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HEBT STEERING (HEBST)

E. Gill

January 1980

Collider Accelerator Department

Brookhaven National Laboratory

U.S. Department of Energy

USDOE Office of Science (SC)

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Accelerator Department
BROOKHAVEN NATIONAL LABORATORY
Associated Universities, Inc.
Upton, New York 11973

AGS DIVISION TECHNICAL NOTE

NO. 160

HEBT STEERING (HEBST)

E. Gill, S. Naase, F. Martin and J. Dabrowski

January 14, 1980

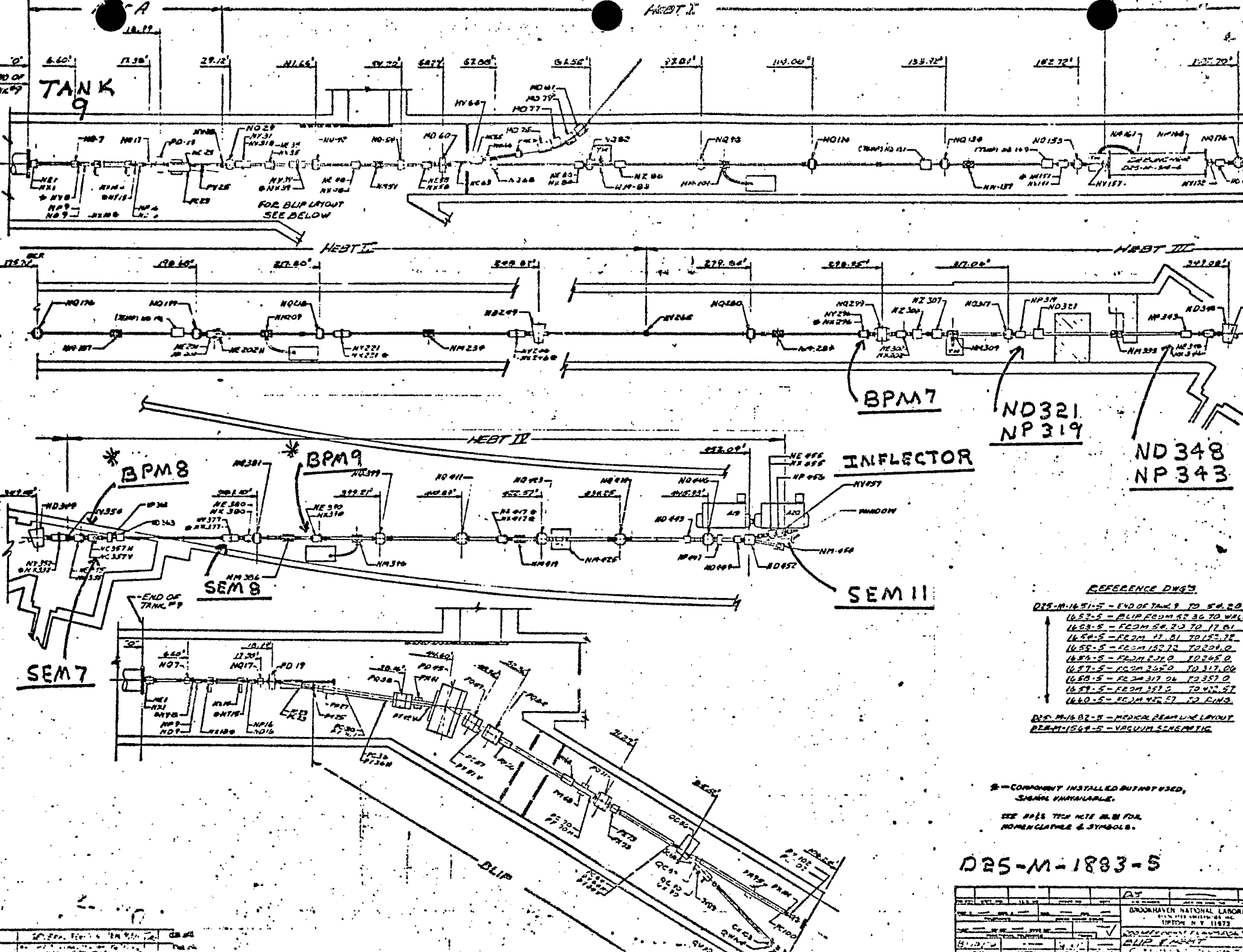
PURPOSE: To read position monitors and control four dipoles in HEBT line refer to HEBT drawing.

