAWING NUMBER C55006A009 | REV. | SCALE

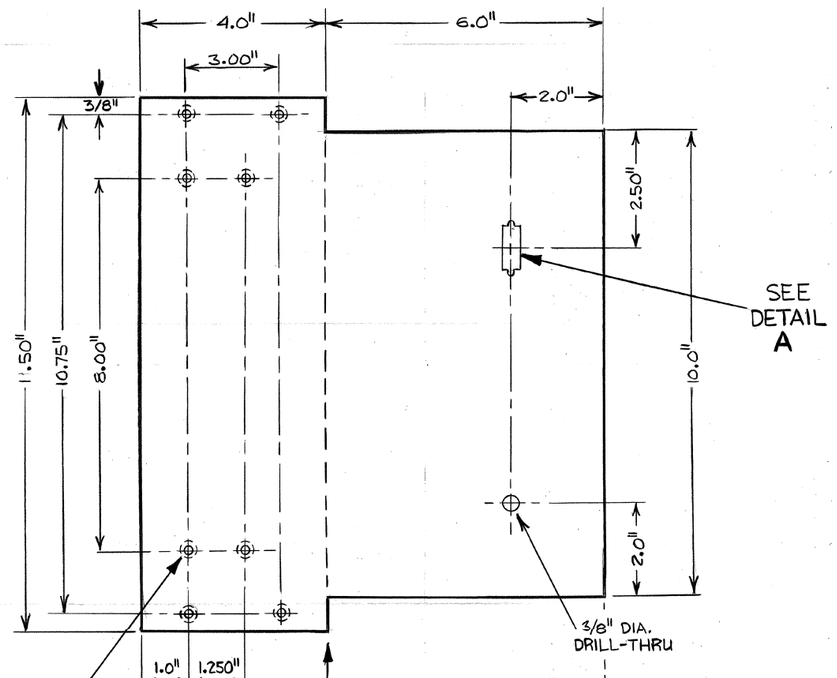
NATIONAL RADIO ASTRONOMY OBSERVATORY
SOCORRO, NEW MEXICO 87801

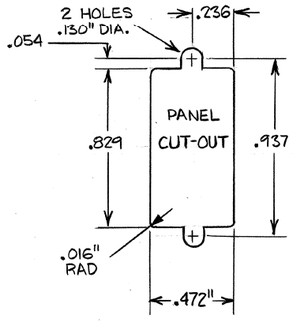
DRAWN BY Paul Harden	DATE 3-89
DESIGNED BY PAUL HARDEN	DATE 11-88
APPROVED BY	DATE

BRUNING 44-231 44427-2

REV.	DATE	DRAWN BY	APPRV'D BY	DESCRIPTION







DETAIL A

SCALE = 2X

TOP VIEW

1/2 SCALE

23				
22				
21	H.H. SMITH		Grommet, 3/8" Dia.	1
20	SOUTHCO		Captive Screw	4
19	HUBBEL	5666-C	AC Plug, Insulwire, str. blade 3-W	1
18			Elect. Cord, 3-wire, 125V 7A	3-FT
17		6-32 x 1/2	Mach. Screw, Pan Hd.	1
16		#6	Solder Lug	1
15		6-32	Nut, Hex	5
14		#6	Washer, Lock	5
13		6-32 x 1/2	Mach. Screw, Flat Hd.	4
12		200834-4	Guide Socket w/ wash. & nut	1
11		200833-4	Guide Pin w/ wash. & nut	1
10		200874-1	Jackscrew Male Pin, Wash., & nut	1
9		201910.-2	Jackscrew, St. Steel, Female	1
8		202726-1	Socket, crimp, #18 (blue)	10
7		202725-1	Pin, crimp, #18 (blue)	10
6		200514-1	Strain Relief, 14-pin	1
5		201347-4	Connector Shell, 14-pin	1
4		201298-3	Connector Block, 14-pin, plugs	1
3	AMP INDUST.	201355-3	Connector Block, 14-pin, socket	1
2	ACDC ELECT. CO.	ETV-401	Power Supply, triple output	1
1	NRAO	C55006A		1

D55006A004	JB2 PNL ASSY
NEXT ASSY	USED ON

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ±
3 PLACE DECIMALS (.XXX): ±
2 PLACE DECIMALS (.XX): ±
1 PLACE DECIMALS (.X): ±

MATERIAL: (ITEM 1)
.093 6061 ALUM.

FINISH:

PROJECT: VLBA WEATHER STATION

TITLE: ASSY "PS1" POWER SUPPLY -ASSEMBLY

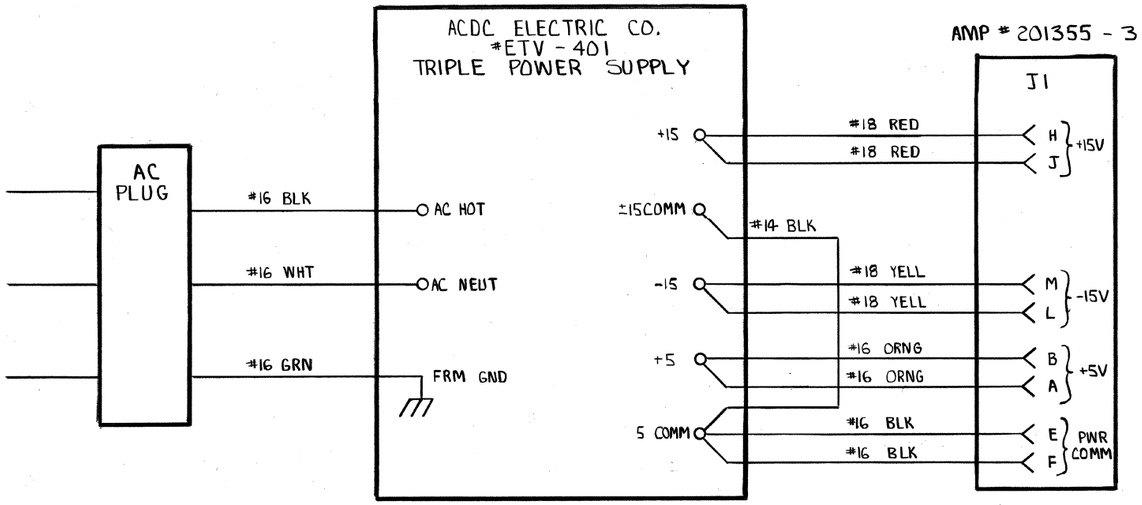
NATIONAL RADIO ASTRONOMY OBSERVATORY
SOCORRO, NEW MEXICO 87801

DRAWN BY	Paul Harden	DATE	9-88
DESIGNED BY	PAUL HARDEN	DATE	9-88
APPROVED BY		DATE	

SHEET NUMBER 1/2 | DRAWING NUMBER C55006A006 | REV. | SCALE

BRUNING 44-231 44427-2

REV.	DATE	DRAWN BY	APPRV'D BY	DESCRIPTION



NEXT ASSY	USED ON

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ± —
3 PLACE DECIMALS (.XXX): ± —
2 PLACE DECIMALS (.XX): ± —
1 PLACE DECIMALS (.X): ± —

MATERIAL: —

FINISH: —

VLBA PROJECT
VLBA WEATHER STATION

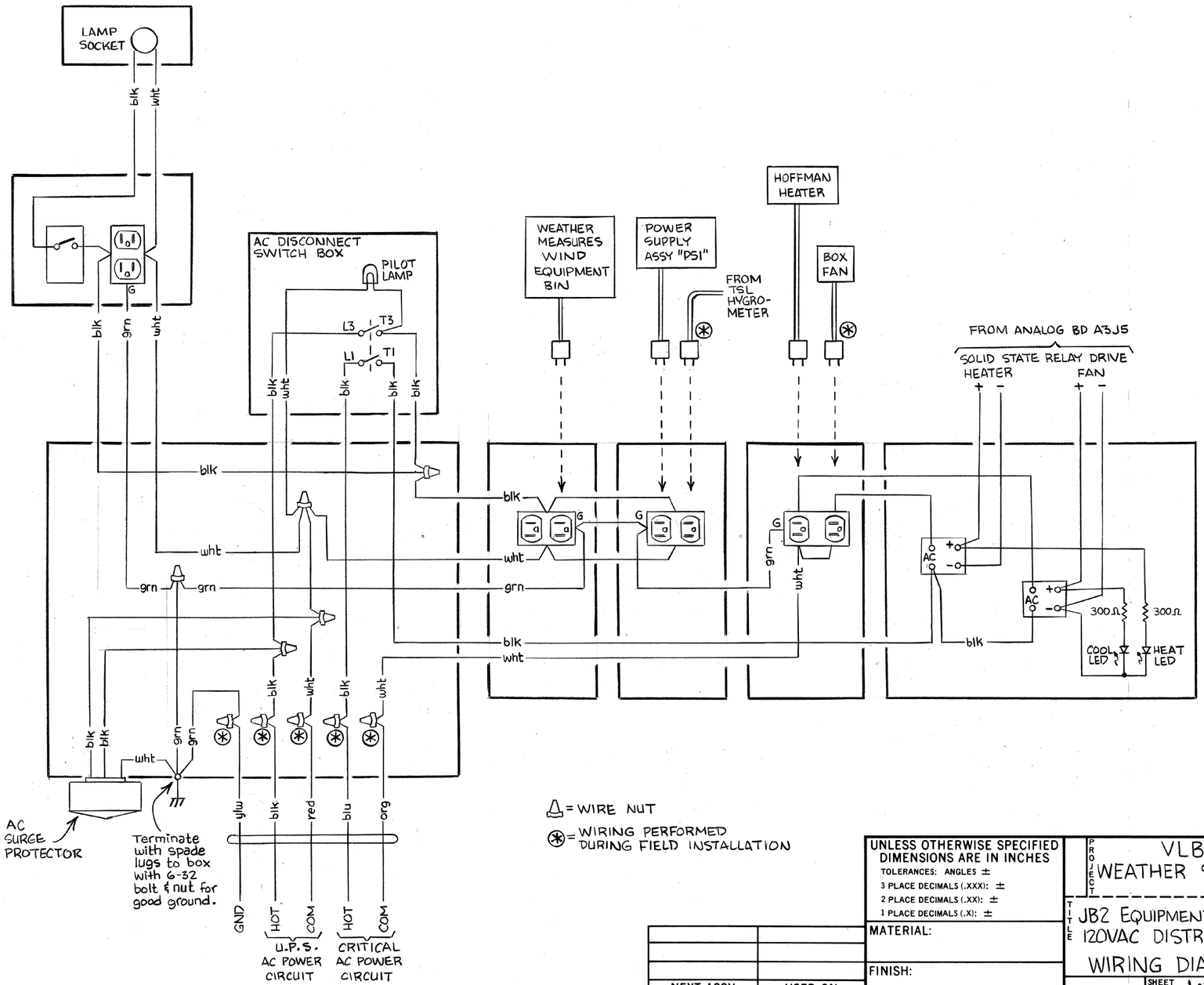
TITLE
ASSY "PS1"
SCHEMATIC DIAGRAM

NATIONAL RADIO ASTRONOMY OBSERVATORY
SOCORRO, NEW MEXICO 87801

DRAWN BY ANDREATTA	DATE 3-89		
DESIGNED BY WEBER	DATE 3-89		
APPROVED BY	DATE		
SHEET NUMBER 2OF 2	DRAWING NUMBER C55006A006	REV.	SCALE —

BRUNING 44-231 44427-2

REV.	DATE	DRAWN BY	APPRV'D BY	DESCRIPTION



△ = WIRE NUT

⊛ = WIRING PERFORMED DURING FIELD INSTALLATION

JB2

NEXT ASSY	USED ON

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ±
3 PLACE DECIMALS (.XXX): ±
2 PLACE DECIMALS (.XX): ±
1 PLACE DECIMALS (.X): ±

MATERIAL:

FINISH:

PROJECT: VLBA WEATHER STATION

TITLE: JB2 EQUIPMENT ENCLOSURE 120VAC DISTRIBUTION WIRING DIAGRAM

SHEET NUMBER 1 OF 1 | DRAWING NUMBER C55006W001 | REV. | SCALE

NATIONAL RADIO ASTRONOMY OBSERVATORY
SOCORRO, NEW MEXICO 87801

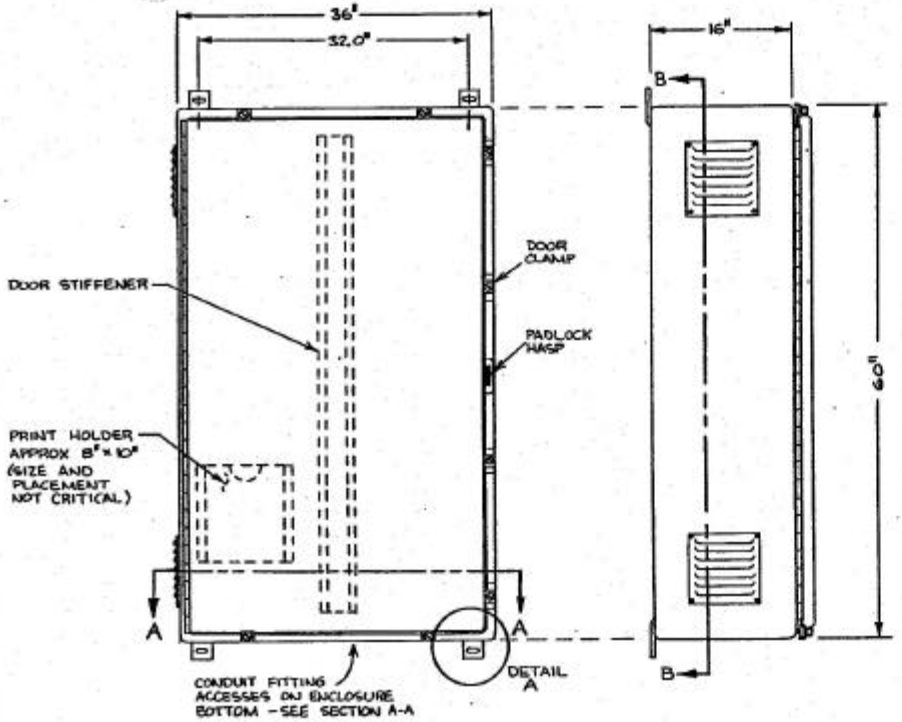
DRAWN BY Paul Harden	DATE 3-89
DESIGNED BY PAUL HARDEN	DATE 8-88
APPROVED BY	DATE

