

Pgm SPEC - I

File SSPECD

```

L.0001 //A=FSPC25 JOE 006,BPI,MSGLEVEL=(0,0),CLASS=B
L.0002 //ROUTE PRINT HCLD
L.0003 //SETUP TAPE=(ARFVEL SL, NO RING)
L.0004 //JOBPARM R*0.0
L.0005 // EXEC FORTPL0T,REGION=GO=100K,TIME=GO=5,FORT=NOSOURCE
L.0006 //STEP1 IS DD DSN=SYS2,PL0T.SYSTEN,VISITLOAD,DISP=SHR
L.0007 //SYSTEM DD *
L.0008 C RAW DIGITIZED EVENTS ARE SAMPLED OVER A TIME WINDOW (3.45SEC),
L.0009 C AND THEN CORRECTED FOR INSTRUMENT RESPONSE AND EDGE EFFECTS.
L.0010 C THE DISPLACEMENT SPECTRA IS THEN OBTAINED FROM THE TREATED DATA, AND PLOTTED
L.0011 C ON THE CALCOMP PLOTTER (MAX PAPER LIMIT RESTRICTS THE PROCESSING TO SIX
L.0012 C EVENTS AT ANY ONE RUN).
L.0013 C DIMENSION F(260),RESP(260),SPEC(130),IS(64),S(64),TAPE(9),EN(258)
L.0014 C 1,BIR(260),B(128),PAT(126),IBUF(1000),FF(260)
L.0015 C COMPLEX CF(129),CRESP(129)
L.0016 C EQUIVALENCE (CF(1),F(3)),(CRESP(1),RESP(3)),(BIR(1),B(1))
L.0017 C COMMON TIME(258)
L.0018 C THIS PROGRAMME IS WRITTEN FOR A DATA WINDOW OF 256 SAMPLES
L.0019 C SPS = NO. OF SAMPLES PER SECOND (1010. RATE) FOR THE DATA.
L.0020 C THE PERIOD OF THE SAMPLE ANALYSED SHOULD GIVE 256 SAMPLES (2**8)
L.0021 C E.G. FOR SPS =640 THEN T = 0.4 SECS.
L.0022 C SPS=640
L.0023 C T=256/SPS
L.0024 C DO 40 I=1,256
L.0025 C 40 TIME(I)=1
L.0026 C TIME(257)=0.
L.0027 C XINC =NO. OF SAMPLES PER PLOT INCREMENT (OR PER 1 CM.)
L.0028 C XINC=10.0
L.0029 C
L.0030 C TIME SCALE OF PLOTS : 1MM=2.56 SAMPLES=0.004SEC (1.E. 10 CM AXIS)
L.0031 C
L.0032 C TIME(258)=256/XINC
L.0033 C PI =3.1416
L.0034 C TCON=4*PI/((256/SPS)**2)
L.0035 C CALL PLOTS(IBUF,4000)
L.0036 C READ(5,10)(RESP(I),I=1,256)
L.0037 C 10 FORMAT(16F5.2)
L.0038 C READ(5,11) TAPE
L.0039 C 11 FORMAT(9F5.3)
L.0040 C XOT=0.0
L.0041 C IRS=-1
L.0042 C CALL QRSH(IRS,XINC,XOT,5999)
L.0043 C CALL WRITE(RES2,' RESPONSE ', ' D.U./MICRON ')
L.0044 C
L.0045 C
L.0046 C RES2: OUTPUT IN D.U. OF SYSTEM WITH AN IMPULSE INPUT OF 1 MICRON,
L.0047 C OR 1920 MICRONS/SEC FOR 1/1920 SEC,
L.0048 C SAMPLED AT 1920 SAMPLES/SEC, GAINS 1 & 50.
L.0049 C
L.0050 C
L.0051 C CALL RHARI(RES2,7,IS,S,IFERR,1)
L.0052 C
L.0053 C RES2 : D.F.T. OF RES2, NPTS = 256, T(RES2) =0.1333SEC,
L.0054 C CRESP : COMPLEX EQUIVALENT OF RES2.

L.0055 C
L.0056 C DO 41 I=1,128
L.0057 C 41 CRESP(I)=CRESP(I)*(T/2)
L.0058 C WRITE(6,25)RESP
L.0059 C 25 FORMAT(16F5.4)
L.0060 C
L.0061 C CRESP : RESPONSE IN FREQUENCY DOMAIN IS D.F.T.
L.0062 C OF IMPULSE RESPONSE DIVIDED BY A FACTOR OF 2/T, T(RES2)=256/SPS
L.0063 C CRESP IN D.U./MICRON/SEC.
L.0064 C
L.0065 C NOR = ORDER OF THE POLYNOMIAL FOR FILTERING.
L.0066 C NL : CUT OFF FREQUENCY.
L.0067 C IFIL > 0 APPLY LOW PASS FILTER.
L.0068 C NFILES = TOTAL NO OF FILES (= EVENTS).
L.0069 C
L.0070 C JFR=128
L.0071 C READ(5,120) NFILES,IFIL,NOR,NL
L.0072 C 120 FORMAT(15,I1,14,F5.0)
L.0073 C IFIL IF IL 1 16,18,17
L.0074 C 17 CALL BLFIL(B,NOR,NL,JFR,P,T)
L.0075 C IRS=0
L.0076 C CALL QRSH(IRS,XINC,XOT,999)
L.0077 C CALL WRITE(6,' FILT RES2 ', ' LOW PASS 40HZ')
L.0078 C CALL QRSH(IRS,XINC,XOT,999)
L.0079 C CALL WRITE(PAT,' X ATTEN. ', ' PER CENTAGE ')
L.0080 C 18 IRS=1
L.0081 C DO 1 NEV =1,NFILES
L.0082 C READ(5,121) NFIL,GAIN,KSKIP,NSKIP,NTOT,COMP
L.0083 C 121 FORMAT(15,F5.3,15,I2,15,A2)
L.0084 C IF (NTOT.EQ.0) NTOT=256
L.0085 C WRITE(6,19) NFIL,COMP
L.0086 C 19 FORMAT('1',T50,'FILE NUMBER ',I4,'/T50,16(''),T100,
L.0087 C *COMPONENT = ',A2)
L.0088 C WRITE(6,16) NSKIP,KSKIP
L.0089 C 16 FORMAT(' NO. OF BLOCKS SKIPPED (1024 SAMPLES/BLOCK) = ',I2,'/
L.0090 C * NO. OF SAMPLES SKIPPED IN THE NEXT BLOCK = ',I5,'/
L.0091 C CALL QRSH(IRS,XINC,XOT,999)
L.0092 C CALL SYMBOL(0,0,0,0,0,6,' FILE NO.',90,0,9)
L.0093 C VEN=FLOAT(NFIL)
L.0094 C CALL NUMBER(0,0,11,0,0,6,VEN,90,0,-1)
L.0095 C XOT=2.0
L.0096 C IRS=-1
L.0097 C CALL PLOT(XOT,0,-3)
L.0098 C CALL READ(6,NEV,KSKIP,NSKIP,NTOT)
L.0099 C READ(5,125) (F(K),K=1,NTOT)
L.0100 C 125 FORMAT(16F5.0)
L.0101 C
L.0102 C F : RAW SEISMOGRAM IN D.U., SAMPLED AT 'SPS' SAMPLES/SEC
L.0103 C GAIN = FACTOR TO NORMALIZE RAW DATA TO GAINS 1:REC. 50:REP.
L.0104 C REC GAINS =R.T. GAIN 1 ARE AS FOLLOWS: 2**1.45 3**4.18 4**18.18
L.0105 C 5**55.0 6**177.7 7**455 REP GAINS ARE ABSOLUTE.(E.G. 100 = *100)
L.0106 C E.G. IF REC=1 & REP=100 THEN GAIN =0.5
L.0107 C
L.0108 C DC=0.
L.0109 C DO 2 I=1,256
L.0110 C 2 DC=DC+F(I)
L.0111 C DC=DC/256.
L.0112 C WRITE(6,20)GAIN,DC
L.0113 C 20 FORMAT(' GAIN:',F5.4,' , DC REMOVED',F5.0)