LOCATIONS: Two horizontal dipoles ND 321 and ND 348, two vertical dipoles NP 319 and NP 343. Position monitors are located at BPM8 (NX355) and BPM9 (NX390), also read tank 9 current and BPM7.

METHOD: Using a high speed digitizer and multiplex switch to read position monitors. Block digram #1.

OPERATION: Program name HEBST located in R R (25,13) - This program allows the user to read or correct the steering at BPM8 and BPM9 it also reads tank 9 current and BPM7. The device used to read is a 1024 bit digitizer which start reading data by DIGTG (Digitizer Trigger). It is also necessary to read multiplex DIMXA to switch position monitor signals.

If you go into feedback loop it will read data and correct automatically till tolerance is reached. If you just want to plot data it will switch through position monitors and store data and let you display in many forms. See examples of different plots. It will take about one minute to iterate all four dipoles to a tolerance of $\pm$ 6 counts. The calibration is 20 counts per mm.



REFERENCE DWGS

D25-M-1651-S - END OF TANK 9 TO 54.20
1652-S - BLIP FROM 52.36 TO WAL
1653-S - FROM 54.20 TO 17.81
1654-S - FROM 17.81 TO 152.72
1655-S - FROM 152.72 TO 201.0
1656-S - FROM 201.0 TO 265.0
1657-S - FROM 265.0 TO 317.06
1658-S - FROM 317.06 TO 351.0
1659-S - FROM 351.0 TO 412.57
1660-S - FROM 412.57 TO END

D25-M-1682-S - MEDICAL BEAM LINE LAYOUT
B28-M-1564-S - VACUUM SCHEMATIC

* - COMPONENT INSTALLED BUT NOT USED, SIGNAL UNAVAILABLE.

SEE D25 TECH NOTE 86-18 FOR NOMENCLATURE & SYMBOLS.

