NOTES: UNLESS OTHERWISE NOTED

1.) PRIMARY 90 DEGREE FIELDS OF VIEW TO BE FREE OF ANY S/C OBSTRUCTIONS. TYP 4 PLS.

2.) SECONDARY 146 DEGREE FOV TO HAVE MINIMAL S/C OBSTRUCTION TYP 1 PLACE.

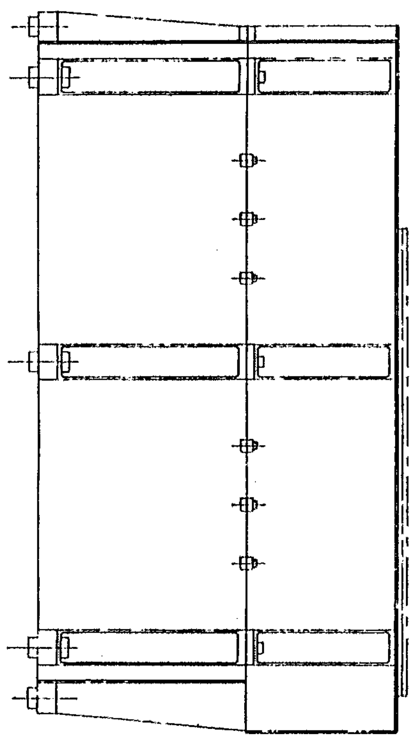
3.) EST EXPERIMENT MASS: 29.33 kg

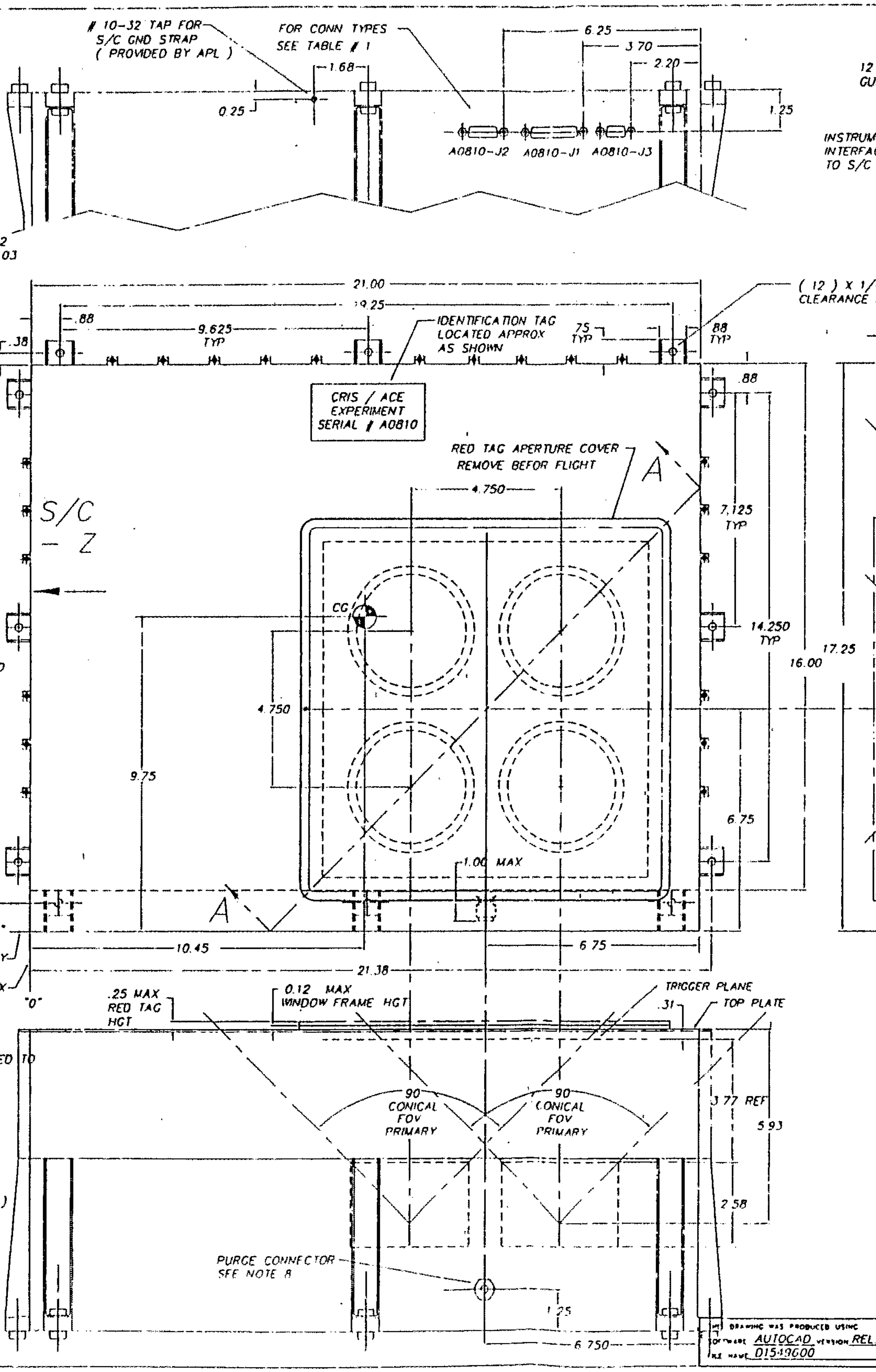
4.) EST. CENTER OF GRAVITY: FROM DATUMS (X, Y, Z)
10.45 " 9.75 " 4 . "