```

SPEC-2 Sub RRITE Sub ORSH

```

L.0114      DO 3 I=1,256
L.0115 3     F(I)=(F(I)-DC)*GAIN
L.0116      DO 4 I=1,9
L.0117      F(I)=F(I)*TAPE(I)
L.0118      I=257-1
L.0119      F(I)=F(I)*TAPE(I)
L.0120 C
L.0121 C     F : SEISMOGRAM IN D.U., GAINS 1 & 50, WINDOWED WITH COSINE BELL.
L.0122 C
L.0123      CALL ORSH(IRS,XINC,XDT,&999)
L.0124      CALL RRITE(F,' RAW DATA ', ' D.U.,GAINS 1&50')
L.0125      CALL RHARI(F,7,15,5,IFERR,2)
L.0126 C
L.0127 C     F : D.F.T. OF SEISMOGRAM, GAINS 1 & 50, NPTS = 256, T = 256/SPS SEC.
L.0128 C     CF : COMPLEX EQUIVALENT OF F.
L.0129 C
L.0130      IRS=0
L.0131      XDT=0.0
L.0132      CALL ORSH(IRS,XINC,XDT,&999)
L.0133      CALL RRITE(F,' TRANSFORM ', 'FREQ. DOMAIN ')
L.0134 C     DECONVOLUTION OF DATA BY SYSTEM RESPONSE CRESP.
L.0135      DO 5 I=1,124
L.0136      CF(I)=CF(I)*CRESP(I)
L.0137      IF (IFIL.GT. 0) CF(I)=CF(I)*B(I)
L.0138 5     SPEC(I)=ALOG10(CABS(CF(I))/(1+TCN))
L.0139      IF (IFIL.EQ. 0) GO TO 8
L.0140      CALL ORSH(IRS,XINC,XDT,&999)
L.0141      CALL RRITE(F,' FILT. TRANS', ' FREQ. DOMAIN ')
L.0142 C     FF : IS FILTERED RAW DATA.
L.0143      DO 49 K=1,256
L.0144 49      FFK(K)=FK(K)
L.0145      CALL RHAR(FF,7,15,5,IFERR,-2)
L.0146      CALL ORSH(IRS,XINC,XDT,&999)
L.0147      CALL RRITE(FF,' FILT RAW D ', ' TIME DOMAIN ')
L.0148 C
L.0149 C     CF : D.F.T. OF GROUND VELOCITY IN MICRONS/SEC, NPTS=256, T = 256/SPS SEC.
L.0150 C     F : REAL EQUIVALENT OF CF.
L.0151 C     SPEC : AMPLITUDE SPECTRAL DENSITY IN MICRON-SEC.
L.0152 C     TCN = 4*PI/(T**2) = 4*PI*(SPS/256)**2
L.0153 C
L.0154 C     SCALING OF AMPLITUDE SPECTRAL PLOT.
L.0155 C     REDUCES 1ST HARMONIC BY TRAT IF AMP. OF 1ST IS >DC BY 2.0
L.0156 8     SPEC(124)=AMAX1(SPEC(2),SPEC(3),SPEC(4))
L.0157      RAT=10.**(SPEC(1)-SPEC(124))
L.0158      IF (RAT-2.0) 51,51,50
L.0159 50      F(3)=F(3)/RAT
L.0160      F(4)=F(4)/RAT
L.0161 51      SPEC(130)=0.2
L.0162      SS=SPEC(124)
L.0163      IS=IFIL(55)
L.0164      SS=FLOAT(SS)
L.0165      SPEC(24)=SS
L.0166      F(1)=0.
L.0167      CALL RHAR(F,7,15,5,IFERR,-2)
L.0168 C
L.0169 C     F : GROUND VELOCITY IN MICRONS/SEC,SAMPLED AT 'SPS' SAMPLES PER SEC.
L.0170 C     DC & FUNDAMENTAL OVE 256/SPS SECS REMOVED.
L.0171 C
L.0172      IRS=1

L.0173      CALL ORSH(IRS,XINC,XDT,&999)
L.0174      CALL RRITE(F,' VELOCITY ', ' MICRONS/SEC. ')
L.0175      IRS=0
L.0176      F(1)=0.
L.0177      EN(1)=0.
L.0178      DO 6 I=2,256
L.0179      EN(I)=EN(I-1)+(F(I)**2)/SPS
L.0180 6     F(I)=F(I-1)+F(I)/SPS
L.0181 C
L.0182 C     F : GROUND DISPLACEMENT IN MICRONS, AT 'SPS' SAMPLES/SEC..
L.0183 C     EN : INTEGRAL OF VEL**2 OVER TIME (IN MICRONS**2/SEC),
L.0184 C     AT 'SPS' SAMPLES PER SECOND.
L.0185      CALL ORSH(IRS,XINC,XDT,&999)
L.0186 C
L.0187      CALL RRITE(F,' DISP ', ' MICRONS ')
L.0188      CALL ORSH(IRS,XINC,XDT,&999)
L.0189      CALL RRITE(EN,' ENERGY ', ' MICRONS**2/SEC.')
L.0190      IRS=1
L.0191      XDT=18
L.0192      CALL ORSH(IRS,XINC,XDT,&999)
L.0193      CALL PSPEC(SPEC,XDT)
L.0194      IRS=-1
L.0195 1     XDT=0.0
L.0196 999    CALL PLOT(0.0,0.0,&999)
L.0197      STOP
L.0198      END

L.0199      SUBROUTINE RRITE(A,B)
L.0200      DIMENSION F(256),G(256),A(3),B(4)
L.0201      COMMON TIME(256)
L.0202      CALL SCALE(F,6.,256,1,10.)
L.0203      CALL AXIS(0.,0.,A,12,5.,90.,F(257),F(258),10.)
L.0204      CALL LINE(TIME,F,256,1,0,0)
L.0205 C     PLOT OF TIME OR FREQUENCY AXIS.
L.0206 C     PLOTS A TICK EVERY 25 UNITS
L.0207      S25=(1/TIME(256))*25
L.0208      TIC=0.0
L.0209      CALL PLOT(0.0,0.0,3)
L.0210      DO 2 J=1,256,25
L.0211      CALL PLOT(TIC,0.0,2)
L.0212      CALL PLOT(TIC,-0.2,2)
L.0213      VAL=FLOAT(J-1)
L.0214      CALL NUMBER(TIC,-0.5,0.2,VAL,0.,-1)
L.0215      CALL PLOT(TIC,0.0,3)
L.0216 2     TIC=TIC+S25
L.0217      NN=FIX(ALOG10(F(256)*1.0E10))-10
L.0218      PAC=10.**NN
L.0219      DO 1 I=1,256
L.0220 1     G(I)=F(I)/PAC
L.0221      WRITE(6,20)A,G
L.0222 20      FORMAT(1,3A4,/,16F8.2)
L.0223      WRITE(6,21)NN,0
L.0224 21      FORMAT(' *10.**',12,A4)
L.0225      RETURN
L.0226      END

L.0227      SUBROUTINE ORSH (IRSET,XINC,XDTHR,*)
L.0228 C     ORSH : SHIFTS ORIGIN OF PLOTTER TO A NEW POSITION AT XD & YD CMS
L.0229 C     FROM PREVIOUS ORIGIN.
L.0230 C     YIP/XIP ARE THE INCREASE OF THE ORIGIN POSITION FROM THE LEFT
L.0231 C     BOTTOM CORNER OF THE PLOTTER/PAPER.