D25-M-1883-S

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BLIP & ANTI

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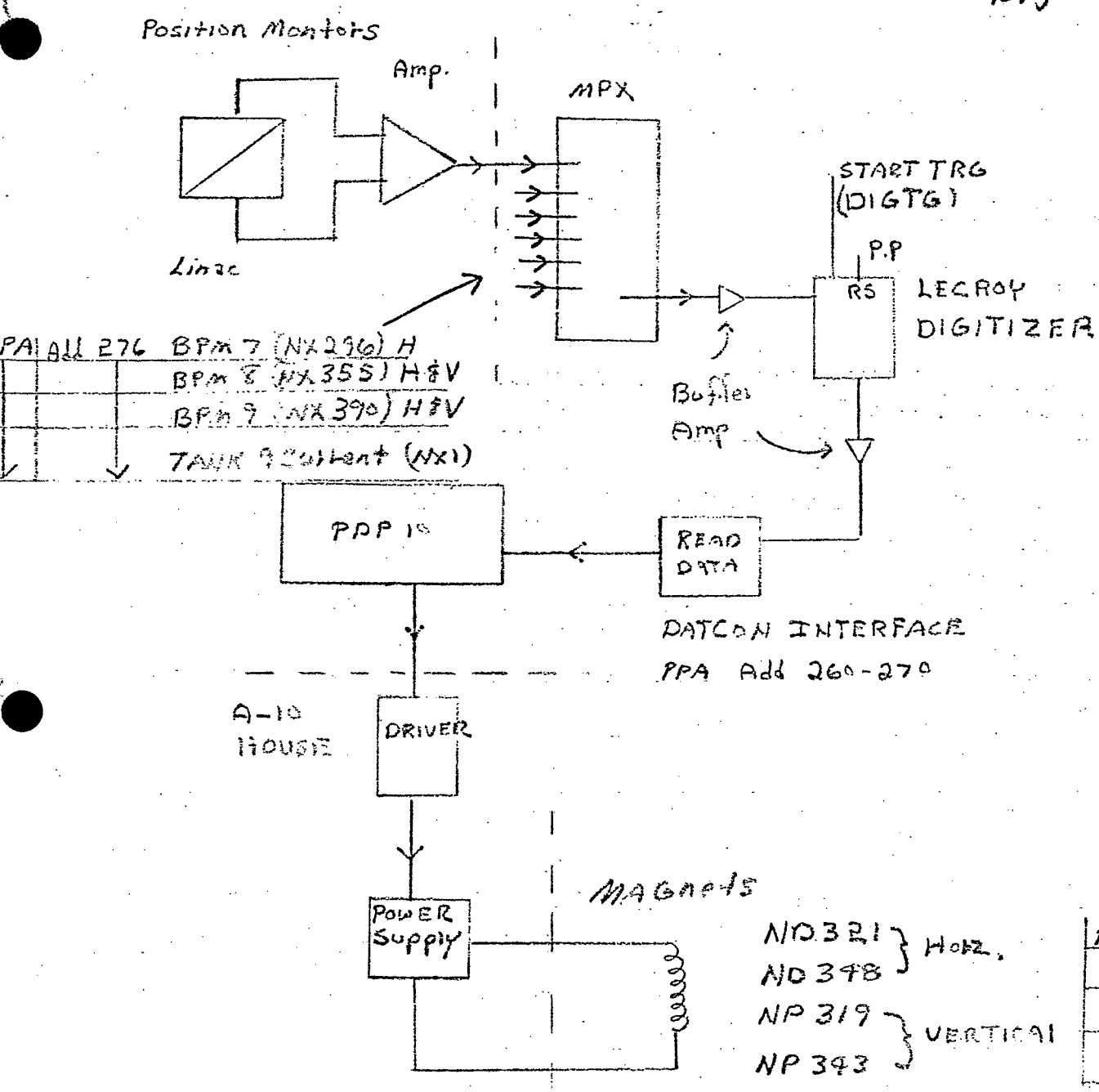
BY_____ DATE 12-79 SUBJECT HEBST SHEET NO._____ OF_____