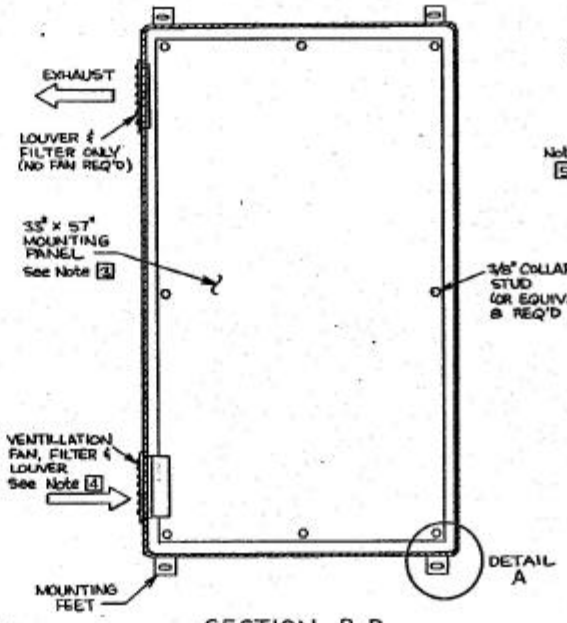
SUPERCEDES C55006W001 DATED 4-87

BRUNING 44-231 444272

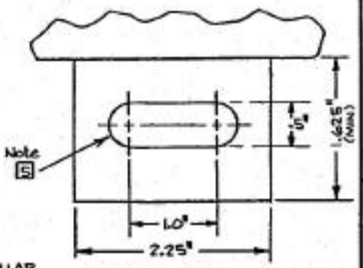
FIG. 16

REV.	DATE	DRAWN BY	APPR'D BY	
A	10-87	P. Harden		6 UNITS EASTER DENVER,

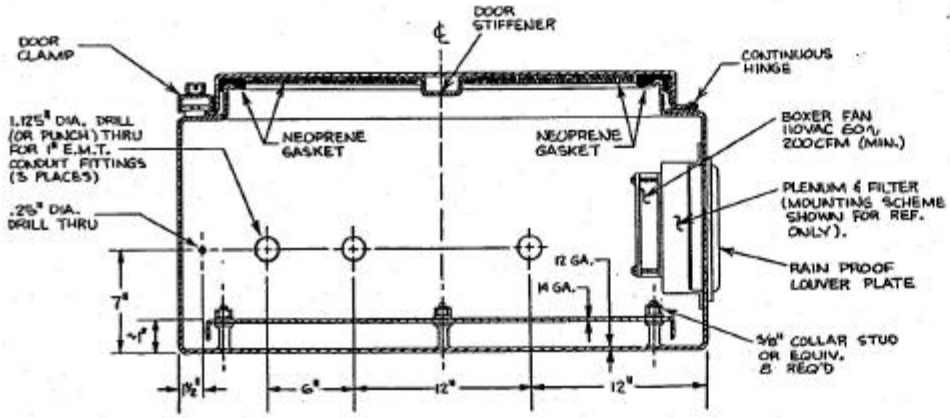




SECTION B-B



DETAIL "A"
MOUNTING FEET (TYP.)



SECTION A-A

NOTES

1. Enclosure to meet NEMA-4 standards for outdoor use. Unit to contain weather instruments, electronics and microprocessor components and to be ventilated.
2. Dimensions and construction approximate; to be similar to Hoffman enclosure type A60H56FLP with continuous hinged door.
3. Panel dimension 33"x 57" should be closely preserved to be consistent with previous existing units. Positions of mounting hardware (collar studs) not critical. Approx. weight = 150-lbs (panel plus equipment).
4. Ventillation components to be specified and provided by vendor. If not assembled or installed by Vendor, all holes and cut-outs to be provided for components supplied.
5. Enclosure to be mounted on a support made of 1⅝" Uni-strut channels and ½" dia. bolts and spring-nuts. (Provided by NRAO)

NEXT ASSY	USED ON

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ±
3 PLACE DECIMALS (.XXX): ±
2 PLACE DECIMALS (.XX): ±
1 PLACE DECIMALS (.X): ±

MATERIAL:

FINISH:

PROJECT: VLBA
TITLE: WEATHER STATION
EQUIPMENT ENCLOSURE MECHANICAL

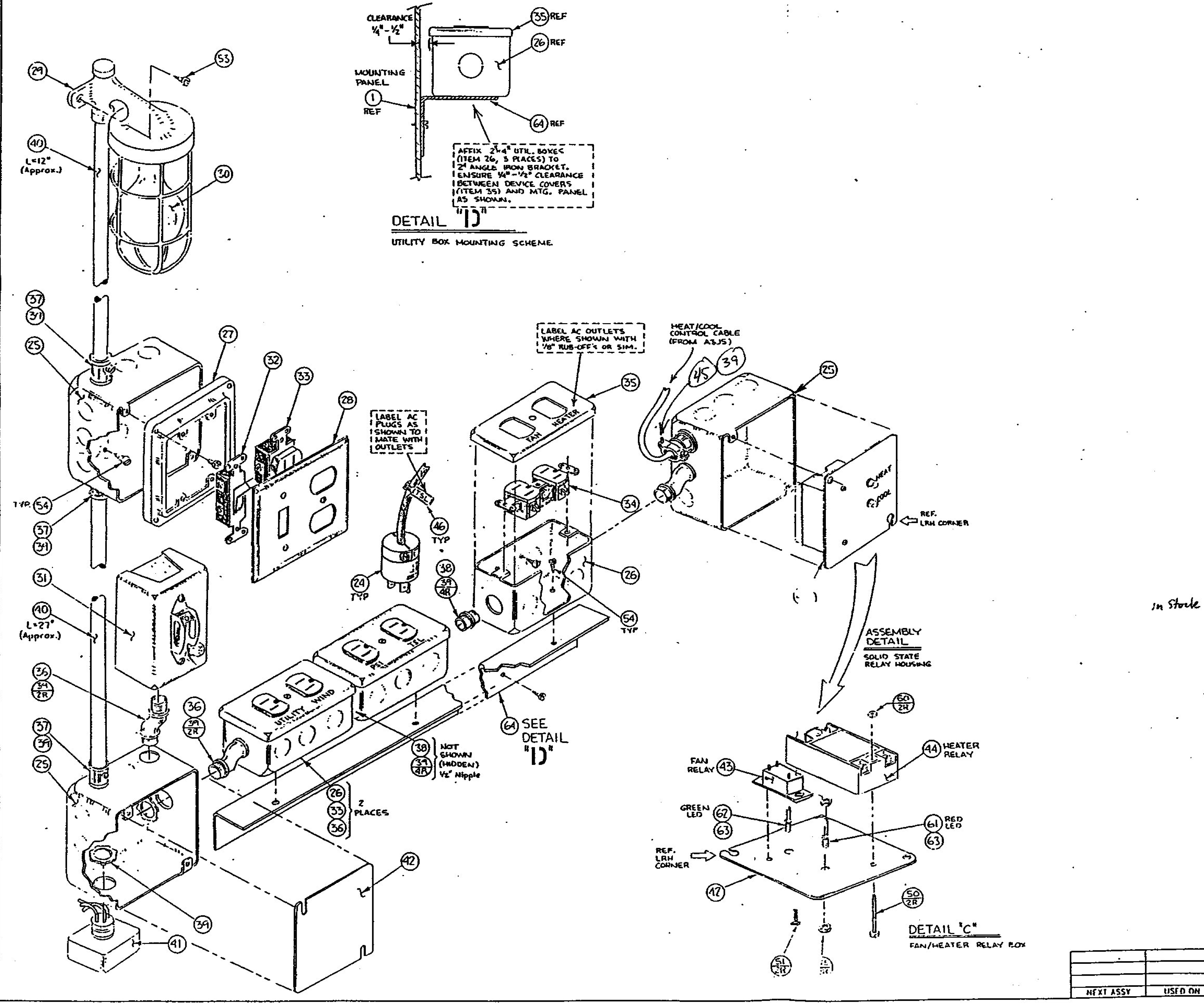
NATIONAL RADIO ASTRONOMY OBSERVATORY
SOCORRO, NEW MEXICO 87801

DRAWN BY P. HARDEN	DATE B-87		
DESIGNED BY P. HARDEN / E. CRAIANI	DATE 9-87		
APPROVED BY	DATE		
SHEET NUMBER 1 OF 1	DRAWING NUMBER C55006M001	REV.	SCALE

BRUNING 44-231 44827

8	7	6	5	4	3	2	1

REV	DATE	DRAWN BY	APPV'D BY	DESCRIPTION



in Stock

ITEM	MFR	PART NO.	DESCRIPTION / NOTES
65		6-32 × 3/8	MACH. SCREW, NYLON
64			2" Angle Iron
63	DIALIGHT	515-0004	LED Series 521 MOUNTING CLIP
62	DIALIGHT	521-9175	LED, T-1¾, GREEN
61	DIALIGHT	521-9193	LED, T-1¾, RED
60		6-32	Nut, hex
59	SOUTHCO	47-10-204-10	Captive Screw, 6-32 Long
58	TECH. SERVICES	1063-301	TSL Display Unit PCB
57		#6	Washer, Flat
56	NRAO	B13050M33	Mtg. Bracket, drilled & tapped
55	SFC TECHNOLOGY	SN-0632	Snap-Nut, 6-32
54		#6 × 3/8	Screw, Sheet Metal, S.T., washer hd
53		#6	Washer, lock
52		6-32 × 1	Mach. Screw, Pan. Hd.
51		6-32 × ½"	Mach. Screw, Pan. Hd.
50		6-32 × 1¼"	Mach. Screw, Pan. Hd.
49	DK.	J213	Spacer, 6-32 × 5/8, Alum. male/female
48			Spacer, 6-32 × 5/8, NYLON
47			Spacer, 6-32 × 3/8, NYLON
46	PANDUIT	PLF1M-CP	Ty-Wrap, marking, 4½"L, ¼" dia.
45	~~RACO~~ T+B	~~3312~~ 3311	Service Entrance Cable Fitting, 2 screw, ½"
44	TELEDYNE	PAN611-2	Solid State Relay, 5V in, 125V 25A Load
43	MAGNECRAFT	226RE7-5A1	Solid State Relay, 5V in, 125V 5A Load
42	RACO	752	Device Cover, Blank, 4" box
41	WEATHERMEASURES	MODEL 1077	Power Line Surge Arrestor, ½" fitting
40	T+B or sim.	½"	EMT Conduit, thinwall
39	T+B or sim.	½"	Rigid Conduit Lock-nut
38	T+B or sim.	½" × SHORT.	Conduit Nipple, threaded, ½"
37	RACO	2602	Connector, Box-½" EMT, Set Screw
36	RACO	1452	Offset Nipple, ½"
35	RACO	864	Util. Box Cover, for flush duplex recep.
34	EAGLE	270-B	Outlet, duplex with separate ckts, 125V 15A
33	HUBBLE or sim.	5262-BRN	Outlet, duplex, 125V 15A, 3-wire, str. blade
32	G-E or sim.	1201-1L-PLC	Lighted Toggle Sw., 120V 15A, lighted when of
31	SQUARE-D	KG-1A	AC Snap Switch with indicator, 120VAC 30
30	G-E or sim.	120VAC, 40W	Bulb, incandescent
29	Appleton	VD1050G	Lighting Fixture & Guard, ½" EMT
28	RACO	[illegible] 8400 SUL	Surface Cover, 2-dbl. recep., 4" sq., ½" D
27	RACO	#777	Device Cover, 2-recep., 4" sq. raised ¼"
26	RACO	#670	Outlet Box, 2⅛"W × 4" × 2⅛"D, ½" KO's
25	RACO	#230	Outlet Box, 4" × 4" × 2⅛"D, ½" KO'S
24	HUBBELL	5666C	AC Plug, Insulwire 3-wire Straight Blade
23	AMP	201298-3	"PS1-J1"
22	CINCH/TRW	50-44A-30	"A5J4"
21	CINCH/TRW	50-20A-30	"A3J4, J6", "A4-J1"
20	ELECTROVERT	25-600-0653	"A3J2, J3, J7"
19	ELECTROVERT	25-600-0453	"A3J1, J5"
18	CINCH/TRW	50-100C-10-1	"A2J1"
17	AMPHENOL	DB-25-S	Connector "A1J2", "A9J1"
16	AMPHENOL	DD-50-S	Connector "A1J1"
15	NRAO	D55006A	Hinged Mounting Bracket (For Assy A4)
14	CINCH/TRW	~~6-141~~ 10-142	"TB4" Barrier Strip, 10-term. #8 screw
13	TAYLOR or Sim.	99010	Wire Duct Cover, 1"
12	TAYLOR or Sim.	91006	Wire Duct, PVC, 1"×1" Channel
11	NRAO	C55006A004	ASSY PS1 - Power Supply Assy
10	NRAO	C55006A	ASSY A9 - Data Tap Assy's
9	HOFFMAN	A-DAH1001FT	ASSY A8 (Plo) - Electric Heater, 100W
8	WEATHERMEASURES	Model 10643	ASSY A7 - Signal Lines Protection Board
7	A.I.R.	Model AIR-DB-2AX	ASSY A6 - Digital Barometer
6	TECH. SERVICES	Model 1083	ASSY A5-3 TSL Hygrometer, Receiver Bd
5	WEATHERMEASURES	Model 1025	ASSY A4 - Wind Instrumentation
4	NRAO	D55006A002	ASSY A3 - Analog Board
3	NRAO	D55006A00	ASSY A2 - Logic Board Assy
2	NRAO	D55001A004	ASSY A1 - Standard Interface Board
1(B)	EASTER-OWENS	Per Dwg. C55006M001	MOUNTING PANEL
1(A)	HOFFMAN	A60P16	MOUNTING PANEL