```

SPEC - 3 Sub ORSH Sub READT Sub PSPEC

```

L.0232 C XMAX/YMAX : MAX. DISTANCES ALONG THE PLOTTER X & Y AXIS.
L.0233 C IRSET < 0 : START A NEW SET OF PLOTS AT PREVIOUS ORIGIN.
L.0234 C * 0 : CONTINUE ABOVE PREVIOUS PLOT.
L.0235 C > 0 : RETURN TO BOTTOM OF PAPER FOR NEXT PLCT.
L.0236 C XOTHR : INCREASE IN X ORIGIN IF RESET EXTERNALLY.
L.0237 C XINC : INCREMENT ALONG X AXIS, DEFINES ITS A PLOT LENGTH.
L.0238 C
L.0239 X0=0.0
L.0240 X=X+XOTHR
L.0241 XIP=XINC+1.5
L.0242 YMAX=24.0
L.0243 XMAX=100
L.0244 IF(IRSET) 10,11,12
L.0245 10 YIP=0.0
L.0246 Y0=0.0
L.0247 GO TO 1
L.0248 12 Y0=YIP
L.0249 X0=XIP
L.0250 YIP=0.0
L.0251 X=X+X0
L.0252 GO TO 1
L.0253 11 Y0=Y0+YIP
L.0254 YIP=Y0+YIP
L.0255 IF(YIP>LT.YMAX) GO TO 1
L.0256 YIP=YIP-Y0
L.0257 Y0=YIP
L.0258 YIP=0.0
L.0259 X0=XIP
L.0260 X=X+X0
L.0261 IF(X>LT.XMAX) GO TO 2
L.0262 WRITE(6,66) XMAX
L.0263 66 FORMAT(5X,'***** MAX. X-DISTANCE OF ',F5.0,'CMS EXCEEDED ON ',
L.0264 '*PLOTTER',/,T10,'PROG. TERMINATED DURING THIS FILE ')
L.0265 RETURN
L.0266 2 CALL PLOT(X0,Y0,-3)
L.0267 Y0=ABS(Y0)
L.0268 RETURN
L.0269 END
-----
L.0273 SUBROUTINE READT(X,JJ,K,NSKIP,NTOT)
L.0274 C THIS SUBROUTINE READS A FILE FROM A TAPE.
L.0275 C THE FILES ARE READ IN THE ORDER OF THE //GO,FT00F000 STATEMENTS.
L.0276 REAL*4 X(50500)
L.0277 REAL*4 CUF(1024)
L.0278 CALL ERRSET(212,256,256)
L.0279 CALL ERRSET(218,256,256)
L.0280 JJ= FILE NUMBER I.E. //FT13F00JJ
L.0281 K= NO. OF SAMPLES TO BE SKIPPED IN THE FIRST BLOCK TO BE READ.
L.0282 C NSKIP= NO. OF BLOCKS TO BE SKIPPED FROM THE BEGINNING OF THE FILE.
L.0283 C NTOT= TOTAL NO. OF SAMPLES TO BE READ.
L.0284 C ( 1 BLOCK = 1024 SAMPLES )
L.0285 N=0
L.0286 C READS BLOCKS THAT ARE TO BE SKIPPED.
L.0287 NSK=NSKIP+1
L.0288 DO 9 I=1,NSK
L.0289 9 READ(13,END=4,ERR=6) OUT
L.0290 GO TO 200
L.0291 4 IF(N=NE+0) GO TO 1
L.0292 WRITE(6,100)JJ
L.0293 100 FORMAT(50X,'FILE NO*',I5,5X,'EMPTY FILE')
L.0294 GO TO 1
L.0295 6 M=N+1
L.0296 WRITE(6,101)JJ,M
L.0297 101 FORMAT(/,50X,'FILE NO*',I5,5X,'ERROR BLOCK*',I5,/)
L.0298 GO TO 9
L.0299 N=N+1
L.0300 IF(N>NT) GO TO 600
L.0301 MM=0
L.0302 DO 700 I=K,1024
L.0303 700 MM=MM+1
L.0304 IF(MM>EQ.NTOT) GO TO 5
L.0305 X(MM)=OUT(I)
L.0306 GO TO 9
L.0307 600 DO 5 I=1,1024
L.0308 5 MM=MM+1
L.0309 IF(MM>EQ.NTOT) GO TO 10
L.0310 5 X(MM)=OUT(I)
L.0311 GO TO 9
L.0312 C READ REMAINING BLOCKS OF CURRENT FILE WHICH HAVE NOT BEEN USED
L.0313 10 DO 1000 I=1, 50
L.0314 1000 READ(13,END=1,ERR=1)OUT
L.0315 1 RETURN
L.0316 END
-----
L.0317 SUBROUTINE PSPEC(SPEC,NT)
L.0318 DIMENSION SPEC(130),SPL(128),XLOG(130)
L.0319 C PSPEC PLOTS THE SPECTRUM OF 1 TO 128HZ ON A LOG LOG AXIS OF 5CM/DECADE.
L.0320 C I.E. XLOG(130)=0.2 LOG UNITS PER CM.
L.0321 CALL PLOT(0.0,20.0,-3)
L.0322 DO 1 I=1,128
L.0323 XLOG(I)=ALOG10(FLOAT(I))
L.0324 XLOG(129)=0.0
L.0325 C A SETS THE START OF THE VERT LOG AXIS SCALE AT 4+3/5 DECADES FROM THE ORIG.
L.0326 A=2.51189*(10**(SPEC(129)-5.0))
L.0327 AL=ALOG10(A)
L.0328 DO 2 I=1,128
L.0329 SPL(I)=SPEC(I)