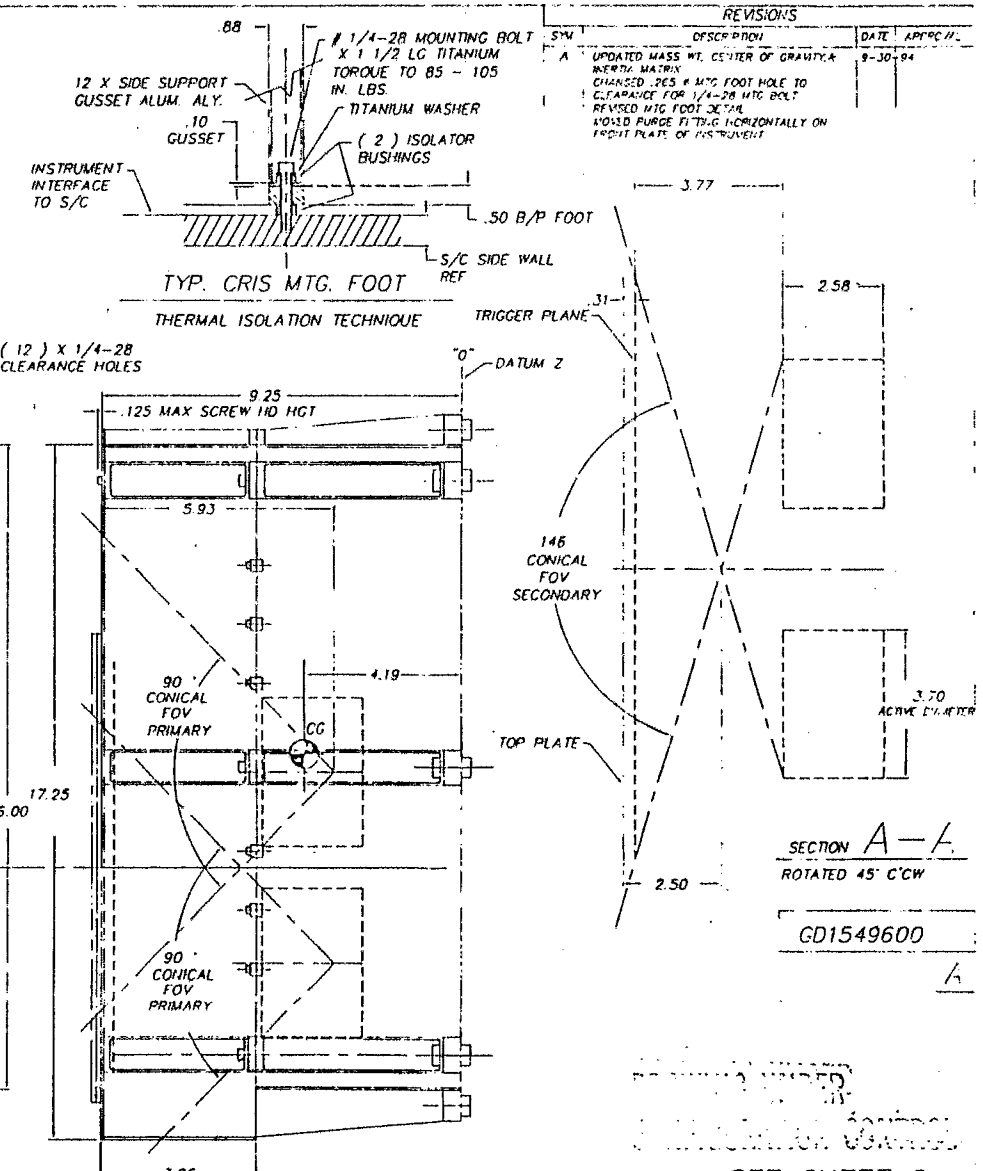
5.) INERTIA MATRIX:
THE INERTIA MATRIX IS CALCULATED USING UNITS OF METERS & KILOGRAMS– INPUT DATA IS IN UNITS OF INCHES & GRAMS.