BILL OF MATERIALS

MAR 21 1989

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ±
3 PLACE DECIMALS ±
2 PLACE DECIMALS ±
1 PLACE DECIMALS ±
MATERIAL
FINISH:

NEXT ASSY	USED ON

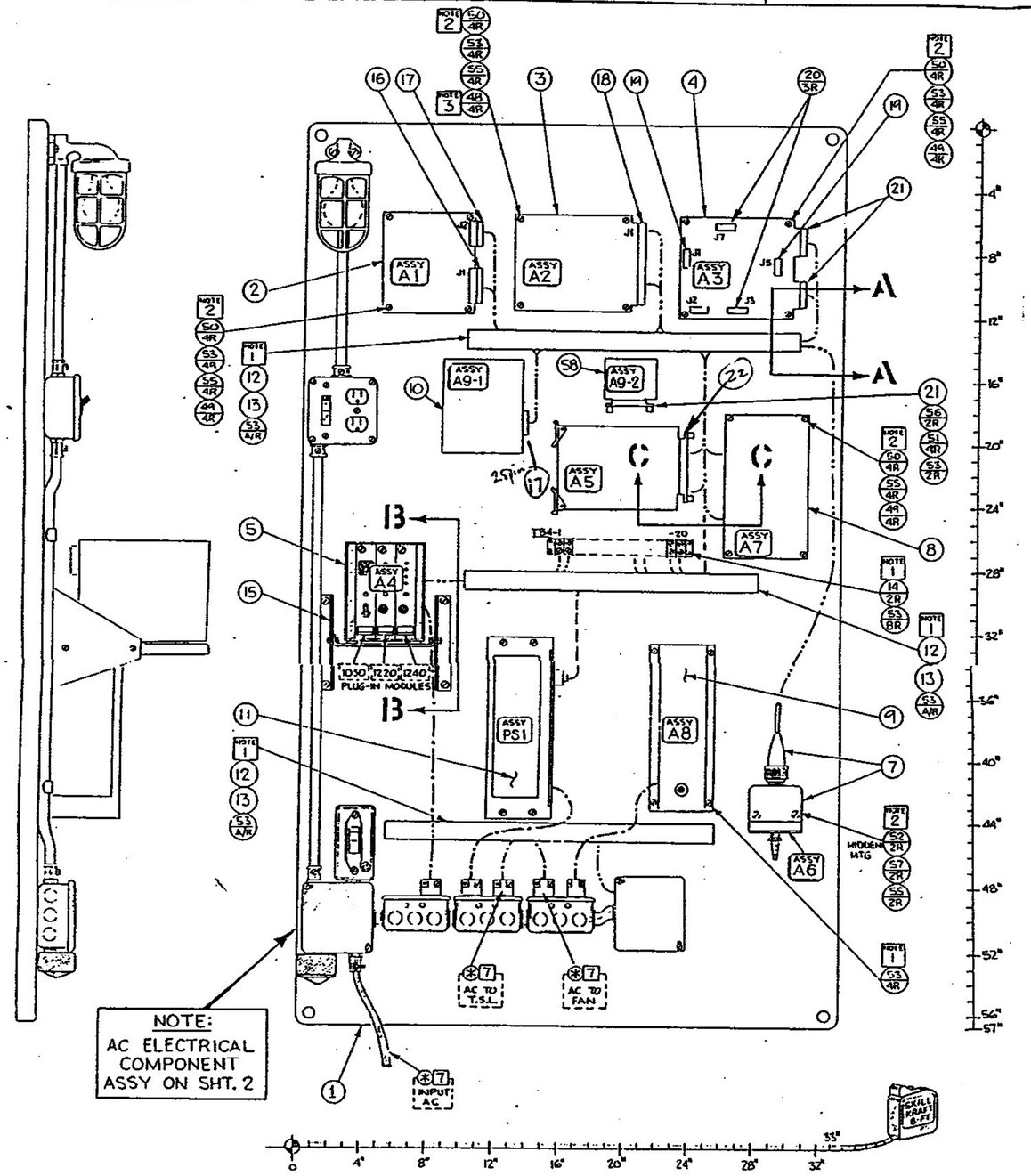
VLBA WEATHER STATION

"JB2" COMPONENT MOUNTING PLATE - ASSEMBLY

NATIONAL R[ADIO] ASTRONO[MY] OBSERVAT[ORY]

SHEET 2 OF 2 D55006A007

ORDER MASTER 4/89

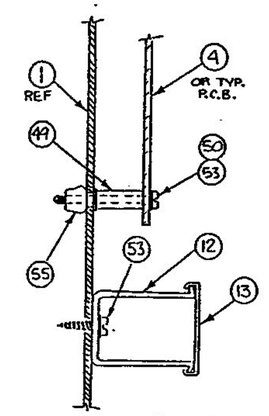


CABLING LEGEND

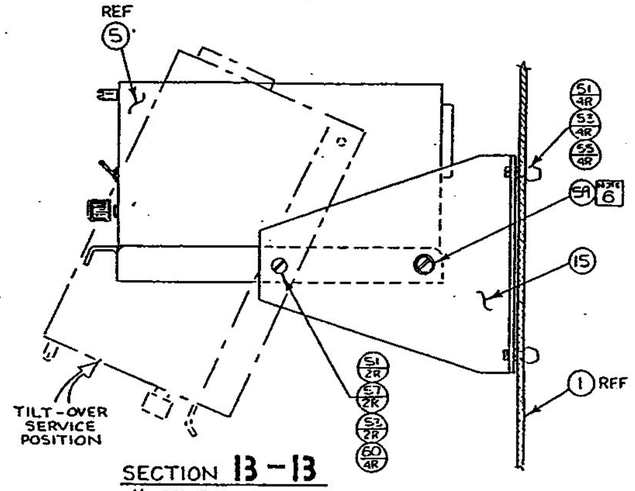
- —·—·— 120V AC WIRING
- — — — DC POWER WIRING
- —··—··— SIGNAL & CONTROL

NOMENCLATURE OF "ASSY" NUMBERS

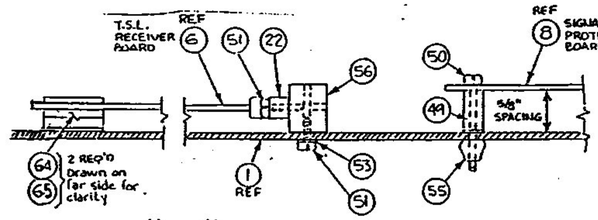
- A1 STANDARD INTERFACE BOARD
- A2 LOGIC BOARD
- A3 ANALOG BOARD
- A4 WIND SIGNAL PROCESSORS
- A5 TSL RECEIVER BOARD
- A6 A.I.R. DIGITAL BAROMETER
- A7 SIGNAL PROTECTION BOARD
- A8 BOX HEATER
- A9 DATA TAP (2 UNITS)



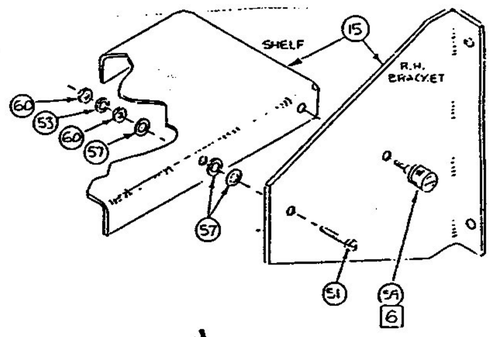
SECTION A-A
SCALE: 1:1
TYPICAL MOUNTING SCHEME



SECTION 13-13
1/2 SCALE
ASSY "A4" WIND ELECTRONICS & MOUNTING SHELF



SECTION C-C
SCALE 1:1
MOUNTING SCHEME
TYPICAL ITEMS 6, 8, 10



DETAIL A (EXPLODED VIEW)
NO SCALE
WIND INSTRUMENT MOUNTING SHELF ASSEMBLY

ASSEMBLY NOTES

1. ITEMS SHOWN ARE AFFIXED TO PANEL USING ITEM 55, #6 SHEET METAL SCREWS. SEE DETAIL ON SECTION A-A. (TYP.)
2. ITEMS SHOWN ARE AFFIXED TO PANEL USING ITEMS 50 & 55, 6-32 MACH. SCREWS AND 6-32 SNAP NUTS. SNAP NUTS MOUNTED INTO PANEL HOLES. SEE DETAIL ON SECTION A-A. (TYP.)
3. LOGIC BOARD (ITEM 3) MUST BE MOUNTED USING NYLON SPACERS (ITEM 48) AND NYLON SCREWS (ITEM 65)
4. ASSY A5-6 TSL RECEIVER BD. MUST BE MOUNTED USING NYLON SPACERS (ITEM 47)
5. DRILL PANEL PER NRAD DWG. D55006M003.
6. SOUTHCO CAPTIVE SCREW (ITEM 59) REQUIRES SPECIAL TOOL FOR INSERTION
7. ASSEMBLY OF ITEM SHOWN IS PART OF FIELD INSTALLATION (NOT A FABRICATION ITEM)

PARTS LIST/B.O.M. ON SHT. 2

MAR 2 1 1989

J1

D55006	AC WIRING
D55006M003	DRILL DWG.
A55006B006	B.O.M.
D55006A004	J62 TOP ASSY
NEXT ASSY	USED ON

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ±
3 PLACE DECIMALS [.XXX] ±
2 PLACE DECIMALS [.XX] ±
1 PLACE DECIMALS [.X] ±
MATERIAL:
FINISH:

VLBA WEATHER STATION

"J62" COMPONENT MOUNTING PLATE - ASSEMBLY

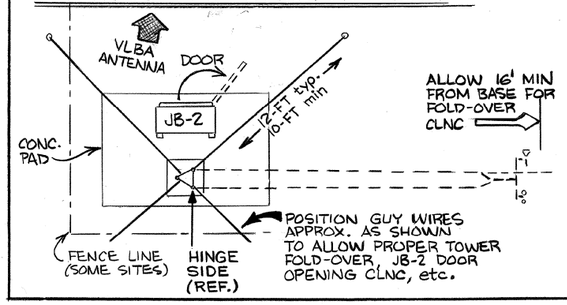
NATIONAL ASTRONOMY OBSERVATORY

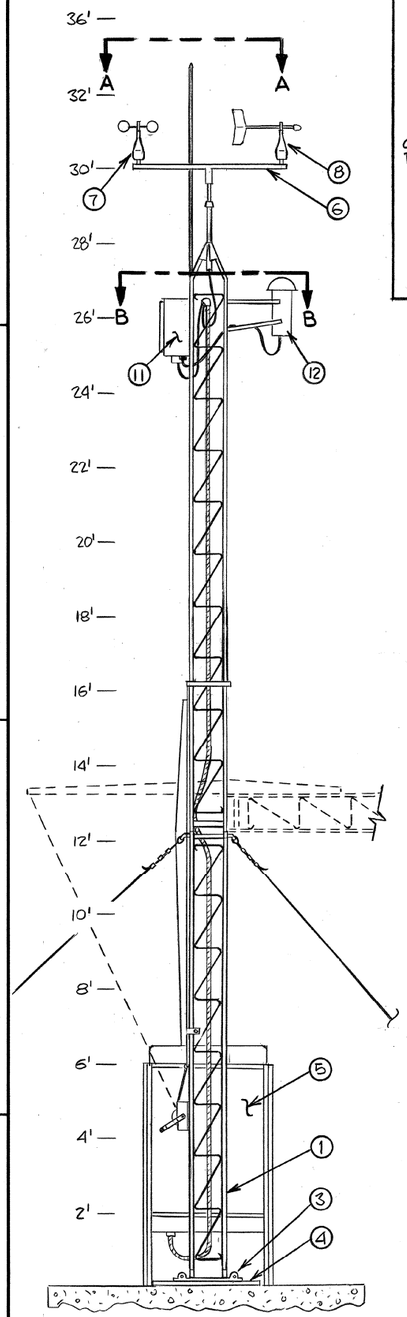
SHEET 1 OF 2 D55006A007

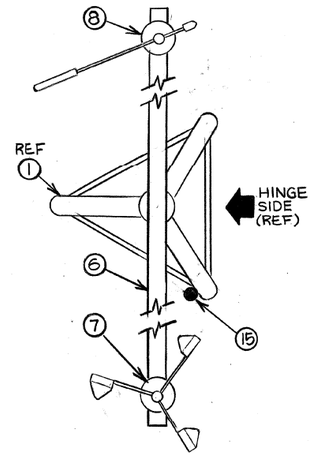
ORDER MASTER 4/89

REV.	DATE	DRAWN BY	APPRV'D BY	DESCRIPTION

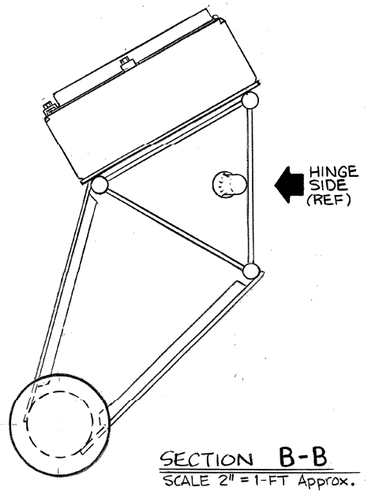
GENERAL WS ORIENTATION



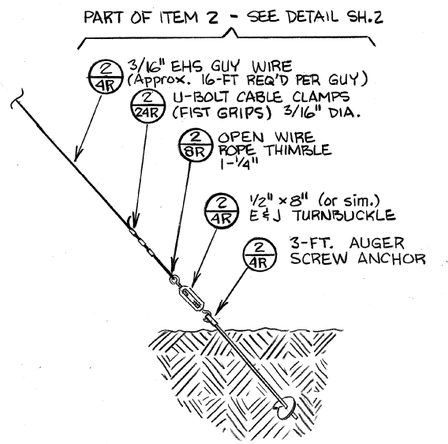




SECTION A-A
SCALE 2" = 1-FT Approx.