```

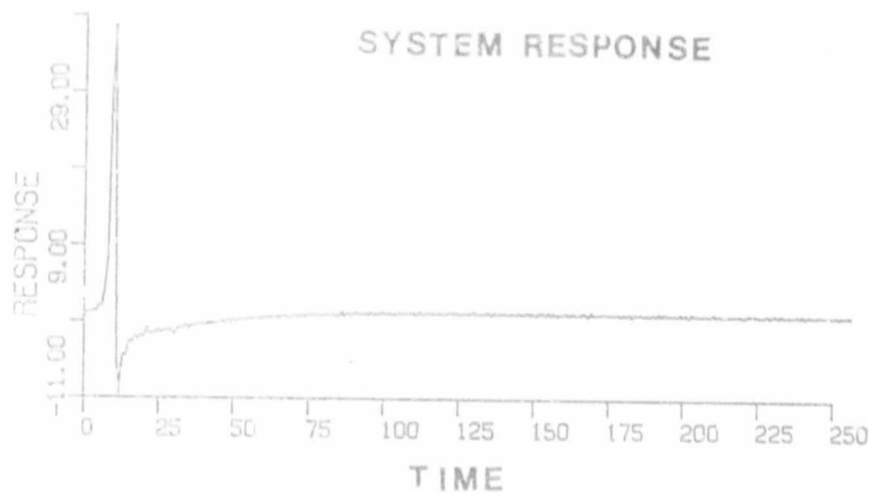
SPEC-4 sub PSPEC

```

L.0350      IF(SPEC(1).LT.AL) SPEC(1)=AL+0.05
L.0351      2      CONTINUE
L.0352      B=SPEC(130)
L.0353      XLOG(130)=0.2
L.0354      CALL LGAXS(0.,-23.,' LOG AMP(DISPL) SPECTRUM',25,20.0,90.,
L.0355      *A,3)
L.0356      CALL LGAXS(15.,-23.,' ',-1,20.0,90.,A,B)
L.0357      A=1.0
L.0358      B=XLOG(130)
L.0359      CALL LGAXS(0.,5.,' ',1,15.0.,A,B)
L.0360      CALL LGAXS(0.,-23.,' LOG FREQUENCY',-13,15.0.,A,B)
L.0361      CALL LINE(XLOG,SPEC,128,1,-1,1)
L.0362      WRITE(6,22)SPL,SPEC(129),SPEC(130)
L.0363      22      FORMAT('LOG AMPLITUDE SPECTRAL DENSITY (MICRON-SEC.)',/
L.0364      *('10F8.2'))
L.0365      CALL PLGT(XOT,-20.,-3)
L.0366      RETURN
L.0367      END
L.0368      //LXED,SYSL IN DJ
L.0369      INCLUDE      DD I(HXRRM,31)
L.0370      //DD1      DD DSN=ACM.,*XN006,LOAD,0;SP=SHR
L.0371      //GO,PLTAXYZ DD DSN=4ANULLF,1L
L.0372      //GO,PLTASGX DD UNIT=TAPE,VOL=SER*ARFVEL,DCB=(RECFH=VBS,LRECL=2052,
L.0373      //BLKSIZ=2048),LABEL=(1083,,OUT),DSN=FILE083,DISP=(NEW,PASS)
L.0374      //GO,PLT13F001 DD UNIT=TAPE,VOL=SER*ARFVEL,DCB=(RECFH=VBS,LRECL=2052,
L.0375      //BLKSIZ=2048),LABEL=(1083,,OUT),DSN=FILE083,DISP=(NEW,PASS)
L.0376      //GO,PLT13F002 DD UNIT=TAPE,VOL=SER*ARFVEL,DCB=(RECFH=VBS,LRECL=2052,
L.0377      //BLKSIZ=2048),LABEL=(1083,,OUT),DSN=FILE083,DISP=(NEW,PASS)
L.0378      //GO,PLT13F003 DD UNIT=TAPE,VOL=SER*ARFVEL,DCB=(RECFH=VBS,LRECL=2052,
L.0379      //BLKSIZ=2048),LABEL=(125,,OUT),DSN=FILE125,DISP=(NEW,PASS)
L.0380      //GO,PLT13F004 DD UNIT=TAPE,VOL=SER*ARFVEL,DCB=(RECFH=VBS,LRECL=2052,
L.0381      //BLKSIZ=2048),LABEL=(134,,OUT),DSN=FILE134,DISP=(NEW,PASS)
L.0382      //GO,PLT13F005 DD UNIT=TAPE,VOL=SER*ARFVEL,DCB=(RECFH=VBS,LRECL=2052,
L.0383      //BLKSIZ=2048),LABEL=(135,,OUT),DSN=FILE135,DISP=(NEW,PASS)
L.0384      //GO,SYSIN DD *
L.0385      16      20      37      44      102      111      330      730      3055      3772      -617-1040      -525      -543      -355      -363
L.0386      -286      -316      -277      -284      -183      -255      -242      -239      -212      -239      -207      -213      -207      -265      -199      -169
L.0387      -189      -136      -173      -143      -147      -136      -130      -129      -120      -100      -109      -107      -112      -85      -98      -81
L.0388      -87      -72      -86      -66      -65      -67      -47      -49      -47      -42      -48      -38      -36      -37      -30      -35
L.0389      -31      -26      -16      -27      -28      -9      -7      -19      -12      -12      -1      4      -2      2      -9      9
L.0390      13      9      23      36      12      25      11      12      26      20      22      21      25      33      1      44
L.0391      16      23      33      20      27      20      27      15      20      35      19      30      20      20      23      16
L.0392      22      40      25      10      26      21      35      7      26      14      25      27      18      21      31      11
L.0393      26      19      18      35      23      21      3      32      34      2      37      12      32      5      10      13
L.0394      31      5      23      10      3      27      34      -11      34      16      5      16      22      23      10      13
L.0395      5      21      5      15      5      25      -7      19      10      21      1      12      3      19      0      23
L.0396      7      23      5      13      11      -3      25      1      19      -14      28      10      8      1      13      1
L.0397      -6      25      5      10      -1      0      11      5      11      1      11      -6      -4      20      5      9
L.0398      8      2      -7      21      -11      6      19      -6      15      -2      -1      2      -3      18      -6      15
L.0399      -12      4      5      -3      8      13      -1      -9      5      -10      5      -2      3      -1      6      0
L.0400      .024      .095      .206      .345      .500      .655      .795      .905      .972      ← Cosine Taper
L.0401      5
L.0402      630.345      674.2      N
L.0403      860.045      468.1      V
L.0404      1250.006      949.1      V
L.0405      1340.014      1003.0      V
L.0406      1350.014      140.2      E
L.0407      //