IXX= .4448641	IXY= 4.196377E-02	IXZ= 2.542118E-02
IYX= 4.196377E-02	IYY= .6203227	IYZ= -4.521741E-03
IZX= 2.542118E-02	IZY= -4.521741E-03	IZZ= .8753883

NOTE: THESE ARE BOX COORDINATES, NOT S/C COORDINATES.







NOTES– CONTINUED

5a.) CENTER OF GRAVITY & MOMENTS OF INERTIA CALCULATED TO 10% ACCURACY.

6.) HOLES IN MOUNTING FEET TO BE LOCATED & DRILLED USING CRIS INSTRUMENT DRILL TEMPLATE GD1549624-1

7.) MATCHING DRILL TEMPLATE GD1549624-2 TO BE PROVIDED TO APL FOR LOCATION OF FASTENERS IN APL S/C VERTICAL SUPPORT PANEL.

8.) PURGE CONNECTOR: LOCATION AS SHOWN, SWAGELOC 1/4 TUBE O.D., .19 MIN OPENING, SWAGELOC CATALOG # A-401-1-2.

9.) RED TAG ITEMS: (1) PROTECTIVE APERATURE COVER (REMOVE PRIOR TO S/C TESTING & FLIGHT)
(2) HANDLING INSTALLATION FIXTURES
(REMOVE AFTER INSTALLATION OF EXPEREIMENT ON S/C)

10) GREEN TAG ITEM: GREEN GSE CONN. COVER TO BE INSTALLED PRIOR TO DELIVERY TO APL

11.) LIFTING INSTRUCTIONS: THE EXPERIMENT SHOULD BE LIFTED & INSTALLED BY THE " RED TAG " HANDLING/INSTALLATION FIXTURES GD1549623 LOCATED ON EACH END.
SEE SHEET 2 GD1549600 FOR EXPERIMENT HANDLING/INSTALLATION FIXTURE LOCATION

TABLE # 1

CONN #	TYPE	DESCRIPTION	NAME
A0810-J1	EQUIV TO 311P407-3P-B-15	44 PIN HD MALE	S/C DATA CONN
A0810-J2	EQUIV TO 311P409-2P-B-15	15 PIN REG DEN MALE	S/C POWER CONN
A0810-J3	EQUIV TO 311P407-1P-B-15	15 PIN HD MALE	GSE CONN (INTERNAL)