SECTION B-B
SCALE 2" = 1-FT Approx.



#	QTY	DESCRIPTION	MFR/PART NO.
20	4	Sheet Metal Screws, S.T.	
19	10	1" Right Angle Cond. Clamp	UBC-100
18	2	1" PVC Female Adapter	
17	3	1" Insulated Str. Conn.	
16	35'	Jacketted Wire, single cond.	THHN 1/0
15	1	Brass Ground Rod	5/8" x 8-ft.
14	1	1" Service Entry Clamp	Weaver #EEH1
13	35'	1" Liquid Tight Flex. Conduit	Type UA 1" x 35 Ft.
12	1	Aspirator/Sensor Assy	TSL Model 1063
11	1	Hygrometer Transmitter	TSL Model 1063
10	50'	Cable, 4-cond. #T600504	Weather Measures
9	50'	Cable, 3-cond. #T600503	Weather Measures
8	1	Wind Vane, #2020	
7	1	Anemometer, #2030	
6	1	Cross Arm Assy, #2023	
5	1	NEMA-4 Elect. Jct. Box	Hoffman/E. Owens
4	1	Adapter Plate	NRAO D55006M002
3	1	Hinged Base Plate	ROHN BPH25G
2	1	Guy Wire Kit	ROHN
1	1	30-FT Foldover Tower	ROHN FK-25G-30

NEXT ASSY	USED ON

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ±
3 PLACE DECIMALS (.XXX): ±
2 PLACE DECIMALS (.XX): ±
1 PLACE DECIMALS (.X): ±

MATERIAL:

FINISH:

VLBA PROJECT: VLBA WEATHER STATION

TITLE: SITE INSTALLATION DRAWINGS

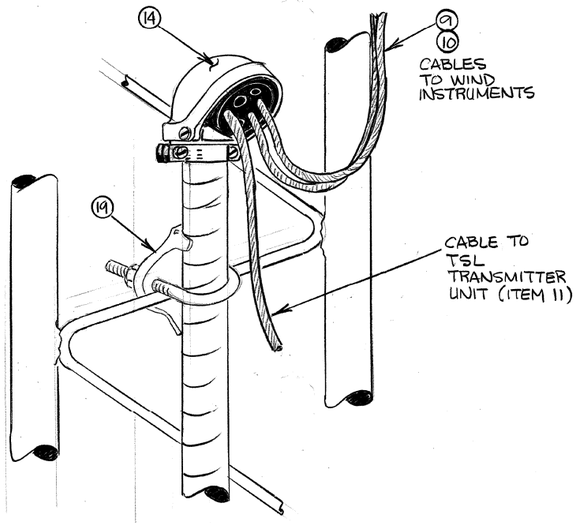
NATIONAL RADIO ASTRONOMY OBSERVATORY
SOCORRO, NEW MEXICO 87801

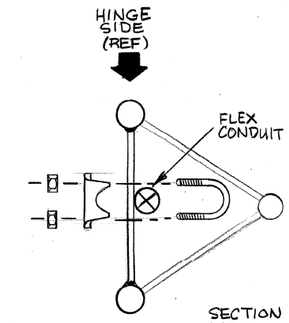
DRAWN BY Paul Harden	DATE 9-88
DESIGNED BY PAUL HARDEN	DATE 9-88
APPROVED BY	DATE

SHEET NUMBER 1 OF 3 | DRAWING NUMBER C55006A008 | REV. | SCALE

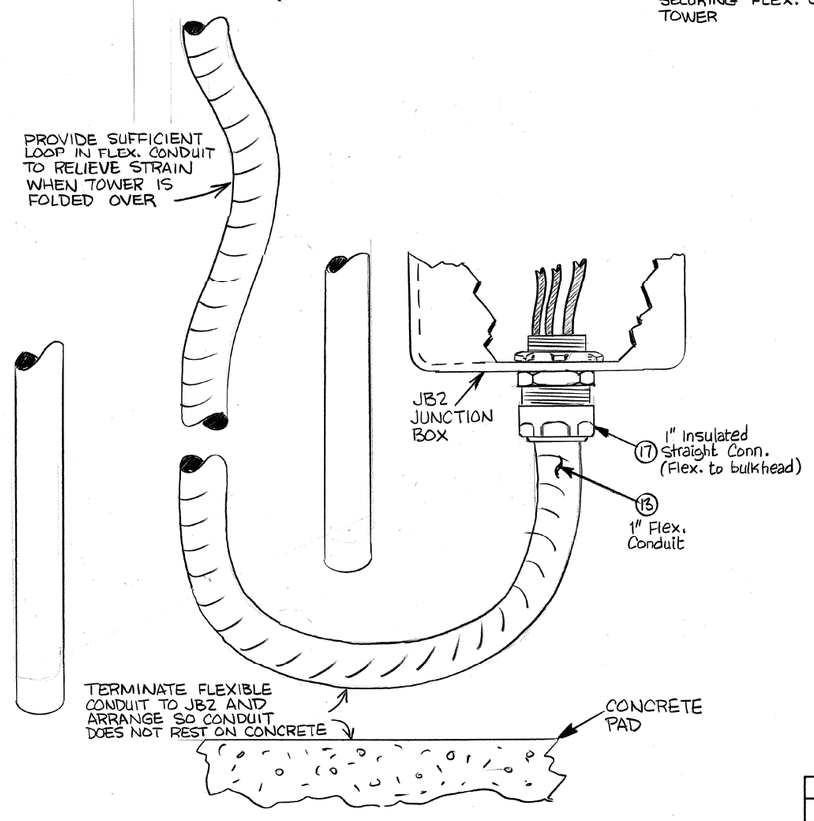
BRUNING 44-231 44427-2

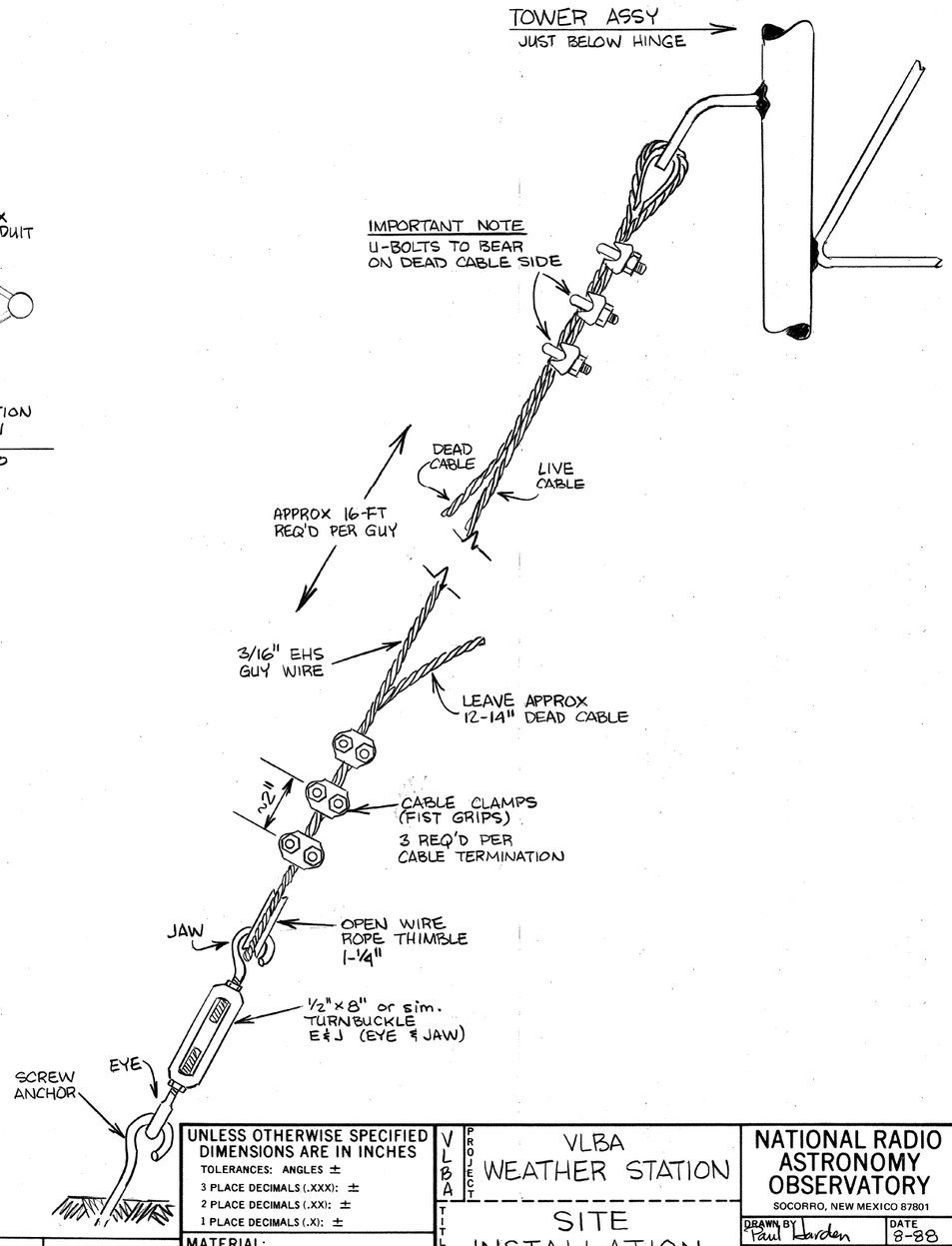
REV.	DATE	DRAWN BY	APPRV'D BY	DESCRIPTION





DETAIL "A"
SECURING FLEX. CONDUIT TO TOWER





NEXT ASSY	USED ON

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ±
3 PLACE DECIMALS (.XXX): ±
2 PLACE DECIMALS (.XX): ±
1 PLACE DECIMALS (.X): ±

MATERIAL:

FINISH:

VLBA PROJECT: VLBA WEATHER STATION

TITLE: SITE INSTALLATION DRAWINGS

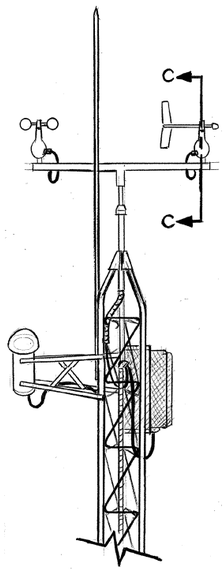
NATIONAL RADIO ASTRONOMY OBSERVATORY
SOCORRO, NEW MEXICO 87801

DRAWN BY Paul Harden	DATE 8-88
DESIGNED BY	DATE
APPROVED BY	DATE

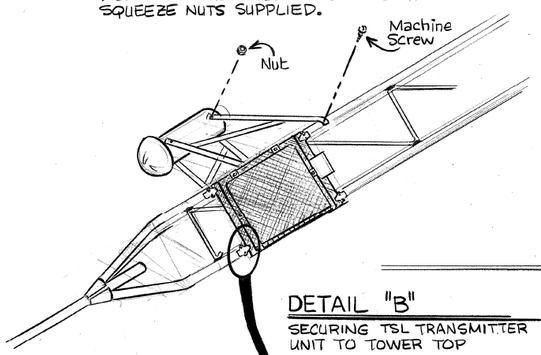
SHEET NUMBER 2 OF 3 | DRAWING NUMBER C55006A008 | REV. | SCALE

BRUNING 44-231 44427-2

REV.	DATE	DRAWN BY	APPRV'D BY	DESCRIPTION

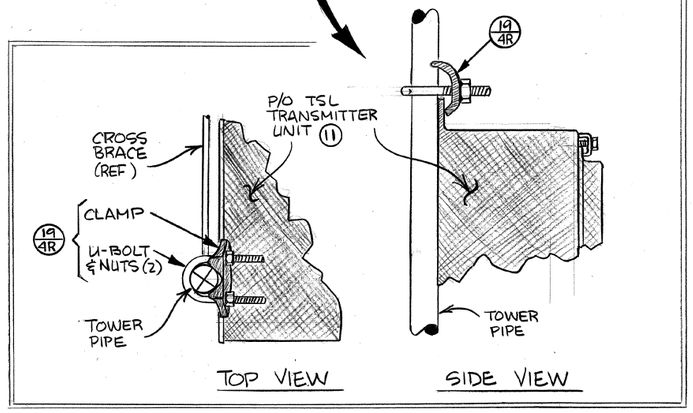


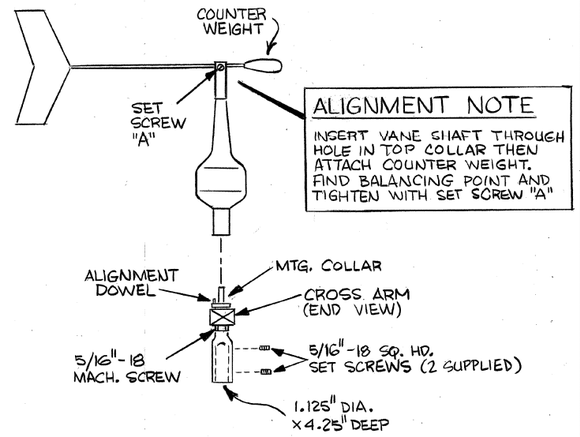
MOUNT TSL ASPIRATOR MOUNTING STRUTS (PART OF ITEM 12) TO TOWER WITH SELF-TAPPING METAL SCREWS. PRE-DRILL STARTING HOLES 4 PLACES. ASPIRATOR MOUNTED TO STRUTS WITH SQUEEZE NUTS SUPPLIED.