```

Example J.C.L. & Data included



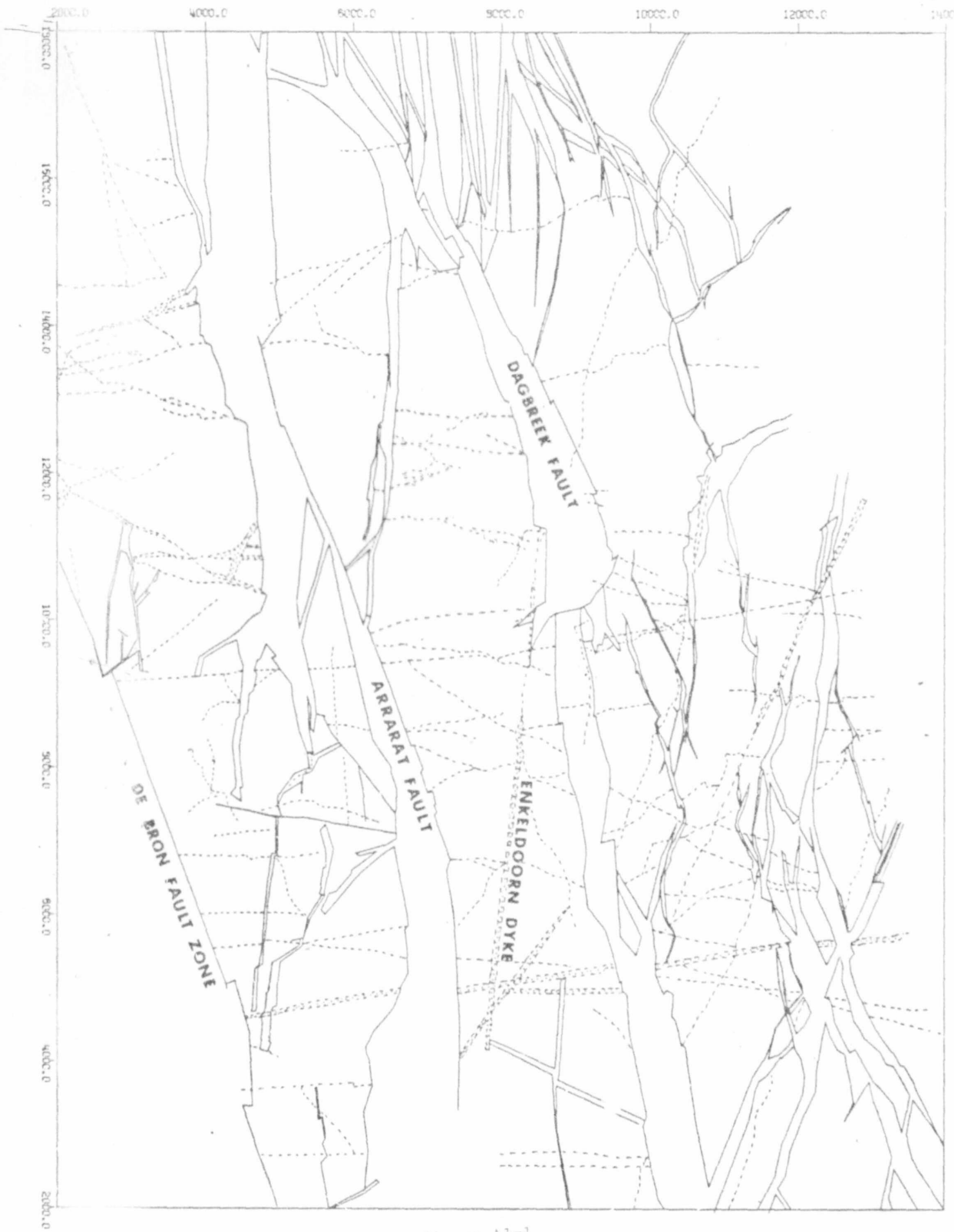


Figure A1-1

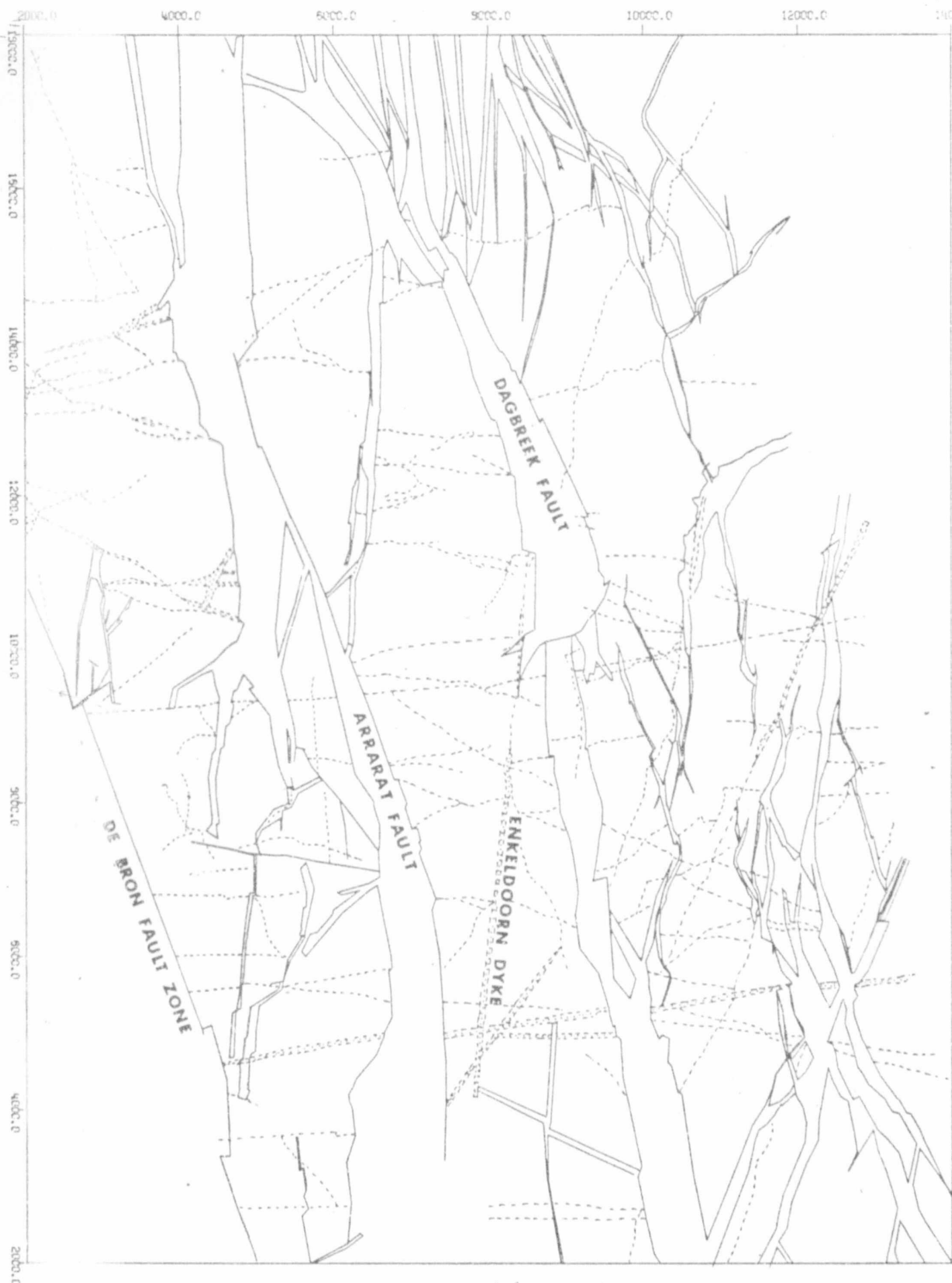