SEE SHEET 2 FOR ADDITIONAL INFO

9-30-94

LIST OF MATERIAL

Goddard Space Flight Center

TOLERANCES:
.XX ±.02 .XXX ±.005 ANGLES ±1° FRACTIONS ±1/32 63/√

DESIGNED TREXEL
DRAWN TREXEL
CHECKED SHUMAN
APPROVED TYCHO

CRIS INTERFACE CONTROL DRAWING

CRIS/ACE

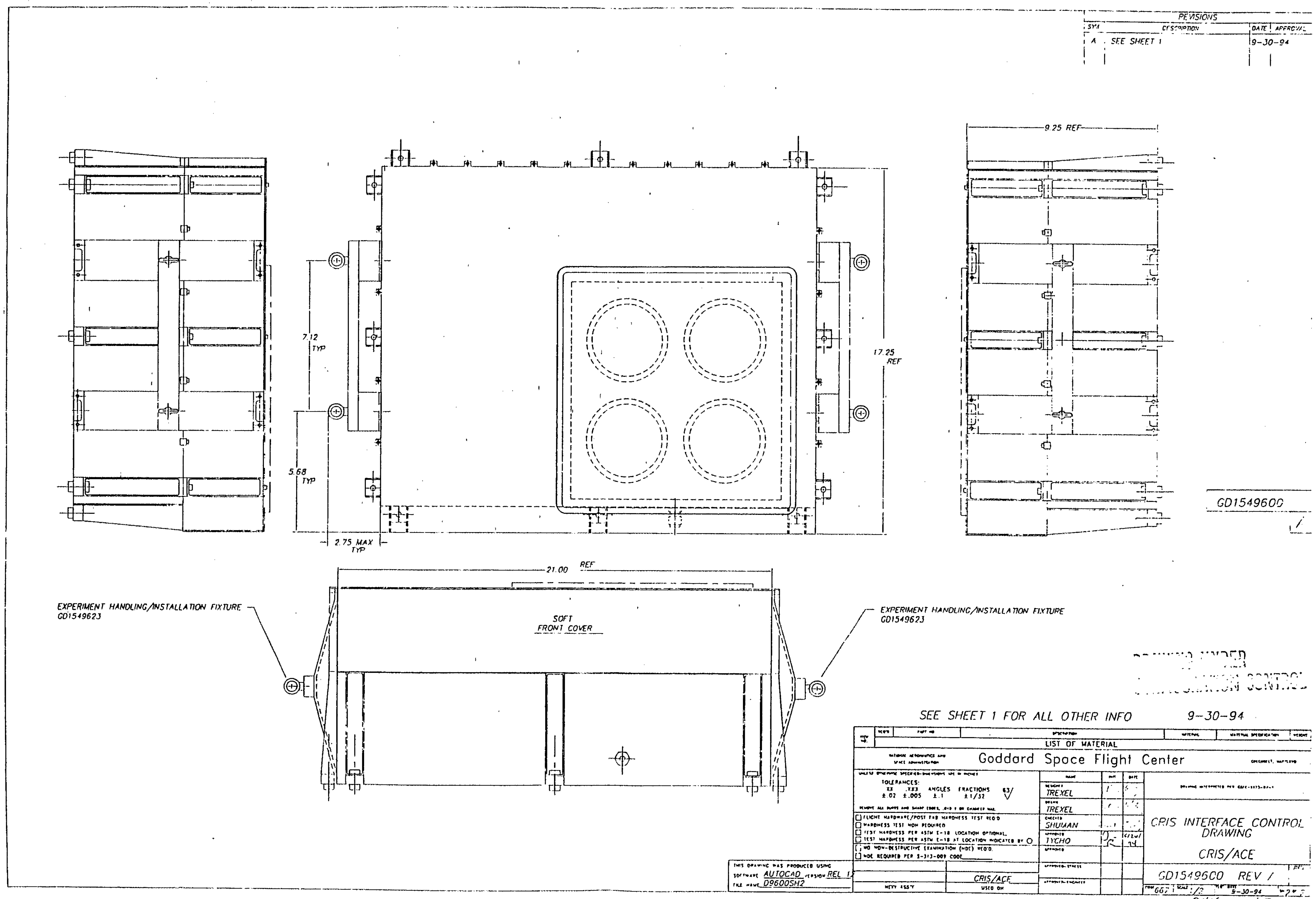
DRAWING WAS PRODUCED USING SOFTWARE AUTOCAD VERSION REL. 12
FILE NAME D1549600

USED ON: CRIS/ACE

GD1549600 REV A

CODE 667 SCALE 1/2 DATE 9-30-94 SHEET 1 OF 2

ORIG IN RED



REVISIONS
A SEE SHEET 1 9-30-94
9.25 REF
7.12 TYP
5.68 TYP
2.75 MAX TYP
17.25 REF
GD1549600
21.00 REF
EXPERIMENT HANDLING/INSTALLATION FIXTURE GD1549623
SOFT FRONT COVER
EXPERIMENT HANDLING/INSTALLATION FIXTURE GD1549623
SEE SHEET 1 FOR ALL OTHER INFO 9-30-94
LIST OF MATERIAL
Goddard Space Flight Center
TOLERANCES:
.XX .XXX ANGLES FRACTIONS
±.02 ±.005 ±.1 ±1/32
TREXEL
TREXEL
SHUMAN
TYCHO
CRIS INTERFACE CONTROL DRAWING
CRIS/ACE
THIS DRAWING WAS PRODUCED USING
SOFTWARE AUTOCAD VERSION REL 12
FILE NAME D9600SH2
CRIS/ACE
NEXT ASSY
USED ON
GD1549600 REV /
1/2
9-30-94

CRIS PARTICULARS.

1. GROUNDING
   - CRIS SECONDARIES ARE TIED TO CHASSIS
   - CRIS IS THERMALLY & ELECTRICALLY ISOLATED FROM PANEL
2. TEMPERATURE OPERATIONS