CHKD. BY_____ DATE_____ Block Diagram JOB NO._____

DEPT. OR PROJECT_____

Dig # 1



ring hebt line

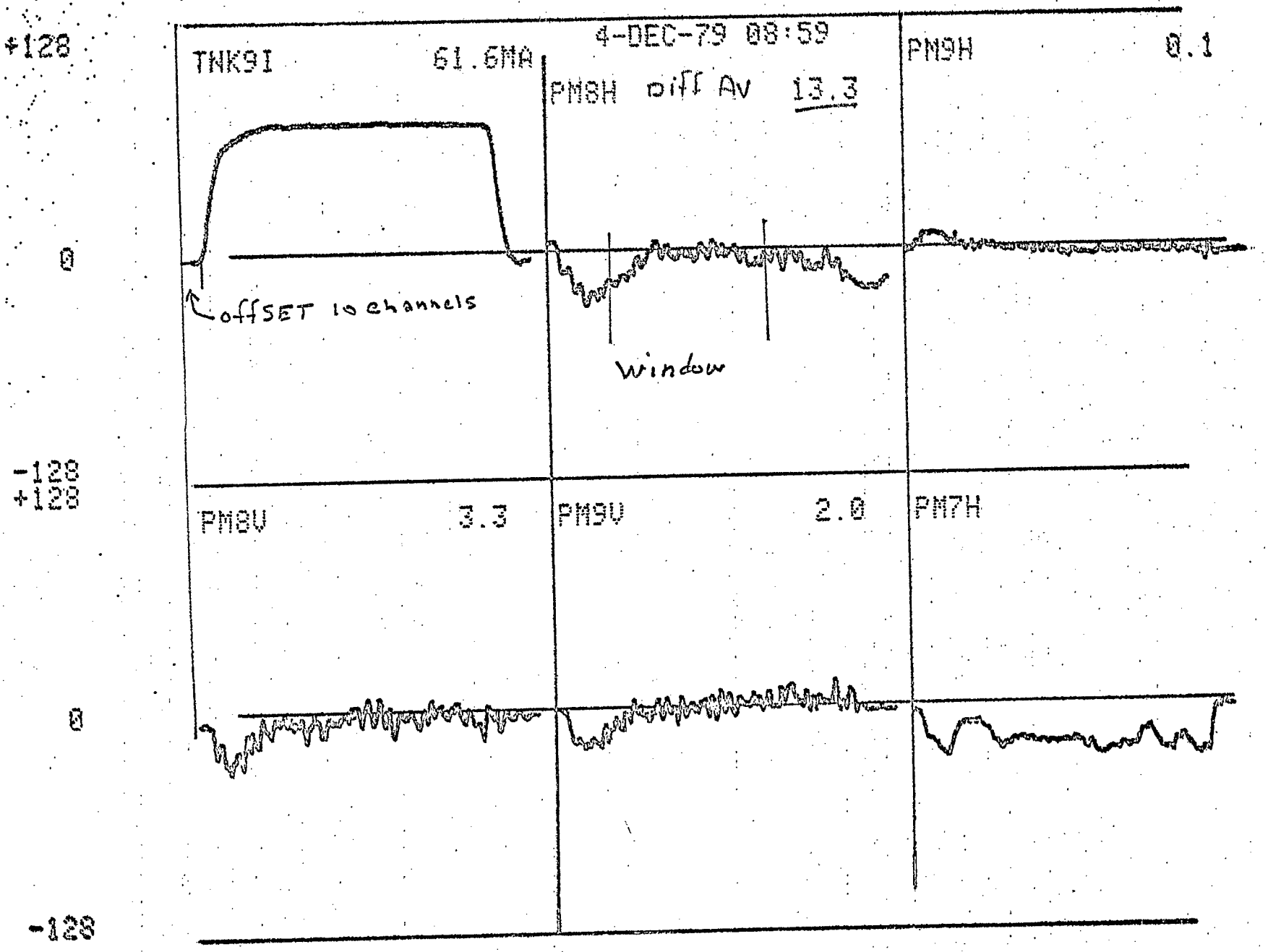
DRAwing # Position Monitor D2BLE 1349-3

MPX switch D09-E499-3

Buffer Amp D09-E1180-2

DATCon Interface D09-E1161-3

CAL 20 counts / mm Plot DATA



```
 1/ 1 RIN DIG   .SEL 11-OCT-79 10:21  14.2
EQUIPMENT  MODE  COMMAND   READBACK AT  UNTM
      *ND321          -568   ON   -570      2
      *ND348           392   ON    395     -3
       ND449          2180   ON   2177      3
      *NP319           -92   ON    -93      1
      *NP343           569_  ON    617    -48
       NP447            40   ON     40      0
       NP456          -270   ON   -269     -1
       PM8H              2  AMP     -1      3
       PM8V              3  AMP     -3      6
       PM9H              4  AMP      0      4
       PM9V             12  AMP     -1     13
       DIMXA       TNK9I       0
       DIMXB       PM7H        1
       TNK9I             1  AMP     -1      2
       PM7H              0  AMP     -2      2
LIN    ND249           465          460   458      2
       DIGTG           633  ON   10US  INJ  P

  1     2     3     4     5     6     7     8
SEL   SET   GETT SAVT CHNG BACK NEXT LIB
```