Figure A1-1

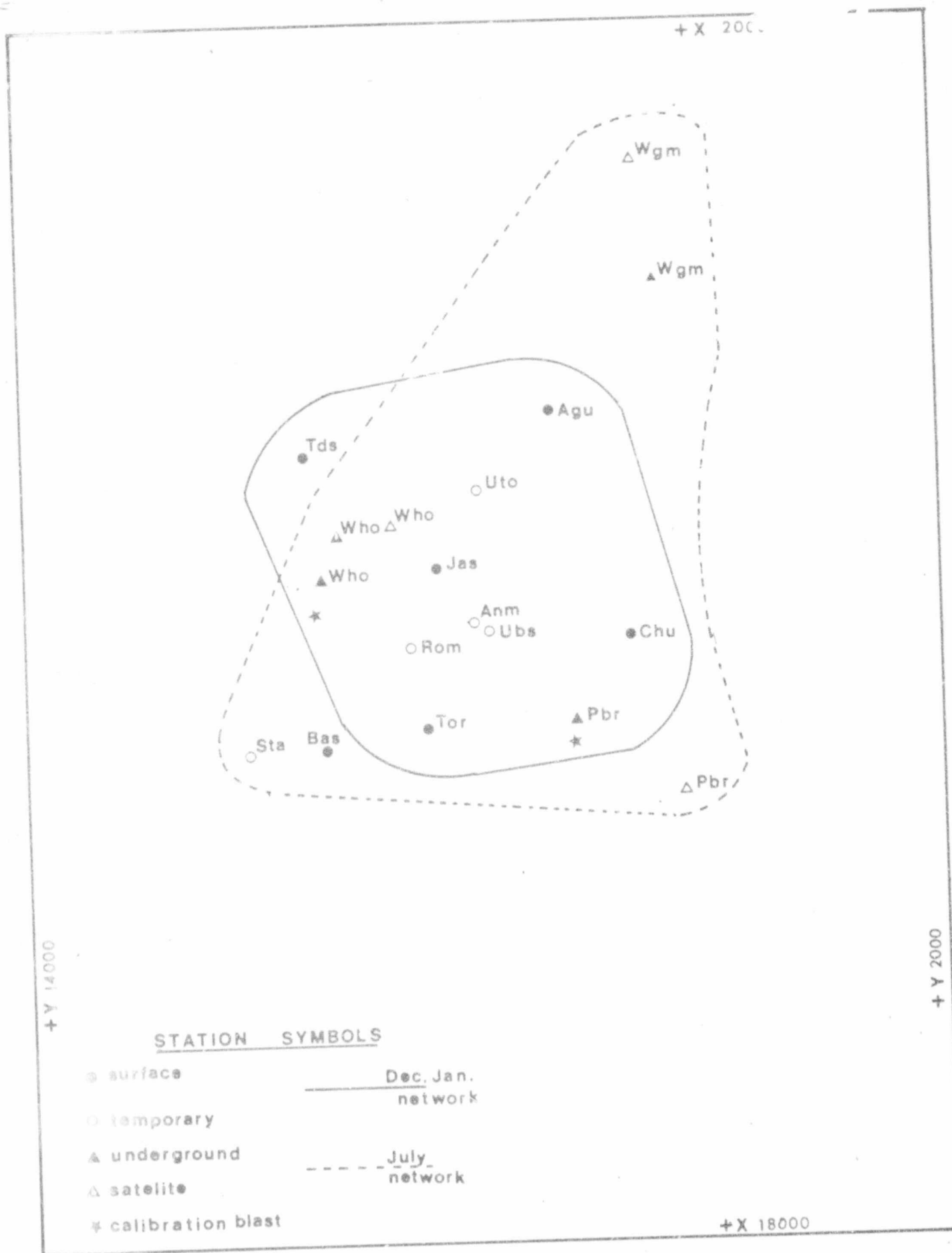


Figure A1-2

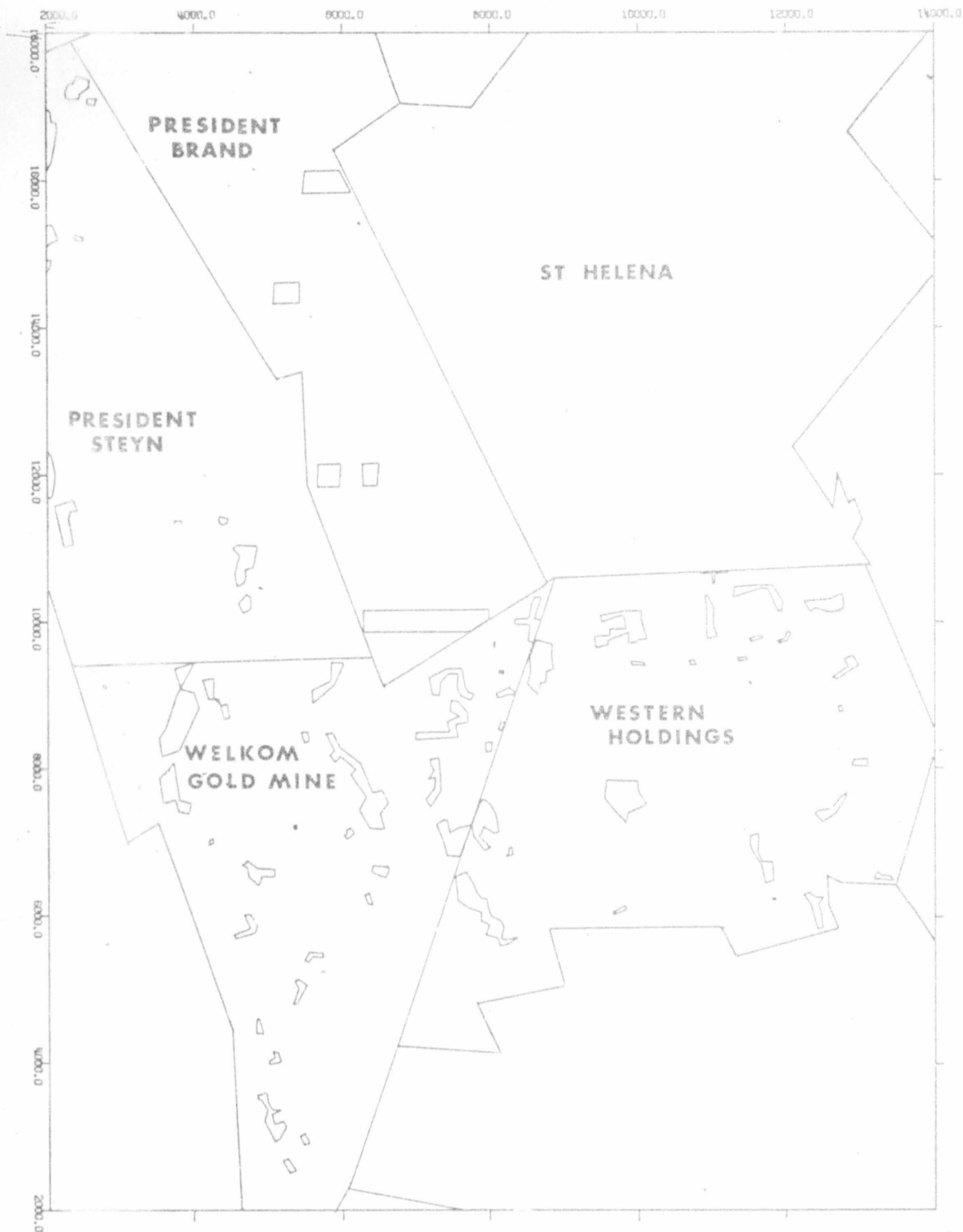


Figure A1-3

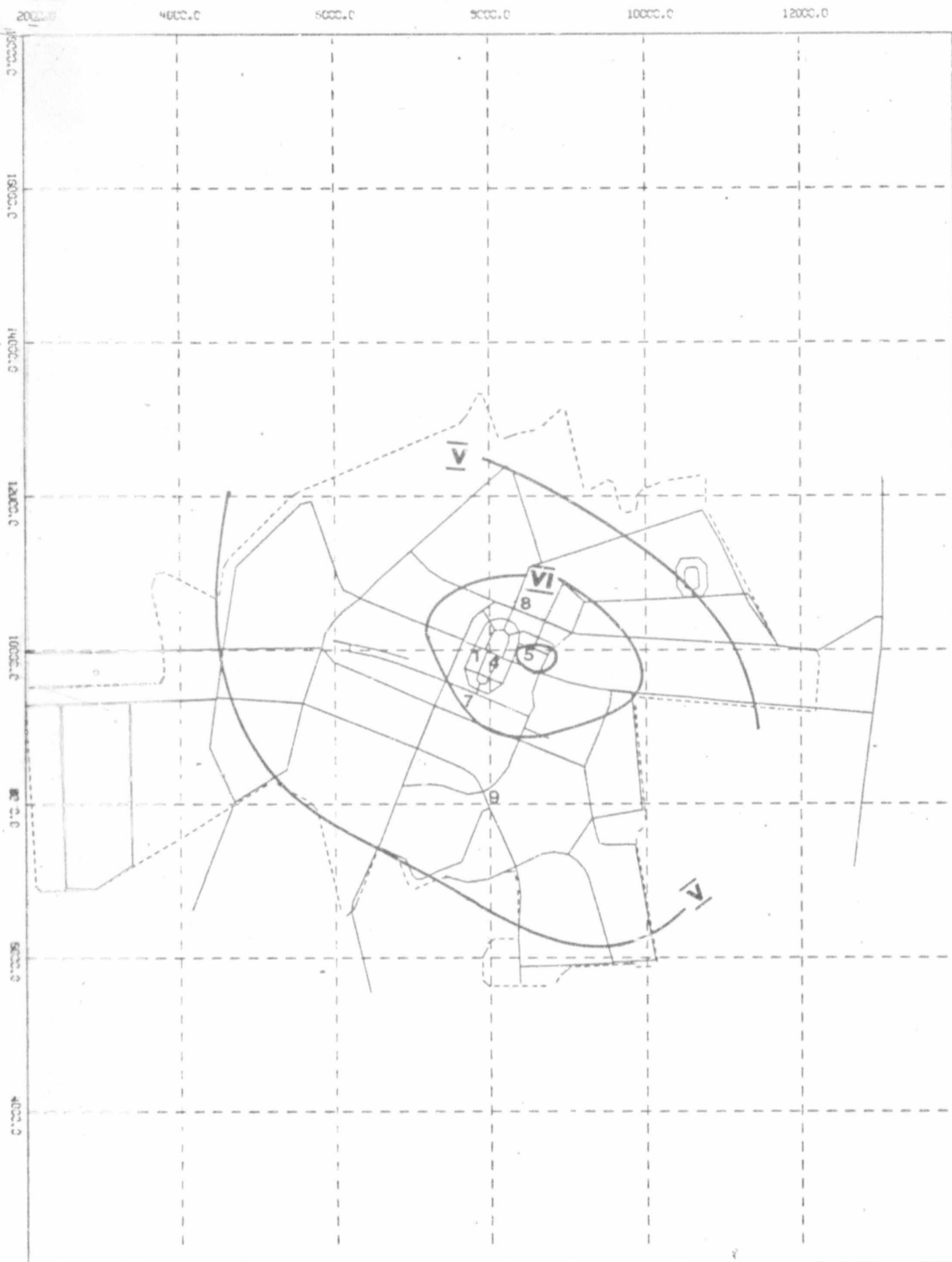