   ACCEPTABLE RANGE -25°C to +35°C
3. POWER PROFILE:
   21.5W QUIESCENT CONDITION
   25.8W PERIODS OF HIGH SOLAR ACTIVITY
   TBDW PERIODS OF SUPPLEMENTAL HEATING
   (TBDW OPERATIONAL HEATER, TBDW SURVIVAL HEATER)
4. HANDLING
   - THE -90V DETECTOR BIAS MUST BE APPLIED TO CRIS FOR 264 HOURS OUT OF EACH 336 HOUR PERIOD. BIAS REQUIRED UNTIL LAUNCH. NO MORE THAN 3 DAYS UNBIASED IN ANY 2 WEEK PERIOD
   - OUTGAS IN VACUUM (<10^{-5} TORR) FOR 24 HOURS BEFORE OPERATING MCP HIGH VOLTAGE
   - REQUIRES HUMIDITY & TEMPERATURE CONTROLS TO PREVENT CONDENSATION
5. ACCESS REQUIREMENTS:
   - ACCESS REQUIRED FOR HV SAFEING PLUG
6. RADIATION SOURCES:
   - NONE
7. CLEANING AGENT:
   - ETHYL ALCOHOL IS AN APPROVED CLEANING AGENT ON AND NEAR THE INSTRUMENT.
   - USE OF VOLATILE CHEMICALS NEARBY MUST BE RESTRICTED.
8. GREEN & RED TAGGED ITEMS:
   - GREEN- INSTALL HV ENABLE PLUG (A0610-P03) PRIOR TO LAUNCH
   - RED- REMOVE HV SAFEING PLUG PRIOR TO LAUNCH.
9. RELEASE MECHANISM:
   NONE.
10. PURGE REQUIREMENTS:
    - NITROGEN PURGE REQUIRED UNTIL LAUNCH.
    - GSE NITROGEN SPECIFIED AS MAX. 5.0 psi PRESSURE.
    - ULEIS IN LINE RESTRICTOR WILL REDUCE NITROGEN FLOW RATE TO 0.1 L/minute
11. HIGH VOLTAGE EXTREMES OF -2600V AND +6500V.