DETAIL "B"

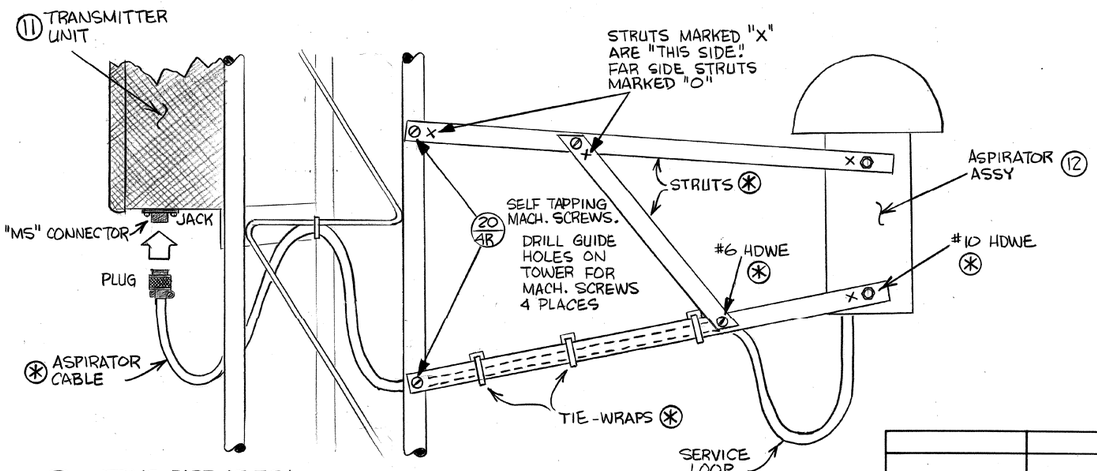
SECURING TSL TRANSMITTER UNIT TO TOWER TOP





ALIGNMENT NOTE

INSERT VANE SHAFT THROUGH HOLE IN TOP COLLAR THEN ATTACH COUNTER WEIGHT. FIND BALANCING POINT AND TIGHTEN WITH SET SCREW "A"



(*) = ITEMS PART OF T.S.L. UNIT (ITEM 11+12) INSTALLATION KIT

NEXT ASSY	USED ON

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ±
3 PLACE DECIMALS (.XXX): ±
2 PLACE DECIMALS (.XX): ±
1 PLACE DECIMALS (.X): ±

MATERIAL:

FINISH:

VLBA PROJECT: VLBA WEATHER STATION

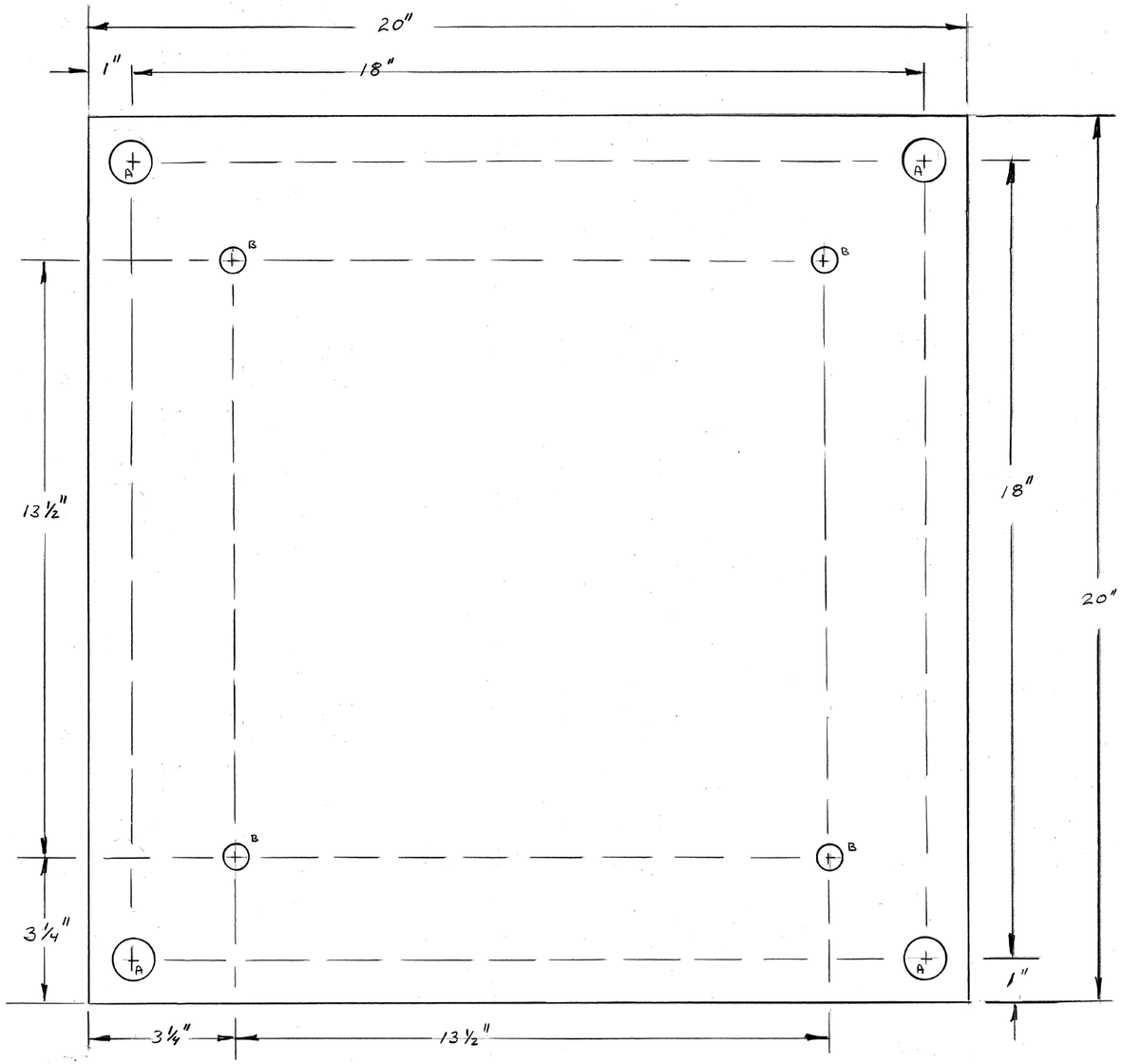
TITLE: SITE INSTALLATION DRAWINGS

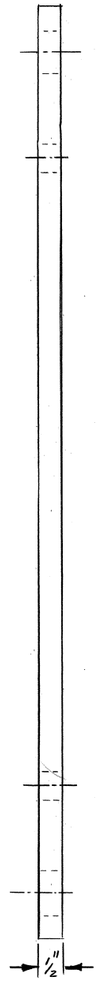
NATIONAL RADIO ASTRONOMY OBSERVATORY
SOCORRO, NEW MEXICO 87801

DRAWN BY Paul Harden	DATE 9-88		
DESIGNED BY PAUL HARDEN	DATE 9-88		
APPROVED BY	DATE		
SHEET NUMBER 3 OF 3	DRAWING NUMBER C55006A008	REV.	SCALE

BRUNING 44-231 44427-2

REV.	DATE	DRAWN BY	APPRV'D BY	DESCRIPTION





HOLE TABLE: A - 1.000 DIA, THRU, 4 PLACES
B - 0.625 DIA, THRU, 4 PLACES

FABRICATION TOLERANCES: 1) EXTERNAL 20" X 20" DIMENSIONS - ± 1/8"
2) 18"X18" & 13½"X13½" HOLE PATTERNS - ± 1/16"
3) HOLE SIZES - ± 1/32"

REMOVE ALL SHARP CORNERS & EDGES & CHAMFER HOLES

NEXT ASSY	USED ON

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ± TOL
3 PLACE DECIMALS (.XXX): ± .1N
2 PLACE DECIMALS (.XX): ± NOTES
1 PLACE DECIMALS (.X): ± AT LEFT

MATERIAL: ½" MILD STEEL PLATE

FINISH: ZINC-BASED PRIMER

VLBA PROJECT: VLBA WEATHER STATION

TITLE: ROHN TOWER ADAPTOR PLATE

NATIONAL RADIO ASTRONOMY OBSERVATORY
SOCORRO, NEW MEXICO 87801

DRAWN BY	DATE
D. WEBER	1/8/88
DESIGNED BY	DATE
APPROVED BY	DATE

SHEET NUMBER 1/1 | DRAWING NUMBER C55006M002 | REV. | SCALE ½

BRUNING 44-231 44427-2

REV.	DATE	DRAWN BY	APROV'D BY	DESCRIPTION

C-DET-2 SiGAIN C-DET-4 C-DET-5 C-AMP-4 ERROR CHECK C-AMP-5 C-DET-1 C-DET-3 C-AMP-1 D-DIS-1 I-FF-1 I-PRO-2 C-AMP-2 TA Signal Conditioning C-AMP-3 TD Signal Conditioning C-CON-1 I-PRO-1 C-REG-1 I-PWR-1 I-PWR-2 C-PG-1 AUTO RESET

NOTE: ALL CIRCUITRY IN DASHED BOXES ARE NOT OF THE ORIGINAL CIRCUIT.

ORCAD : 55006S10

NEXT ASSEMBLY	DWG TYPE

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ±
3 PLACE DECIMALS(.XXX): ±
2 PLACE DECIMALS (.XX): ±
1 PLACE DECIMALS (.X): ±

MATERIAL:

FINISH:

VLBA PROJECT: WEATHER STATION

NATIONAL RADIO ASTRONOMY OBSERVATORY
SOCORRO,NEW MEXICO 87801

TITLE: WEATHER STATION TSL TRANSMITTER CARD SCHEMATIC DIAGRAM

DRAWN BY	N. ATENCIO	DATE	2-96
DESIGNED BY		DATE	
APPROVED BY		DATE	
SHEET NUMBER	1 OF 1	DRAWING NUMBER	C55006S010
REV.	-	SCALE	-