Figure A1-4 }

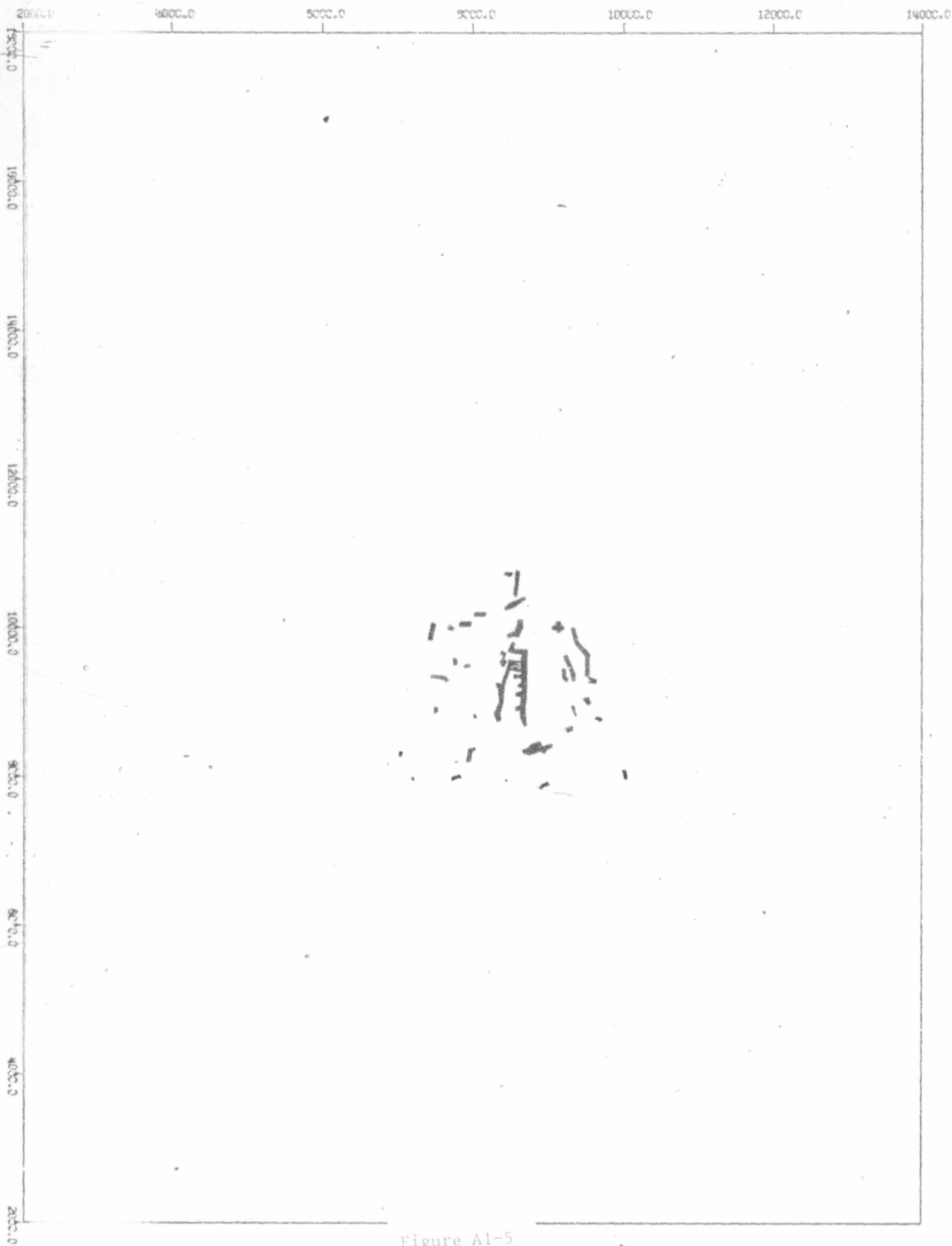


Figure A1-5

1.F.3 GOLDFIELDS SEISMICITY DEC. 1976/JAN. 1977.