C & DH ALLOCATIONS:

1. TURN ON INITIALIZATION TEST DATA TBD 4 MINUTES
2. INSTRUMENT DATA - 464 BITS/SEC (PER MINOR FRAME)
   FOR 928 BITS/MAJOR FRAME
3. TLM DATA:
   - DCM2-BD0 = SCIENCE DATA
   - DCM1-BEA7 = +28V MAIN BUS VOLTAGE
   - DCM1-AD14 = TEMP A
   - DCM1-AD15 = TEMP B
   - DCM1-AD16 = CRIS I/F TEMP
   - DCM1-DIFA15 = CRIS INPUT CURRENT I/F & SURVIVAL HEATER CURR.
   - TLM CHFXX - CMD R48A/D TELLTALE
   - TLM CHFXX - CMD R52A/B TELLTALE
   - TLM CHFXX - CMD R59A/B TELLTALE
4. COMMANDS:
   - CMD R59A/B - CRIS TURN ON/OFF
   - CMD R52A/B - CRIS INTERNAL HEATER ENA/DISABLE
   - CMD R48A/B - CRIS I/F & SURVIVAL HTR ENA/DISABLE
   - LOGIC-91 - CRIS LOW VOLTAGE ON PULSE(TBR??)
   - DATA-91 - CRIS DATA CMD

KEYS:

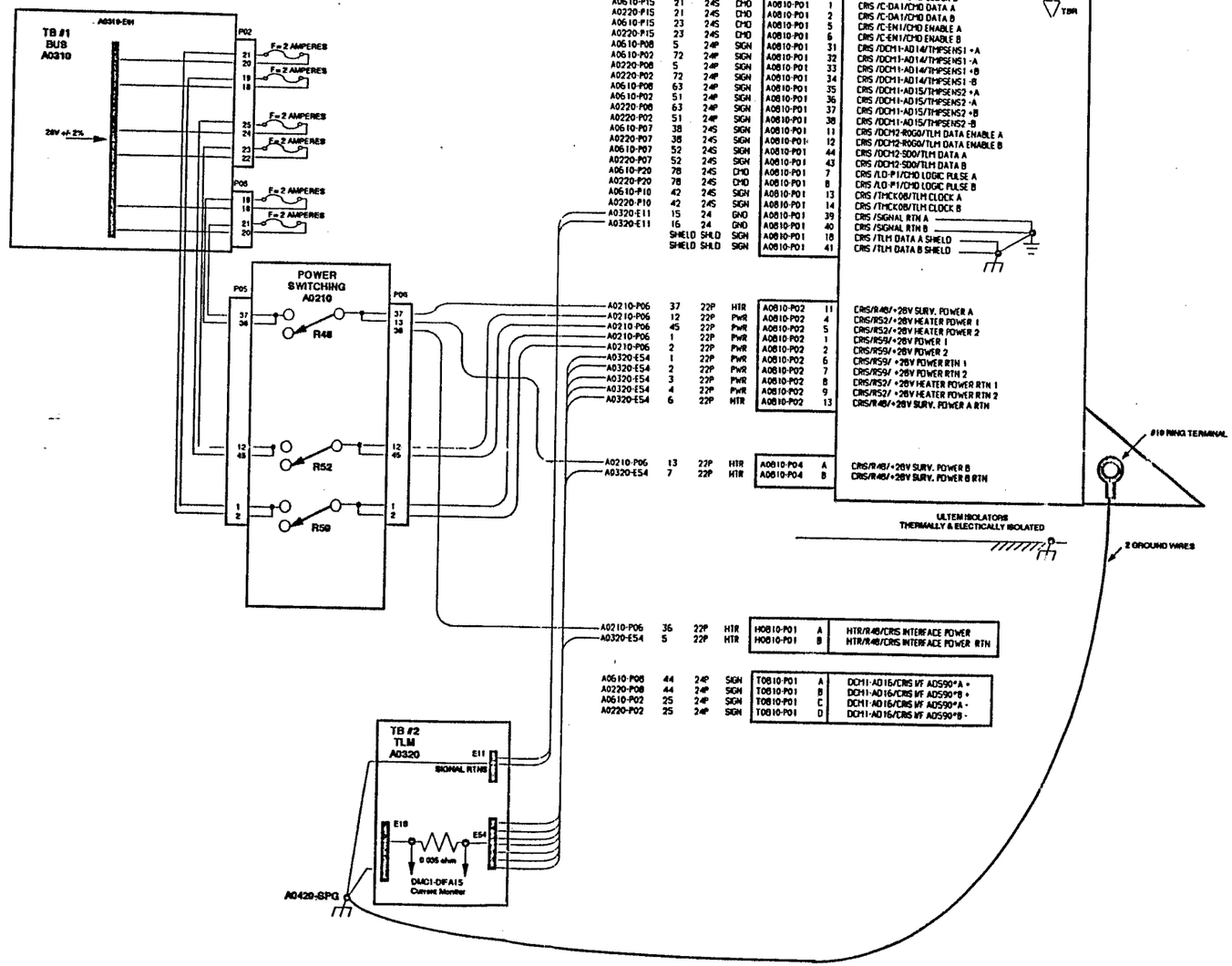
A0610 = C&DH A
A0220 = C&DH B

CHASSIS CONNECTIONS

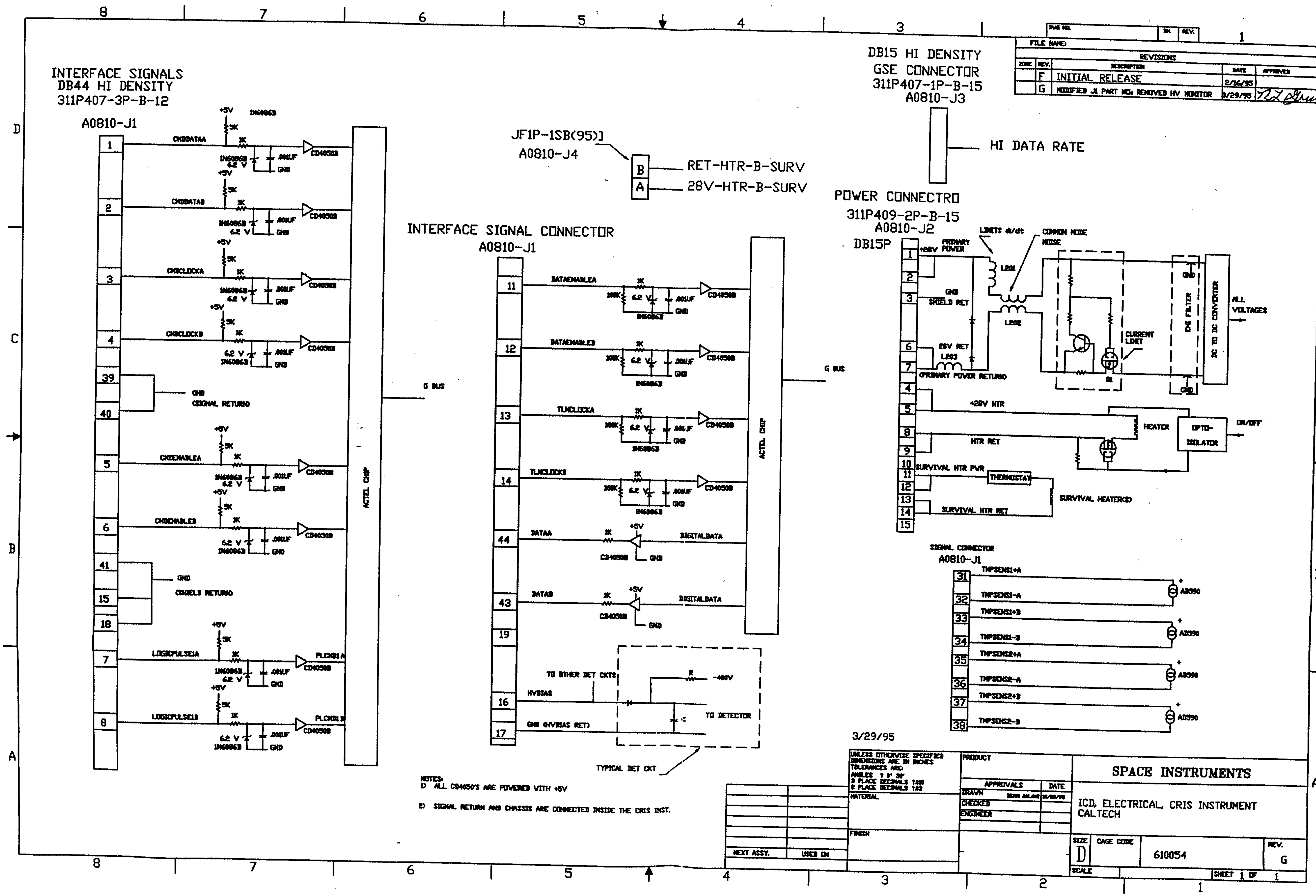
SIGNAL RTNS

ISOLATED RTNS

FLOATING RTNS



ENGINEER: J.M ROBERTS	THE JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY		
	TITLE: ACE BLOCK DIAGRAM (CRIS)		
FILE: ACE DIAGRAMS	SIZE: D	CODE IDENT NO 88898	DOCUMENT NUMBER: 7345 - 2211
	DATE: MAY 2, 1995		SHEET 1 OF 1



INTERFACE SIGNALS
DB44 HI DENSITY
311P407-3P-B-12
A0810-J1
CHODATAA
CHODATAB
CHOCLOCKA
CHOCLOCKB
GND
(SIGNAL RETURN)
CHOENABLEA
CHOENABLEB
GND
(SHIELD RETURN)
LOGICPULSEIA
LOGICPULSEIB
ACTEL CHIP
G BUS
JF1P-1SB(95)]
A0810-J4
RET-HTR-B-SURV
28V-HTR-B-SURV
INTERFACE SIGNAL CONNECTOR
A0810-J1
DATAENABLEA
DATAENABLEB
TLMCLOCKA
TLMCLOCKB
DATAA
DATAB
DIGITALDATA
HVBIAS
GND (HVBIAS RET)
TO OTHER DET CKTS