REV	DATE	DRAWN BY	APPRV'D BY	DESCRIPTION

① C-ISO-I

② C-AMP-I

③ C-PRO-I

④ C-PWR-I

⑤ C-PG-2

⑥ I-BUF-I

⑦ C-PG-3

⑧ C-PG-I

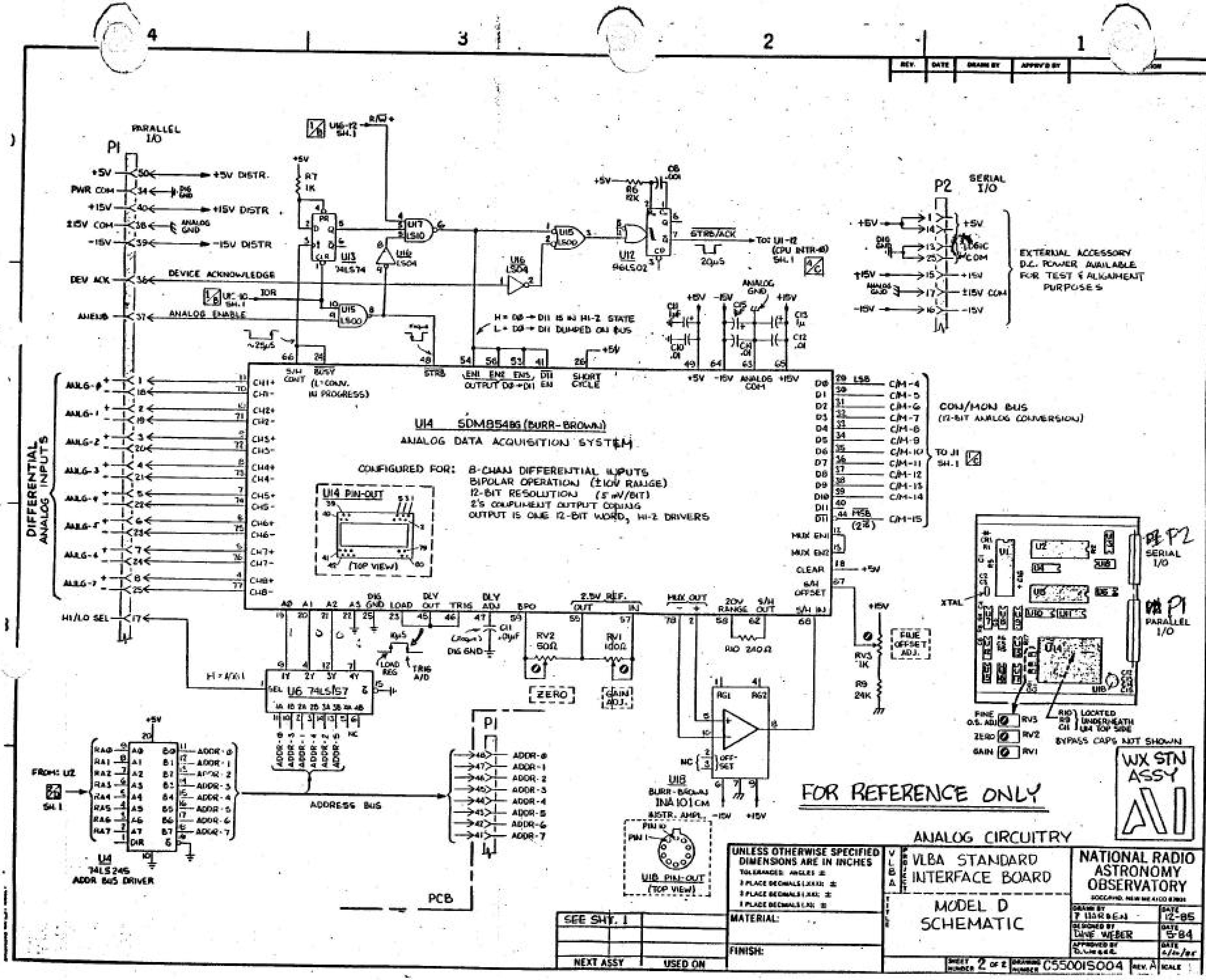
SCHEMATIC RECEIVE LOGIC

U5-U7
PINS 1,10,19 COM
PINS 16 +5V

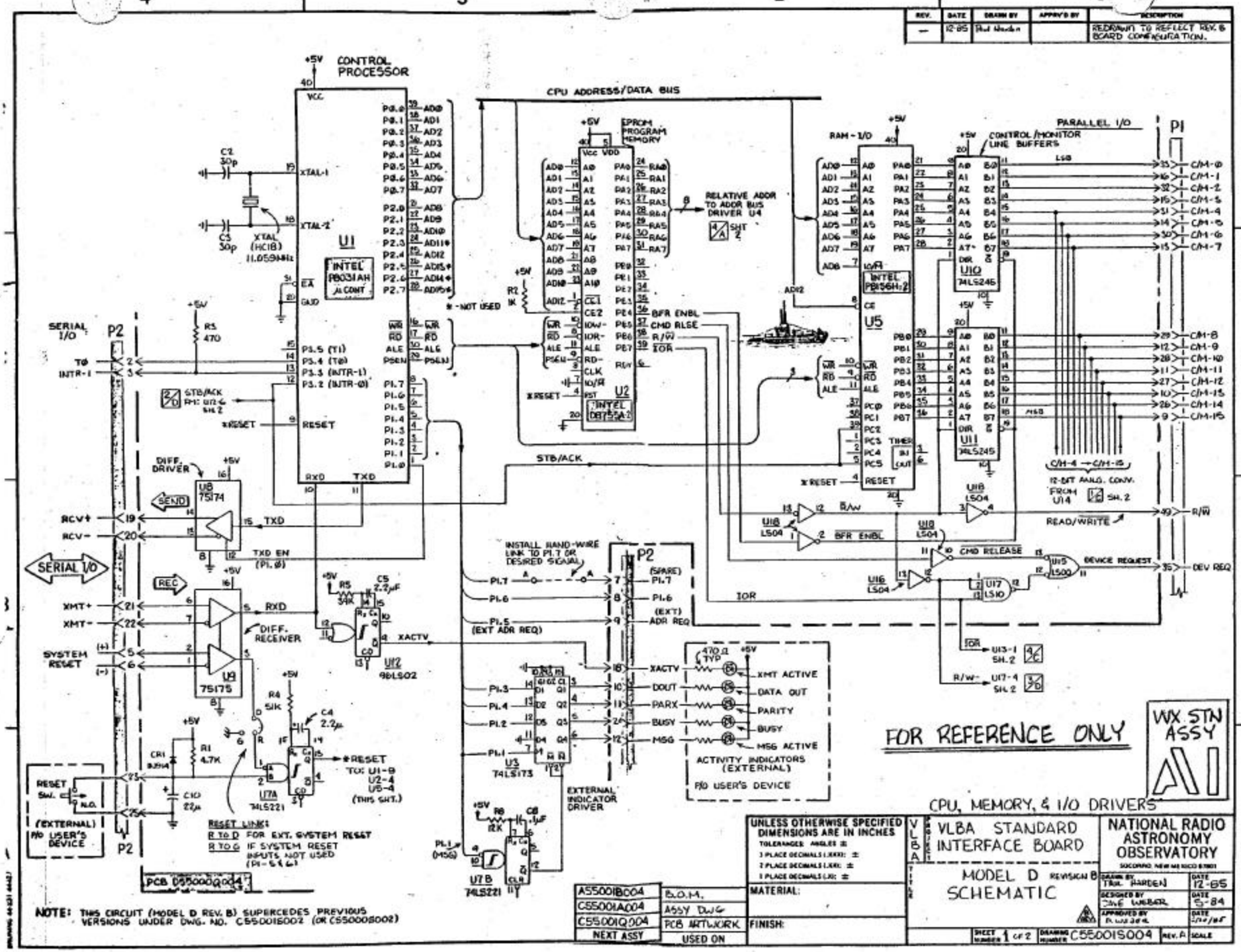
ACAD : 55006L02

PROPERTY OF NRAO

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	VLA PROJECT	WEATHER STATION	NATIONAL RADIO ASTRONOMY OBSERVATORY SOCORRO, NEW MEXICO 87801
TOLERANCES : ANGLES ± / 3 PLACE DECIMALS (.XXX) ± / 2 PLACE DECIMALS (.XX) ± / 1 PLACE DECIMALS (.X) ±	TITLE	WEATHER STATION RECEIVER LOGIC PCB LOGIC DIAGRAM	DRAWN BY M.SULLIVAN DATE 9/10/99
MATERIAL :			DESIGNED BY TSL DATE
FINISH :			APPROVED BY GARY DUFF DATE 9/28/99
NEXT ASSEMBLY / DWG. TYPE	SHEET NUMBER 1 OF 1	DRAWING NUMBER C55006L002	REV. — SCALE NONE



PARALLEL I/O
P1
+5V DISTR.
+15V DISTR
-15V DISTR
DEVICE ACKNOWLEDGE
ANALOG ENABLE
DIFFERENTIAL ANALOG INPUTS
HI/LO SEL
U13 74LS74
U15 LS00
U17 LS10
U16 LS04
U12 96LS02
STRB/ACK
TO: U1-12 (CPU INTR-0) SH. 1
H = D0 → D11 IS IN HI-Z STATE
L = D0 → D11 DUMPED ON BUS
U14 SDM854BG (BURR-BROWN)
ANALOG DATA ACQUISITION SYSTEM
CONFIGURED FOR: 8-CHAN DIFFERENTIAL INPUTS
BIPOLAR OPERATION (±10V RANGE)
12-BIT RESOLUTION (5 mV/BIT)
2'S COMPLEMENT OUTPUT CODING
OUTPUT IS ONE 12-BIT WORD, HI-Z DRIVERS
U14 PIN-OUT (TOP VIEW)
CON/MON BUS (12-BIT ANALOG CONVERSION)
TO J1 SH. 1
P2 SERIAL I/O
EXTERNAL ACCESSORY D.C. POWER AVAILABLE FOR TEST & ALIGNMENT PURPOSES
U6 74LS157
U4 74LS245 ADDR BUS DRIVER
FROM: U2
ADDRESS BUS
RV2 50Ω
RV1 100Ω
ZERO
GAIN ADJ.
RV3 1K
R9 24K
FINE OFFSET ADJ.
R10 240Ω
U18 BURR-BROWN INA101CM INSTR. AMPL.
U18 PIN-OUT (TOP VIEW)
PCB
XTAL
SERIAL I/O
PARALLEL I/O
FINE O.S. ADJ RV3
ZERO RV2
GAIN RV1
R10, R9, C11 LOCATED UNDERNEATH U14 TOP SIDE
BYPASS CAPS NOT SHOWN
WX STN ASSY A1
FOR REFERENCE ONLY
ANALOG CIRCUITRY
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
VLBA STANDARD INTERFACE BOARD
MODEL D SCHEMATIC
NATIONAL RADIO ASTRONOMY OBSERVATORY
DESIGNED BY DAVE WEBER
DATE 12-85
DATE 5-84
SEE SHT. 1
NEXT ASSY
USED ON
MATERIAL:
FINISH:
SHEET NUMBER 2 OF 2
DRAWING NUMBER C55001S004
REV. A



REV.	DATE	DRAWN BY	APPR'D BY	DESCRIPTION
—	12-85	Paul Harden		REDRAWN TO REFLECT REV. B BOARD CONFIGURATION.

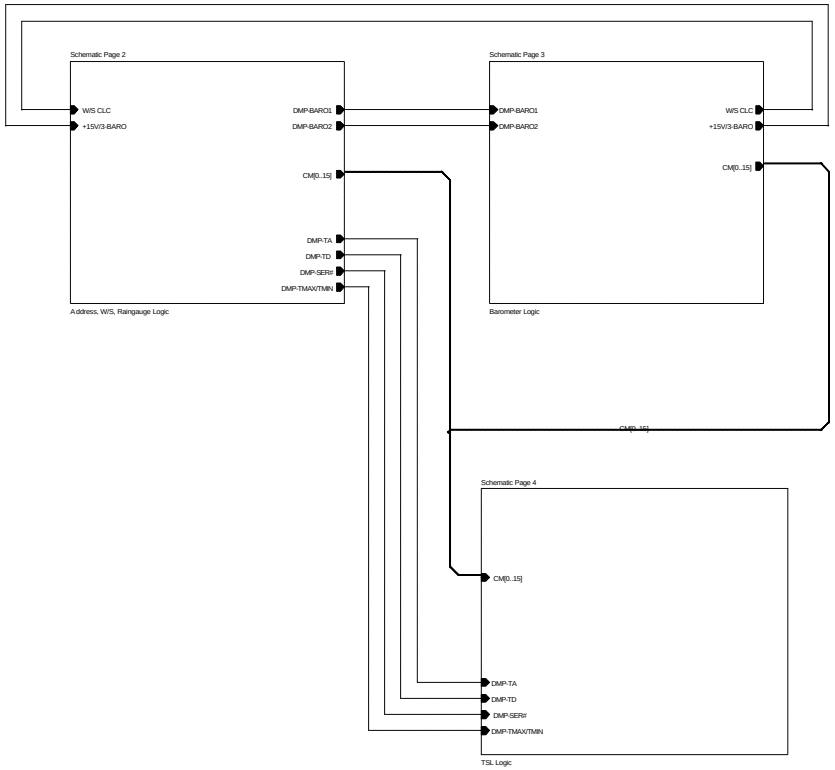
A55001B004	B.O.M.
C55001A004	ASSY DWG
C55001Q004	PCB ARTWORK
NEXT ASSY	USED ON

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ±
1 PLACE DECIMALS (.X): ±
2 PLACE DECIMALS (.XX): ±
3 PLACE DECIMALS (.XX): ±

MATERIAL:
FINISH:

DRAWN BY	Paul Harden — DATE 12-85
DESIGNED BY	Dave Weber — DATE 5-84
APPROVED BY	— DATE
SHEET NUMBER	1 of 2
DRAWING NUMBER	C55001S004
REV.	A
SCALE	

REV	DATE	DRAWN BY	APPRVD BY	DESCRIPTION
A	07/01/90	ANDREATTA		MINOR CORRECTIONS ;
B	08/23/01	G. DUFF	G. DUFF	DRAWN TO REFLECT WORKING MODEL



ORCAD : 55006S006

A55006A001	ASSEMBLY
NEXT ASSEMBLY	DWG TYPE

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

TOLERANCES: ANGLES ±

3 PLACE DECIMALS(XXX) ±

2 PLACE DECIMALS (XX) ±

1 PLACE DECIMALS (X) ±

MATERIAL:

FINISH:

VLA

PROJECT: WEATHER STATION

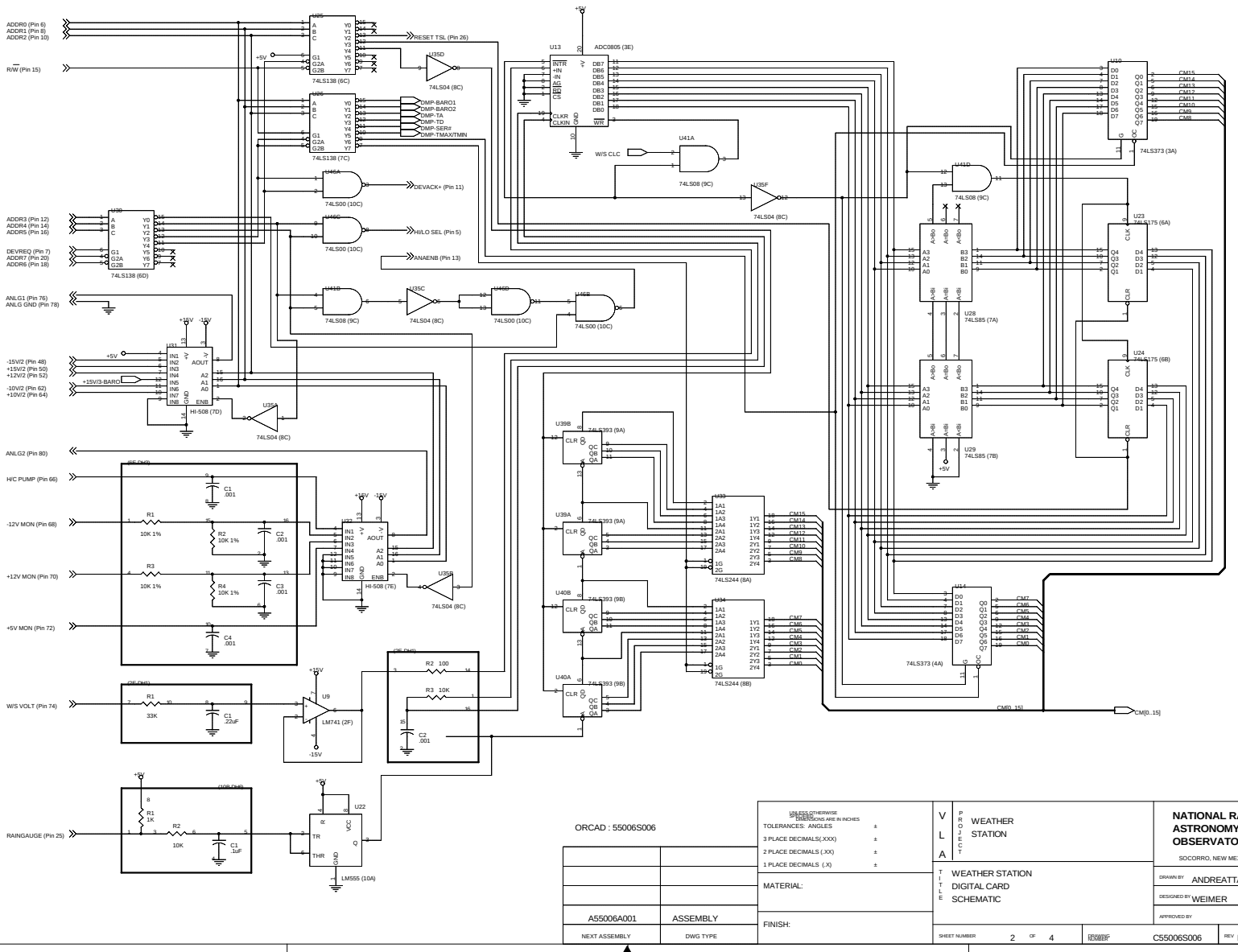
TITLE: WEATHER STATION
DIGITAL CARD
SCHEMATIC

NATIONAL RADIO ASTRONOMY OBSERVATORY

SOCORRO, NEW MEXICO 87801

DRAWN BY	ANDREATTA	DATE	02/01/90
DESIGNED BY	WEIMER	DATE	02/01/90
APPROVED BY		DATE	

SHEET NUMBER 1 OF 4 | DRAWING NUMBER C55006S006 | REV B | SCALE NONE



REV	DATE	DRAWN BY	APPRV'D BY	DESCRIPTION
A	07/01/90	ANDREATTA		MINOR CORRECTIONS ;
B	08/23/01	G. DUFF	G. DUFF	DRAWN TO REFLECT WORKING MODEL

ORCAD : 55006S006

A55006A001	ASSEMBLY
NEXT ASSEMBLY	DWG TYPE

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

TOLERANCES: ANGLES ±

3 PLACE DECIMALS(.XXX) ±

2 PLACE DECIMALS (.XX) ±

1 PLACE DECIMALS (.X) ±

MATERIAL:

FINISH:

VLA

PROJECT: WEATHER STATION

TITLE: WEATHER STATION
DIGITAL CARD
SCHEMATIC

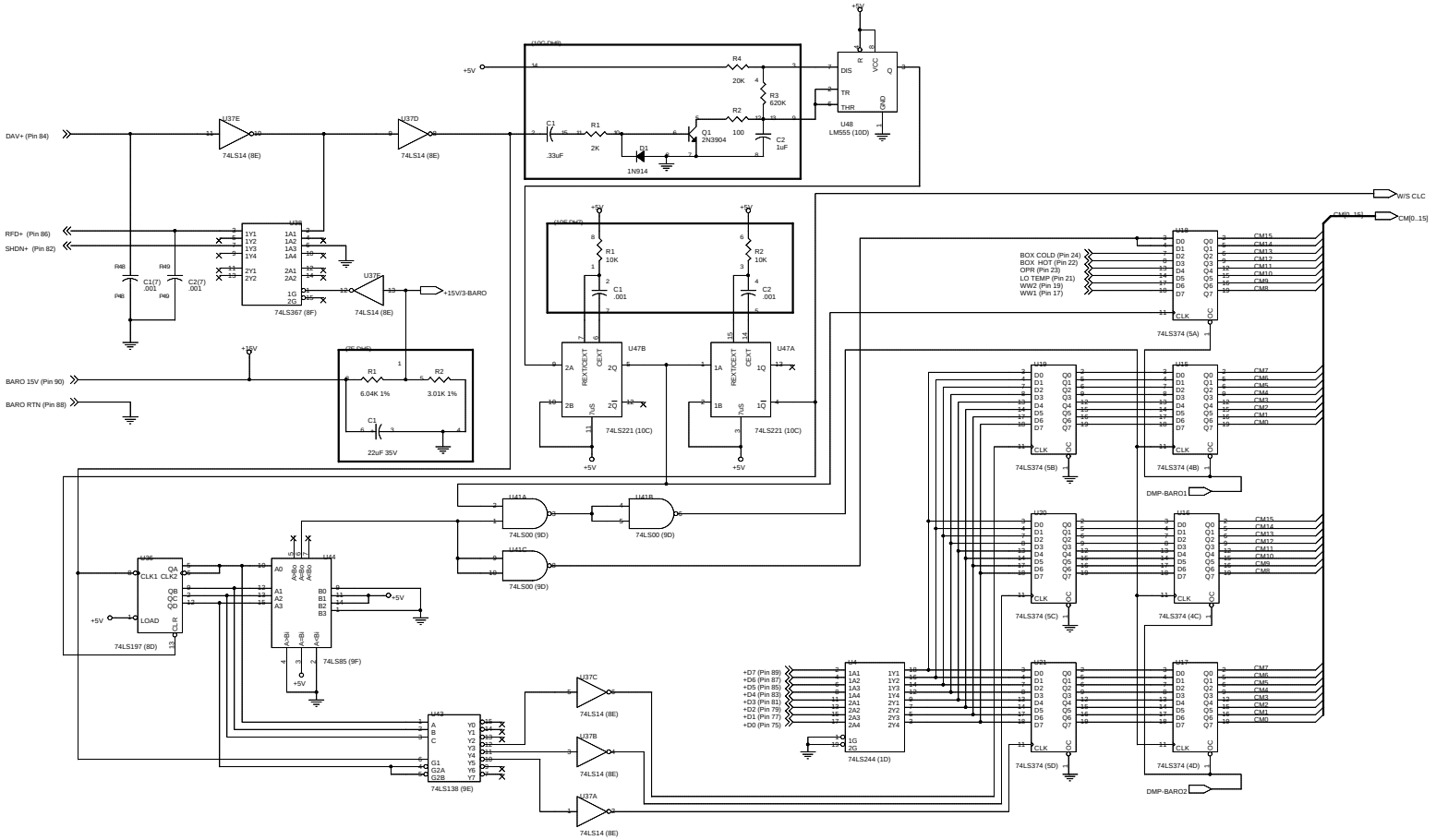
NATIONAL RADIO ASTRONOMY OBSERVATORY

SOCORRO, NEW MEXICO 87801

DRAWN BY	ANDREATTA	DATE	02/01/90
DESIGNED BY	WEIMER	DATE	02/01/90
APPROVED BY		DATE	

SHEET NUMBER 2 OF 4 | DRAWING NUMBER C55006S006 | REV B | SCALE NONE

REV	DATE	DRAWN BY	APPRV'D BY	DESCRIPTION
A	07/01/90	ANDREATTA		MINOR CORRECTIONS ;
B	08/23/01	G. DUFF	G. DUFF	DRAWN TO REFLECT WORKING MODEL



ORCAD : 55006S006

A55006A001	ASSEMBLY
NEXT ASSEMBLY	DWG TYPE

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

TOLERANCES: ANGLES ±

3 PLACE DECIMALS(.XXX) ±

2 PLACE DECIMALS (.XX) ±

1 PLACE DECIMALS (.X) ±

MATERIAL:

FINISH:

VLA

PROJECT: WEATHER STATION

TITLE: WEATHER STATION DIGITAL CARD SCHEMATIC

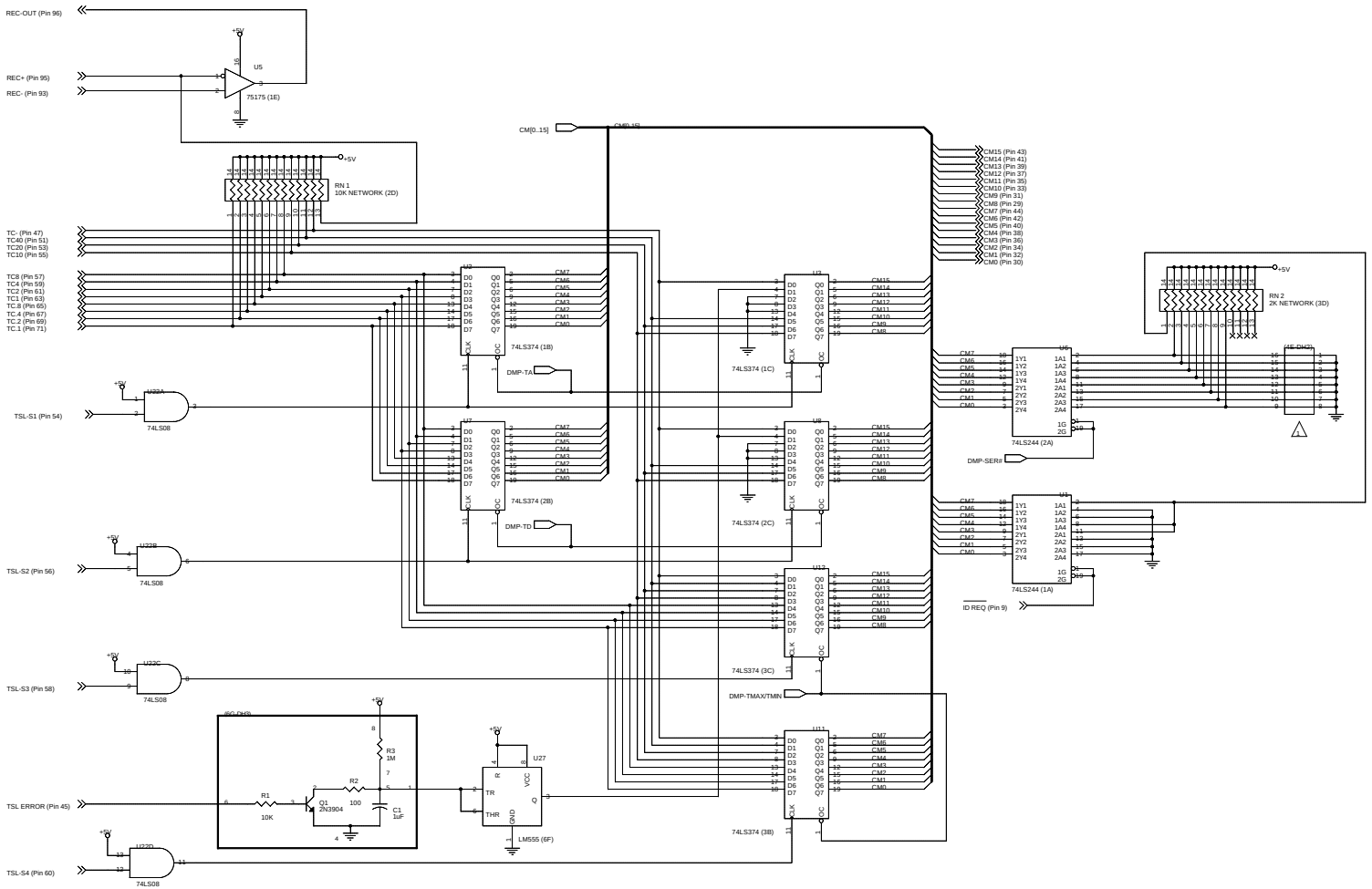
NATIONAL RADIO ASTRONOMY OBSERVATORY

SOCORRO, NEW MEXICO 87801

DRAWN BY	ANDREATTA	DATE	02/01/90
DESIGNED BY	WEIMER	DATE	02/01/90
APPROVED BY		DATE	

SHEET NUMBER 3 OF 4 | DRAWING NUMBER C55006S006 | REV B | SCALE NONE

REV	DATE	DRAWN BY	APPRV'D BY	DESCRIPTION
A	07/01/90	ANDREATTA		MINOR CORRECTIONS ;
B	08/23/01	G. DUFF	G. DUFF	DRAWN TO REFLECT WORKING MODEL