DEPTH SYMBOLS

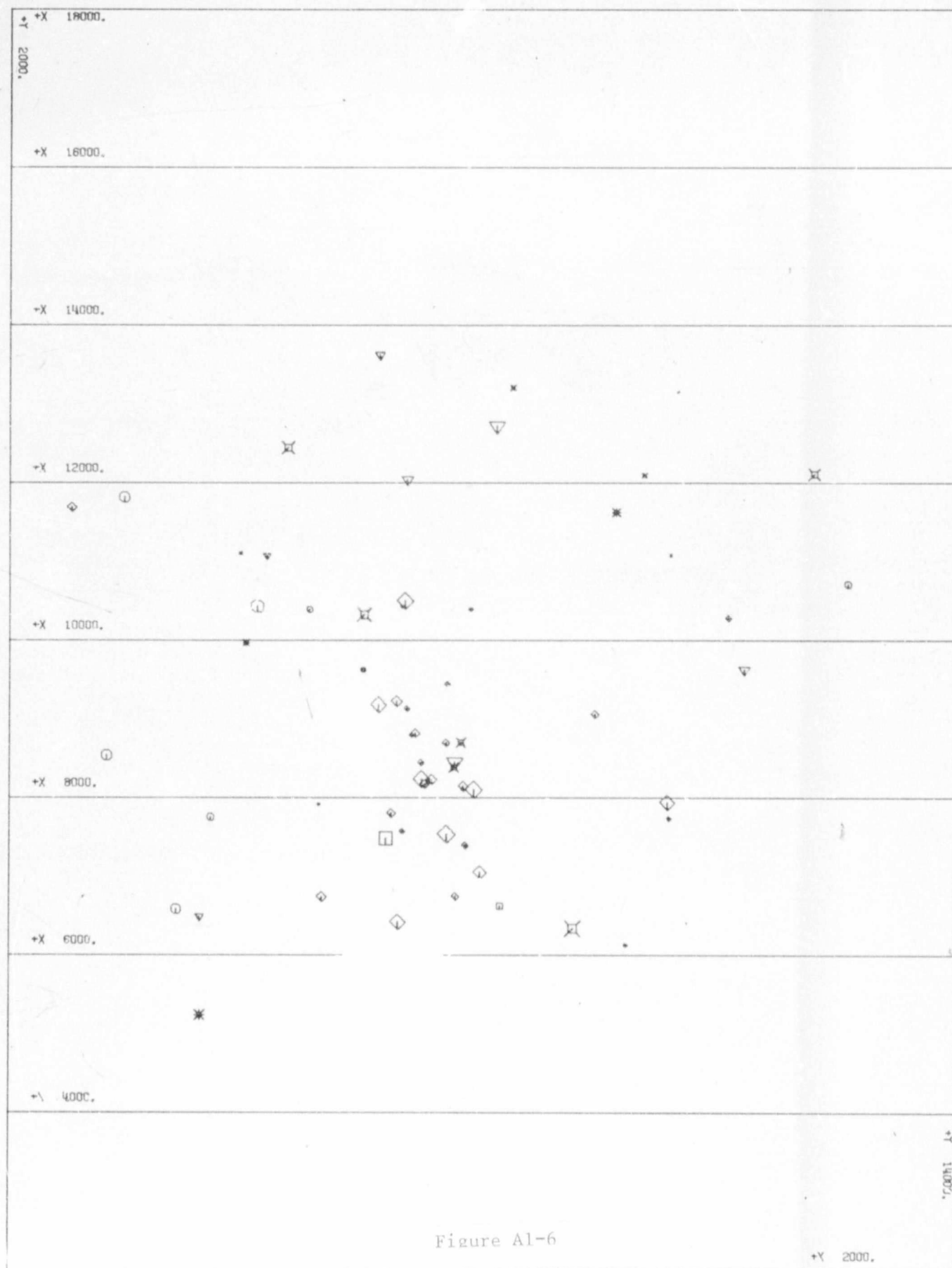
<1.5 2.0 2.5 3.5 4.5 >4.5

□ ○ ▲ ◇ × ■

SCALE = 1: 20000

PLOT REDUCED BY :

0.30



G.F.S GOLDFIELDS SEISMICITY JULY 1977

DEPTH SYMBOLS
 <1.5 2.0 2.5 3.5 4.5 >4.5
 □ ○ ▲ ◆ × ★
 SCALE = 1: 20000 PLOT REDUCED BY : 0.30

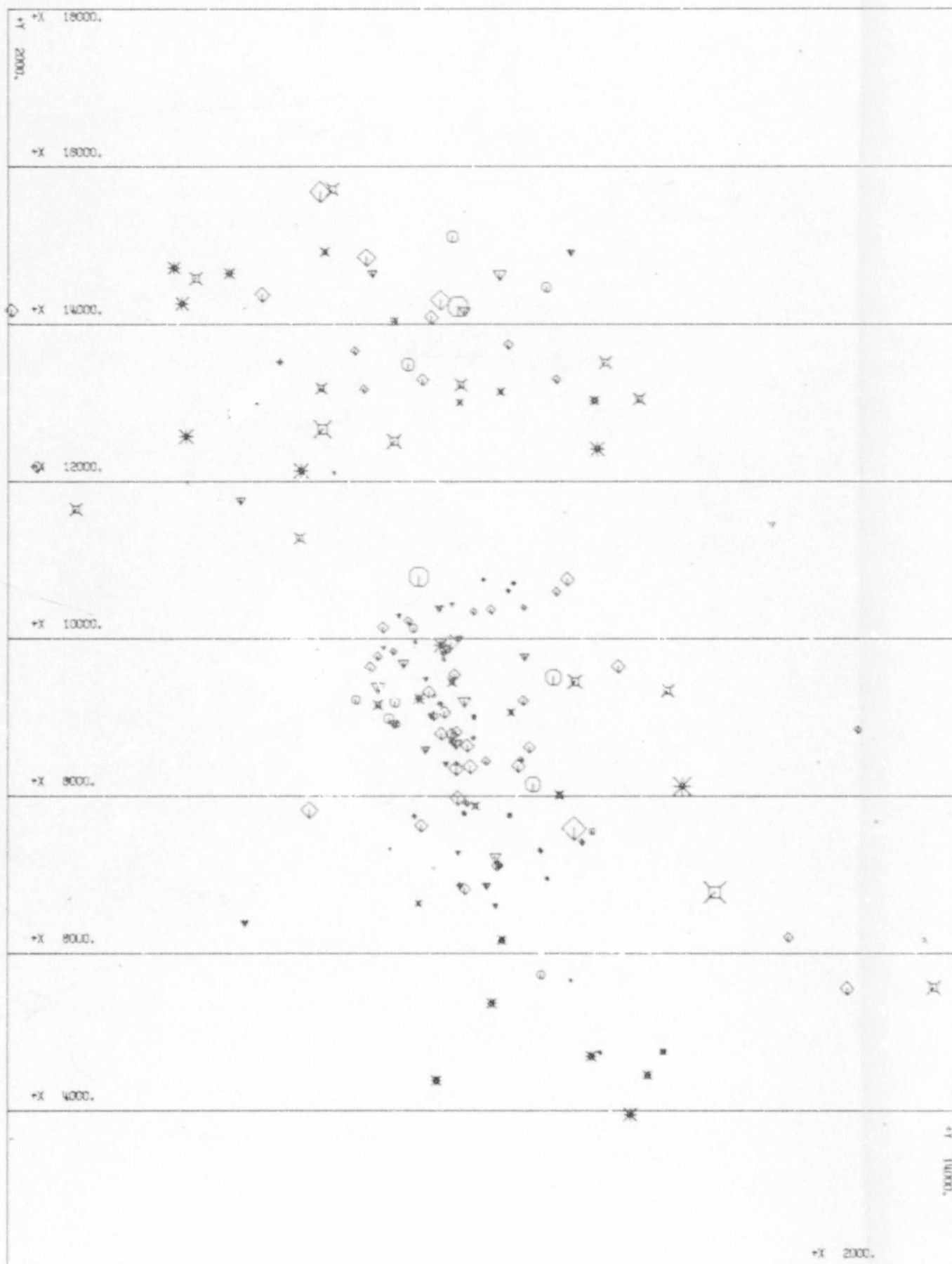


Figure A1-7

Author Arnott Frank Walter

Name of thesis Seismicity In The Welkom Area, O.f.s. (with Special Reference To The Origin Of The 1976-12-8 Event).
1981

PUBLISHER:

University of the Witwatersrand, Johannesburg

©2013

LEGAL NOTICES:

Copyright Notice: All materials on the University of the Witwatersrand, Johannesburg Library website are protected by South African copyright law and may not be distributed, transmitted, displayed, or otherwise published in any format, without the prior written permission of the copyright owner.

Disclaimer and Terms of Use: Provided that you maintain all copyright and other notices contained therein, you may download material (one machine readable copy and one print copy per page) for your personal and/or educational non-commercial use only.

The University of the Witwatersrand, Johannesburg, is not responsible for any errors or omissions and excludes any and all liability for any errors in or omissions from the information on the Library website.