TO DETECTOR
TYPICAL DET CKT
DB15 HI DENSITY
GSE CONNECTOR
311P407-1P-B-15
A0810-J3
HI DATA RATE
POWER CONNECTRO
311P409-2P-B-15
A0810-J2
DB15P
PRIMARY POWER
LIMITS di/dt
COMMON MODE NOISE
SHIELD RET
28V RET
PRIMARY POWER RETURN
CURRENT LIMIT
EMI FILTER
DC TO DC CONVERTER
ALL VOLTAGES
+28V HTR
HTR RET
HEATER
OPTO-ISOLATOR
ON/OFF
SURVIVAL HTR PWR
THERMOSTAT
SURVIVAL HEATER(S)
SURVIVAL HTR RET
SIGNAL CONNECTOR
A0810-J1
THPSENS1+A
THPSENS1-A
THPSENS1+B
THPSENS1-B
THPSENS2+A
THPSENS2-A
THPSENS2+B
THPSENS2-B
AD590
REVISIONS
F INITIAL RELEASE 2/16/95
G MODIFIED J1 PART NO; REMOVED HV MONITOR 3/29/95
3/29/95
NOTES:
1) ALL CD4050'S ARE POWERED WITH +5V
2) SIGNAL RETURN AND CHASSIS ARE CONNECTED INSIDE THE CRIS INST.
SPACE INSTRUMENTS
ICD, ELECTRICAL, CRIS INSTRUMENT
CALTECH
SIZE D
610054
REV. G
SHEET 1 OF 1