⚠1 CUT STRAP ON DH3 TO GENERATE "1" ON INPUT.
BIT5 0-4 = SN
BIT5 5-6 = OLD VERSION = 1,1 NEW VERSION = 0,0
BIT7 = 0

ORCAD : 55006S006

A55006A001	ASSEMBLY
NEXT ASSEMBLY	DWG TYPE

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

TOLERANCES: ANGLES ±
3 PLACE DECIMALS(.XXX) ±
2 PLACE DECIMALS (.XX) ±
1 PLACE DECIMALS (.X) ±

MATERIAL:

FINISH:

VLA

PROJECT: WEATHER STATION

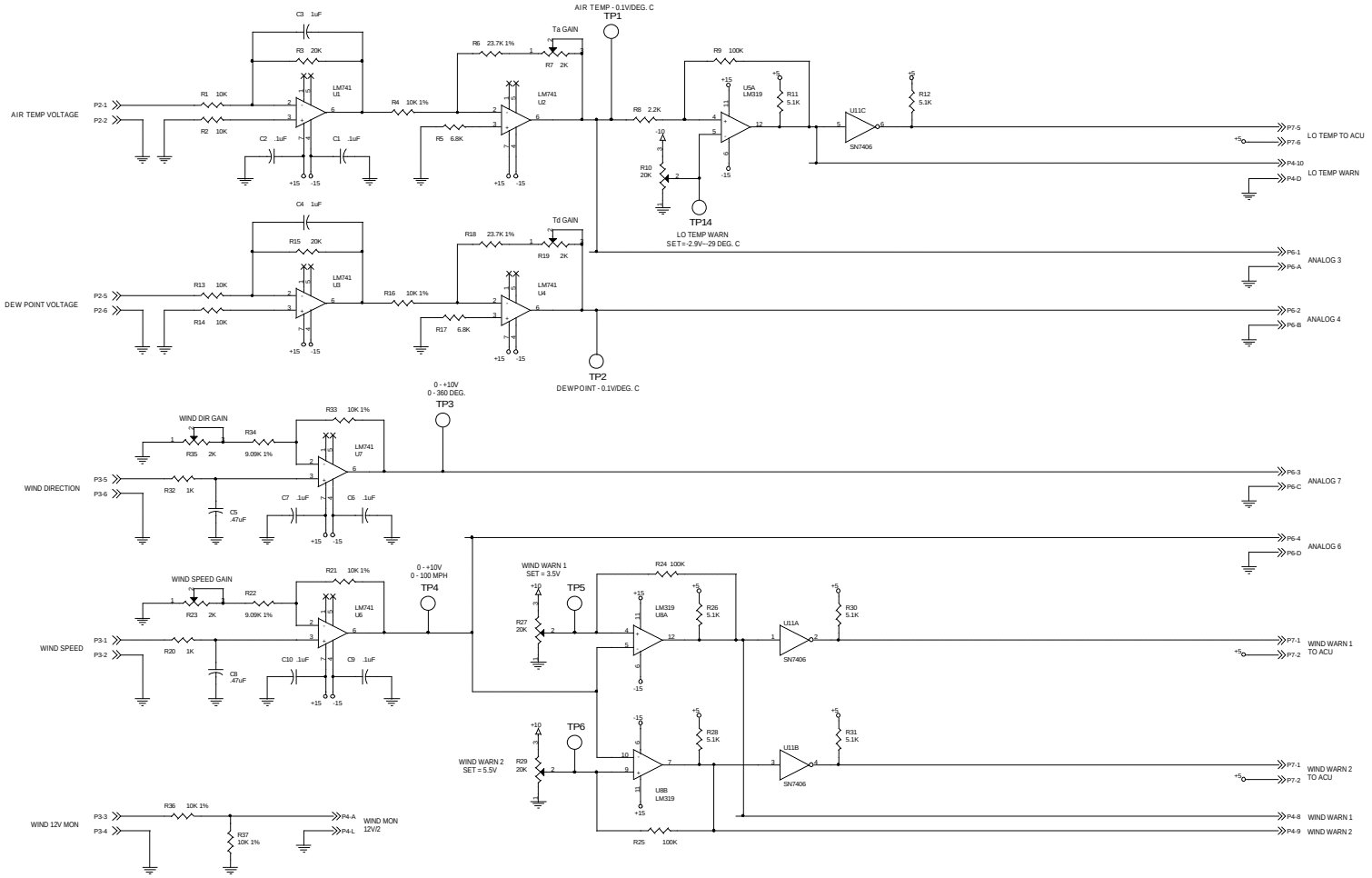
TITLE: WEATHER STATION
DIGITAL CARD
SCHEMATIC

NATIONAL RADIO ASTRONOMY OBSERVATORY
SOCORRO, NEW MEXICO 87801

DRAWN BY	ANDREATTA	DATE	02/01/90
DESIGNED BY	WEIMER	DATE	02/01/90
APPROVED BY		DATE	

SHEET NUMBER 4 OF 4 | DRAWING NUMBER C55006S006 | REV B | SCALE NONE

REV	DATE	DRAWN BY	APPRV'D BY	DESCRIPTION
A	08/23/01	G. DUFF	G. DUFF	DRAWN TO REFLECT WORKING MODEL



NOTES:
1. All resistor values in ohms unless otherwise specified.

ORCAD : 55006S005

D55006A001	ASSEMBLY
D55006P001	DRILL DWG
D55006I002	SILKSCREEN
D55006Q002	ARTWORK
NEXT ASSEMBLY	DWG TYPE

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ±
3 PLACE DECIMALS(.XXX) ±
2 PLACE DECIMALS (.XX) ±
1 PLACE DECIMALS (.X) ±
MATERIAL:
FINISH:

VLA
PROJECT WEATHER STATION

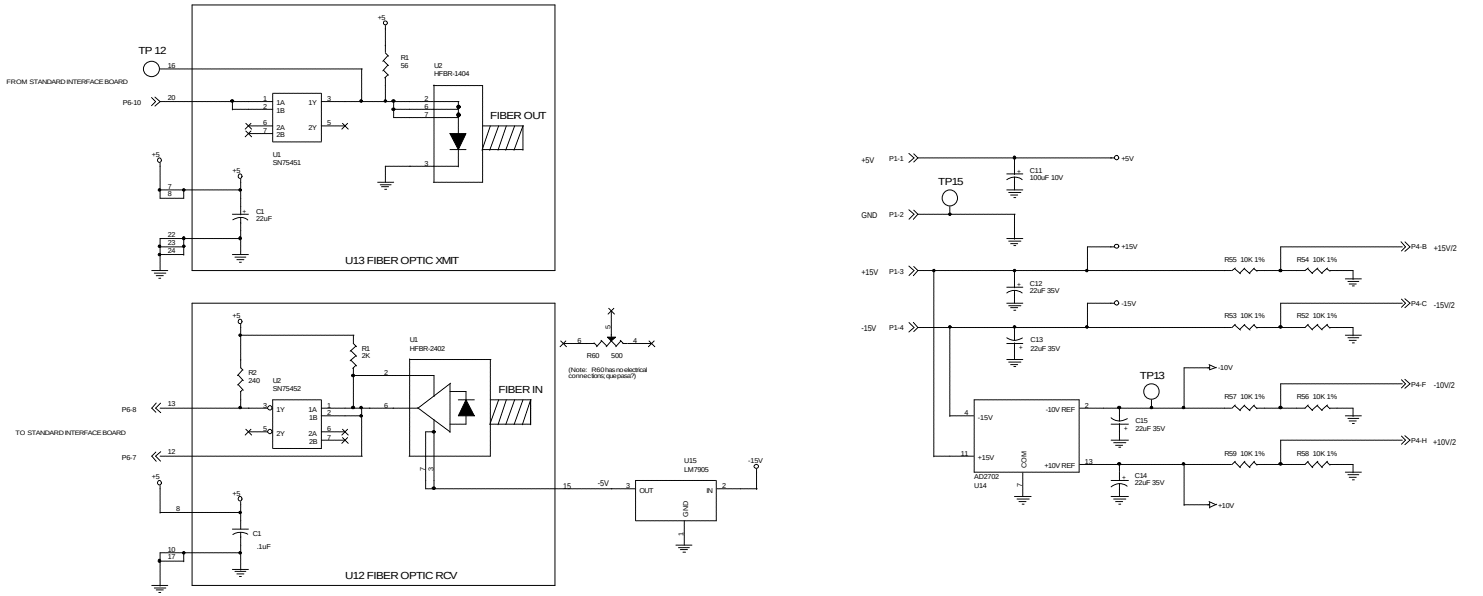
TITLE
WEATHER STATION
"A3" CONDITIONER
PCB SCHEMATIC

NATIONAL RADIO ASTRONOMY OBSERVATORY
SOCORRO, NEW MEXICO 87801

DRAWN BY	ANDREATTA	DATE	11/01/89
DESIGNED BY	WEIMER	DATE	11/01/89
APPROVED BY		DATE	

SHEET NUMBER 1 OF 3 | DRAWING NUMBER C55006S005 | REV A | SCALE NONE

REV	DATE	DRAWN BY	APPRVD BY	DESCRIPTION
A	08/23/01	G. DUFF	G. DUFF	DRAWN TO REFLECT WORKING MODEL



ORCAD : 55006S005

D55006A001	ASSEMBLY
D55006P001	DRILL DWG
D55006I002	SILKSCREEN
D55006Q002	ARTWORK
NEXT ASSEMBLY	DWG TYPE

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ±
3 PLACE DECIMALS(.XXX) ±
2 PLACE DECIMALS (.XX) ±
1 PLACE DECIMALS (.X) ±
MATERIAL:
FINISH:

VLA

PROJECT: WEATHER STATION

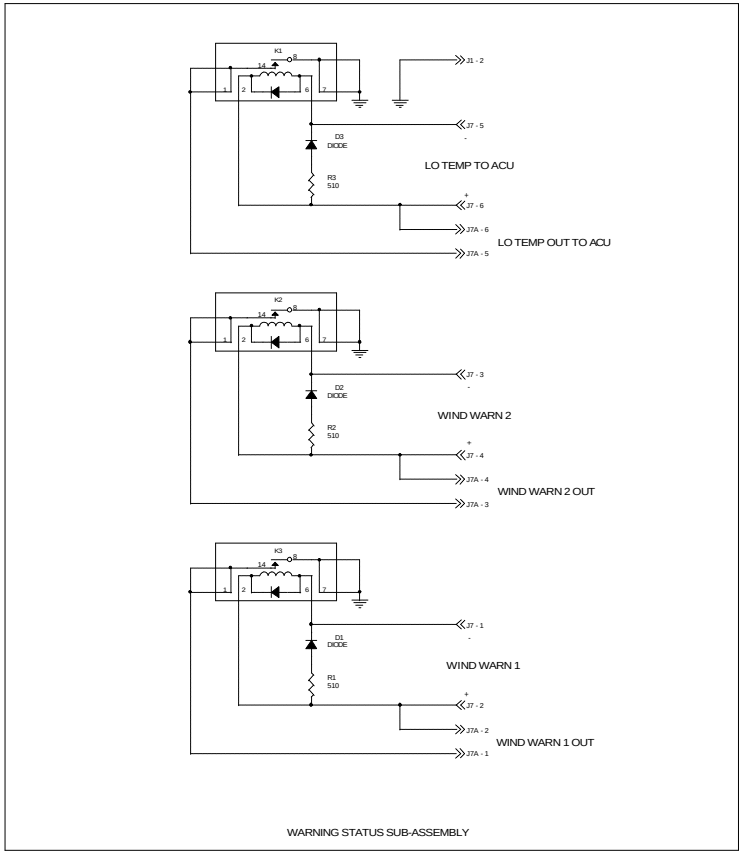
TITLE: WEATHER STATION "A3" CONDITIONER PCB SCHEMATIC

NATIONAL RADIO ASTRONOMY OBSERVATORY
SOCORRO, NEW MEXICO 87801

DRAWN BY	ANDREATTA	DATE	11/01/89
DESIGNED BY	WEIMER	DATE	11/01/89
APPROVED BY		DATE	

SHEET NUMBER 2 OF 3 | DRAWING NUMBER C55006S005 | REV A | SCALE NONE

REV	DATE	DRAWN BY	APPRVD BY	DESCRIPTION
A	08/23/01	G. DUFF	G. DUFF	DRAWN TO REFLECT WORKING MODEL



WARNING STATUS SUB-ASSEMBLY

ORCAD : 55006S005

D55006A001	ASSEMBLY
D55006P001	DRILL DWG
D55006I002	SILKSCREEN
D55006Q002	ARTWORK
NEXT ASSEMBLY	DWG TYPE

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

TOLERANCES: ANGLES ±
3 PLACE DECIMALS(XXX) ±
2 PLACE DECIMALS (XX) ±
1 PLACE DECIMALS (X) ±

MATERIAL:

FINISH:

VLA

PROJECT: WEATHER STATION

TITLE: WEATHER STATION "A3" CONDITIONER PCB SCHEMATIC

NATIONAL RADIO ASTRONOMY OBSERVATORY
SOCORRO, NEW MEXICO 87801

DRAWN BY ANDREATTA	DATE 11/01/89
DESIGNED BY WEIMER	DATE 11/01/89
APPROVED BY	DATE

SHEET NUMBER 3 OF 3 | DRAWING NUMBER C55006S005 | REV A | SCALE NONE